GOVERNMENT OF THE DISTRICT OF COLUMBIA
WASHINGTON, DC

Adrian M. Fenty
Mayor

ANNUAL REPORT

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221

August 19, 2008

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LIST OF ACRONYMS AND ABBREVIATIONS

AFV	Alternative Fuel Vehicle
AWRC	Anacostia Watershed Restoration Committee
AWS	Anacostia Watershed Society
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CSO	Combined Sewer Overflow
CWA	Clean Water Act
District	District of Columbia
DCMR	District of Columbia Municipal Regulations
DCPS	District of Columbia Public Schools
DCRA	Department of Consumer and Regulatory Affairs
DDOE	District Department of the Environment
DDOT	District Department of Transportation
DOH	Department of Health
DPR	Department of Parks and Recreation
DPW	Department of Public Works
EE-CARS	Environmental Education for the Compliance of Automotive Repair Shops
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FHA	Federal Highway Administration
FY	Fiscal Year
GAO	Government Accounting Office
GIS	Geographic Information System
GPS	Global Positioning System

GSA	General Services Administration
HWD	District Department of the Environment Hazardous Waste Division
ICPRB	Interstate Commission on the Potomac River Basin
IPM	Integrated Pest Management
LID	Low Impact Development
LQG	Large Quantity Generator
MAR	Master Address Repository
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWF	National Wildlife Federation
NWS	National Weather Service
OCTO	Office of the Chief Technology Officer
OPM	Office of Property Management
PCB	Polychlorinated Biphenyl
PEPCO	Potomac Electric Power Company
Permit	National Pollutant Discharge Elimination System Permit
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SGC	Schoolyard Greening Consortium
SQG	Small Quantity Generator
SWEEP	Solid Waste Education and Enforcement Program

SWMD	Stormwater Management Division
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
USDA ARS	U.S. Department of Agriculture, Agricultural Research Service
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WASA	District of Columbia Water and Sewer Authority
WLA	Waste Load Allocation
WPCCP	Water Pollution Control Contingency Plan
WPD	Watershed Protection Division
WPS	Worker Protection Standards
WQD	Water Quality Division

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DISTRICT OF COLUMBIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT

I. BACKGROUND

The Government of the District of Columbia (District) submits this Annual Report on stormwater pollution control for fiscal year (FY) 2007 (October 1, 2006 – September 30, 2007) in compliance with the requirements established in 40 Code of Federal Regulations (CFR) 122.42(c) and the District's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Water System Permit No. DC0000221 (Permit). The Permit allows discharges of stormwater from the Municipal Separate Storm Sewer System (MS4) to the Potomac and Anacostia Rivers and their tributaries in accordance with the conditions of the Permit. A copy of the Permit is posted on the DDOE Stormwater Management Division website (www.ddoe.dc.gov). The purpose of the District's MS4 program is to reduce pollutant loadings from the MS4 to receiving waters, and to contribute towards meeting District water quality standards and the approved Total Maximum Daily Loads (TMDLs) for those waters. This Annual Report details MS4 Permit-related activities conducted by District agencies during FY 2007 to reduce and control pollutant discharge from the MS4 to the Potomac and Anacostia Rivers and their tributaries. The District agencies responsible for implementing the activities required by the Permit are the District Department of the Environment (DDOE), District of Columbia Water and Sewer Authority (WASA), Department of Public Works (DPW), District Department of Transportation (DDOT), and the District Office of Property Management (OPM).

This Annual Report is submitted together with the 2008 Implementation Plan in compliance with the reporting requirements defined in Parts III.A, III.B, III.C, III.D, IV.A.I, VI, and IX.B of the Permit.

The 2008 Annual Report contains sections in the following order: Background, Overview, and Standard Permit Conditions (Permit Administration Legal Authority, Source Identification, Monitoring Program, Management Programs, TMDL Waste Load Allocation (WLA) Plans, Funding, and Fulfillment of the Clean Water Act (CWA)). Highlights of the MS4 program during FY 2007 are provided in the Overview-Summary of Findings section of this report. The report is organized based on the headings of the Permit to document accomplishments for specific requirements stated in the Permit.

I.A MS4 Permit

The U.S. Environmental Protection Agency (EPA) issued the MS4 Permit to the District on April 19, 2000, effective for a three-year term. The Permit allows discharges from the MS4 to the Potomac and Anacostia Rivers and their tributaries in accordance with the conditions of the Permit. On October 19, 2002, the District applied to renew the Permit and submitted an upgraded Stormwater Management (SWM) Plan for approval. The SWM plan describes the District's plan to control pollutant discharge from the MS4 to the Potomac and Anacostia Rivers and their tributaries. On August 19, 2004, EPA renewed the District's MS4 Permit for a five-year term. Table 1 presents the time line of events pertaining to the Permit.

This 2004 Permit was challenged by a number of environmental groups. This challenge ultimately led to an EPA Environmental Appeals Board-mediated process wherein the District and challenging environmental organizations attempted to reach agreement on permit provisions. While this process failed to reach a settlement, the District and EPA did reach a two-party agreement on a series of enhancements to the District's MS4 Permit. These enhancements are described in detail in a Letter Agreement between DDOE and EPA Region III, dated November 27, 2007.

The 2004 Permit as modified by the Letter Agreement requires significant new activities, with its emphasis shifting from planning (in the original term NPDES permit) to implementation of plans submitted by the District, many with specific and measurable benchmarks and commitments. In particular, the Permit requires the District to demonstrate measurable progress towards compliance with the TMDL assigned to the MS4 for these watersheds including activities outlined in the Anacostia River and Rock Creek TMDL WLA Implementation Plans.

It is anticipated that the next MS4 Permit issued to the District will be based on an approach similar to that for the November 2007 Letter Agreement. Quantifiable measurable goals will be included in the Stormwater Management Plan, to be submitted in February 2009 in tandem with the District's next Permit application.

I.B Transfer of Stormwater Administration

The District Department of the Environment was established in February of 2006. A provision of the Department's Establishment Act required DDOE to assume responsibility for the District's Stormwater Administration, including management and oversight of the District's MS4 Permit.

In February of 2007, the Stormwater Administration was formally transferred from WASA to DDOE.

The legislation establishing DDOE also called for a study to be conducted concerning the organization and operation of the District's stormwater administration. In FY 2007, a grant was awarded to RESOLVE, a local non-profit organization, to conduct this study.

I.C Memorandum of Understanding

DDOE has executed independent MOUs with DDOT, DPW, and WASA. These MOUs require the agencies to implement activities required under the Permit and specify the amount to be reimbursed for the implementation of these activities. Copies of these MOUs can be found in Appendix A of this report.

I.D Stormwater Task Force

In 2002, the Stormwater Task Force was established to help the District's stormwater management programs to comply with the MS4 NPDES permit. The Stormwater Task Force is comprised of four District agencies (DDOE, DDOT, DPW and WASA). Representatives of the agencies met monthly throughout FY 2007. These public agencies have implementation, enforcement, and oversight responsibilities for required stormwater activities outlined in the permit. During FY 2007, the Office of Property Management (OPM) began participating in the Stormwater Task Force.

I.E TMDL WLA Implementation Plans

On February 19, 2005, the District submitted the Anacostia River Watershed TMDL WLA Implementation Plan to EPA in compliance with the 2004 MS4 Permit. The TMDL WLA Implementation Plan for the Rock Creek Watershed was delivered on August 19, 2005. These plans analyze the cost effective methods for reducing pollutants discharged from the MS4. Both plans have been approved by EPA; the implementation schedule and budget provided in each of the TMDL WLA Implementation Plans began in FY 2007. District agencies and WASA have begun implementing these activities, as described in Section III.F of this report.

Table 1. Permit Time Line of Events.

Date	Event	Summary
April 2000	EPA issues MS4 Permit	Information gathering, planning, program development, and a requirement to control stormwater pollution
December 2000	District Agencies sign a Memorandum of Understanding (MOU)	Interagency agreement between the Department of Health (DOH), DPW, and WASA that delegates responsibilities of permit-related activities. The responsibilities of each agency were outlined in a matrix attached to the MOU.
		Mandates the preparation of an annual Agency Compliance Plan, which sets forth each agency's proposed budget plan dedicated to MS4 Permit compliance activities. The 2007 Agency Compliance Plan can be found on the SWMD website.
June 2001	Stormwater Permit Compliance Amendment Act of 2000 (DC Law No. 13-311) becomes effective	Created a Stormwater Administration within WASA and established WASA as the lead agency to coordinate actions among other District agencies in connection with permit compliance activities.
		Authorized WASA to collect a flat stormwater fee from retail water customers within the District.
		Established an Enterprise Fund from the stormwater fee to reimburse participating agencies for costs incurred because of MS4 Permit mandated activities. Activities include administration, operations, and capital projects.
		Designated DOH, DPW, and WASA responsible for the MS4 permit.
		Requires the preparation of a Semi-Annual Report to the Mayor and the DC Council that describes the activities undertaken in the previous six months and outlines activities planned for the following six months.
July 2001	WASA begins collection of Stormwater Fee (Enterprise Fund)	WASA began collecting the stormwater fee with the July billing cycle: • Single-Family: $7 per year • Multi-Family: 1.4 percent of water bill • All other properties: 2.0 percent of water bill
October 2002	DDOT assumes some of the DPW Permit-related responsibilities	Newly formed DDOT assumed selected permit-related activities previously allocated to DPW.
August 2004	EPA renews MS4 Permit	Requires a shift from planning and development of programs to implementation.
		Requires the District to demonstrate significant progress towards pollutant reductions.
		Requires the development of TMDL WLA Implementation Plans for Anacostia River and Rock Creek watersheds.
		Requires the District to prepare an Annual Report, Implementation Plan, and Discharge Monitoring Report annually for submission to EPA.
		A new matrix of activities based on the 2004 Permit was revised by the Task Force agencies to reflect the new allocation of responsibilities. However , due to the Permit challenge, the revision was not completed until 2007.

Table 1. Permit Time Line of Events.		
Date	**Event**	**Summary**
December 2004 through 2007	Environmental organizations challenge the District MS4 Permit	Environmental organizations challenge and appeal the District's MS4 Permit, leading to a lengthy mediation and negotiation process overseen by EPA's Environmental Appeals Board.
February 2006	DDOE assumes DOH Permit-related responsibilities	Newly formed DDOE assumed all permit-related activities previously allocated to the Water Quality and Watershed Protection Divisions within DOH.
February 2007	DDOE becomes administrator of the Stormwater Program	District legislation established DDOE as the new administrator of the District's Stormwater Program.
		DDOE coordinates activities among other District agencies including DPW, DDOT, and WASA.
		WASA continues to collect the stormwater fee first established in 2001.
	EPA Region III Office of Compliance, Enforcement, and Environmental Justice audits the District MS4 program	EPA conducted an in-office and field audit of the MS4 program a few days after DDOE assumed responsibility for MS4 Permit administration. The EPA audit report was not issued during this reporting period.
November 2007	DDOE and EPA Region III sign the MS4 Permit Letter Agreement	DDOE submitted to EPA a detailed schedule of specific and measurable commitments and benchmarks that will be implemented under the MS4 Permit in the interests of managing stormwater pollution.

I.F Annual Reporting

The District has conducted a variety of activities geared towards compliance with the Stormwater Permit requirements as outlined in the compliance matrix (Schedule A of the MOU). In FY 2007 the District submitted the 2007 Annual Report, the 2007 Implementation Plan, and the 2007 Discharge Monitoring Report to EPA on August 19, 2007 (per requirements of the Permit).

The Annual Report described MS4 permit-related activities conducted by District agencies during FY 2006, while the Implementation Plan projected activities scheduled for FY 2008 through FY 2009. A Discharge Monitoring Report including the analytical laboratory results of discharge samples collected during calendar year 2007 will be submitted at a later date.

This 2008 Annual Report includes information on other MS4 related activities, such as the District's administrative and regulatory actions and the capital improvements of stormwater facilities.

A copy of the most recent Semi-Annual Report (June 2008) is available on the SWMD website. A copy of this document is also available at the Martin Luther King, Jr. Library, located at 9th and G Streets, NW.

I.G Permit Administration

DDOE was designated by the 2005 DDOE Establishment Act as the MS4 Permit Administrator, and assumed this responsibility in February of 2007. At that point, EA Engineering, Science, and Technology, Inc. were under contract with WASA to provide engineering consulting and administrative support for the MS4 Permit-related activities. EA's contract expired on September 30, 2007; since then, DDOE staff have addressed all MS4 Permit administration responsibilities.

II. OVERVIEW: SUMMARY OF ACTIVITIES

This Annual Report delineates the achievements made in FY 2007 addressing the required provisions of the Permit. The following subsections summarize the activities of FY 2007.

II.A Source Identification

The existing MS4 infrastructure mapping and outfall location data have been combined to develop a database. Final verification of the District outfalls including "major" and "others" has been completed. There are approximately 800 outfalls in the District, of which 410 are located in the MS4 area. A database of these outfalls is complete. The outfall coordinates obtained by Global Positioning System (GPS) have been recorded in the MS4 Program outfall database. The database contains information on the shape, type of material and a photograph of each outfall. In FY 2007, the GPS coordinates were converted to the Maryland State Plane coordinate system, which is the Office of the Chief Technology Officer (OCTO)-Geographic Information Systems (GIS) standard. The outfall database is now part of the DDOE geodatabase.

II.B Monitoring Program

The 2008 Discharge Monitoring Report will provide data and analysis of the Potomac monitoring program, including the dry weather monitoring program and the wet weather screening program.

The District continues to implement a water quality monitoring program for oil and grease in the Hickey Run watershed; samples were collected in FY 2007. Auto repair facilities continue to be targeted for education on proper disposal of waste oil. In FY 2007, Hickey Run was removed from the 303(d) list of Impaired Waters for oil and grease.

Throughout FY 2007, DDOE continued to work toward the installation of a large trash trap and oil separator at the Hickey Run outfall located on the property of the National Arboretum.

II.C Management Programs

II.C.1 Commercial, Residential, and Federal and District Government Areas

The District has developed and continues to implement a program to control stormwater discharges from commercial, residential, federal and District-government areas. The management plan for stormwater pollution control on commercial, residential and federal and

District government areas entails a mixture of programs emphasizing structural and non-structural BMPs and educational programs. Stormwater pollution control activities by District agencies not party to the Permit are listed in Appendix A. The District provides guidelines, such as the *2003 District of Columbia Standards and Specifications for Soil Erosion and Sediment Control* and the *Storm Water Management Guidebook,* that have been developed to help control stormwater pollution from commercial, residential, federal and District government areas. In FY 2007, DDOE began an effort to revise and update the *Storm Water Management Guidebook,* selecting the Center for Watershed Protection to conduct this work. The current documents were provided to EPA as attachments to the 2007 Annual Report.

Programs and/or activities related to Permit compliance include:

- Functional landscaping programs, such as the use of structural BMPs and riparian buffer zones on new roadway construction.
- Low Impact Development (LID) practices.
- Catch basin cleaning, maintenance of the MS4, street sweeping, and leaf collection.
- Rain leader disconnection.
- Education programs on pet wastes, fertilizers, and landscaping.
- Methods of measuring the performance of activities.
- Strengthening erosion control for new construction.
- Continuing to work with federal and District facilities in order to implement and maintain stormwater pollution controls on new and re-build construction.

II.C.2 Industrial Facilities

The establishment of a comprehensive database of industrial facilities in the District and the initiation of the wet weather screening program are primary components of the Industrial Facilities Program. The implementation of the management plan for industrial facilities will help to control and reduce stormwater pollution from industrial facilities in accordance with the requirements of the CWA. The industrial facilities database is a compilation of industrial facilities within the MS4 area.

II.C.3 Construction Sites

DDOE has an inspection and enforcement program for construction sites in commercial and residential areas and is working continually to strengthen its erosion control program for new construction. The management plan for stormwater pollution control on construction sites

emphasizes the review and approval process for erosion and sediment control plans, and the inspection and enforcement procedures of the construction permitting program, as well as construction site and plan educational programs, traffic pollution control strategies, and air pollution compliance activities.

DDOE has refined and updated the District's automated database system for tracking stormwater management facilities inspected for maintenance to include tracking of construction projects with stormwater management BMPs. The number of inspections of construction sites in FY 2007 was 5,327.

II.C.4 Flood Control Projects

Flood Insurance Rate Maps (FIRMs) for the District are currently being revised by the Federal Emergency Management Agency (FEMA) using the latest technologies and the most current data. During FY 2007, DDOE met 9 times with FEMA to review draft digital FIRMs as part of the national flood map modernization program.

On September 26, 2007 FEMA proposed a rule to define Base Flood Elevations (BFEs) and modifications to the BFEs in the District. These proposed BFEs were open for public review and comment; this comment period was still open at the end of the reporting period. An update will be provided in the next Annual Report.

II.C.5 Monitor and Control of Pollutants from Municipal Landfills and Other Municipal Waste Facilities

There are no active landfills within the boundaries of the District**.** In FY 2007, EPA conducted a field audit of the Benning Road municipal transfer station, which is located in the MS4 area of the city. The audit report was not issued during the reporting period.

II.C.6 Monitor and Control of Pollutants from Hazardous Waste Sites

DDOE continues to update federal and District facilities information as needed based on the MS4 monitoring effort. DDOE has prepared a database that includes facilities in the District that are registered with federal and state regulators because they generate, store, or have released hazardous materials.

DDOE continues to conduct inspections of Resource Conservation and Recovery Act (RCRA) hazardous waste facilities to determine compliance with hazardous waste regulations. DDOE

conducted inspections at several RCRA Large Quantity Generator (RCRA-LQG) and "restricted access" facilities within the District between October 1, 2006 and September 30, 2007.

II.C.7 Pesticides, Herbicides, and Fertilizer Applications

The DDOE Pesticide Management Program outlines the mission, goals and implementation of the regulations that affect commercial applications of pesticide and herbicides. The program outlines the requirements for certification and training for the application of pesticides and herbicides in the District. The program also outlines requirements for enforcement actions and programs for protecting endangered species, ground water, and workers. Revised District pesticide regulations (20 DCMR §§ 20-25) are currently being reviewed by the Pesticide Group at EPA Region III. Control of pesticide, herbicide, and fertilizer applications has also been integrated into the Public Education Program.

II.C.8 Deicing Activities

The District has completed a comparison of deicing products and studies of alternative chemicals and deicing techniques. Brine solution was recommended as a viable alternative to sodium chloride in each of the studies reviewed. Based upon the comparison of deicing products the District uses a 23 percent sodium and 77 percent water solution as a pretreatment on bridge surfaces to reduce pollutant loading to receiving waters from deicing activities. Brine is currently stored at the maintenance facility located at 401 Farragut Street, NE.

II.C.9 Snow Removal

Dumping of snow in areas adjacent to water bodies, wetlands, or drinking water sources is not part of the District's snow management plan, and will be avoided except as necessitated by extreme emergencies. The snow removal plan is being reviewed for applicability; no revisions are planned. Although there were several occasions when snow plowing was necessary, no snow removal from DC streets was necessary during FY 2007.

II.C.10 Detect and Remove Illicit Discharges

DDOE and WASA maintain an illicit discharge detection program, issue notices of violation as needed, and monitor corrective actions taken by violators. Illicit connections not corrected are referred to the Plumbing Inspection Branch, Building and Land Regulation and Administration, Department of Consumer and Regulatory Affairs (DCRA) for enforcement action. Illicit connection detection and enforcement procedures have been developed in conjunction with the

dry weather screening, inspection of BMPs, and public education programs. These procedures were part of the *Draft Water Quality Division Enforcement and Compliance Manual* but have now been replaced with: *The Environmental Enforcement Process in the District of Columbia.* Both documents were provided as attachments to the 2007 Annual Report. The *Environmental Enforcement Process* will also be included in the 2009 SWMP.

WASA continues to conduct the floatables reduction program utilizing skimmer boats on the Potomac and Anacostia Rivers. Activities to remove floatable debris and trash from the rivers as well as accumulated trash on river banks continue five days a week using skimmer boats and support boats.

II.C.11 Enforcement Plan

DDOE enforcement procedures are now addressed in *The Environmental Enforcement Process in the District of Columbia*. This document details the written enforcement strategy outlining how enforcement actions, such as violation notices, notices of infraction, and stop work orders, are issued and adjudicated. The strategies outlined in the manual provide the standard operating procedures for inspection and enforcement efforts within the District.

In FY 2007, the Office of Inspection and Enforcement was created within DDOE. Also during FY 2007, the Inspection and Enforcement Branches within the Water Quality and Water Protection Divisions continued to use a GIS based tool to locate SWM facilities. The use of the GIS tool has improved efficiency in conducting inspections for maintenance.

DDOE investigates illicit discharges and enforces the District water quality regulations. During FY 2007, DDOE personnel conducted 38 illicit discharge investigations and targeted facility inspections.

II.C.12 Public Education

WASA, DDOT, DPW and DDOE conduct public education activities related to stormwater pollution. During FY 2007, the Stormwater Administration presented cash awards to two students who presented projects on stormwater-related issues at the District-wide Mathematics, Science and Technology Fair at McKinley Technology High School. Public education programs continue to include an environmental education resource center, public meetings, environmental fairs, conservation education, teacher training workshops, and grants for promoting pollution prevention.

II.D Program Funding

The District's Stormwater Permit Compliance Amendment Act of 2000 established a Stormwater Permit Compliance Enterprise Fund to provide money for implementing the activities required by the 2004 MS4 Permit. Starting July 1, 2001, WASA began collecting a stormwater fee for the Enterprise Fund based on the following schedule:

- Single-Family Residence: $7 per year.
- Multi-Family Residence: 1.4 percent of water and sewer bill.
- All other properties: 2.0 percent of water and sewer bill.

This fee structure was designed to raise $3.1 million/year, which was the estimated cost of the activities required to comply with the 2000 MS4 permit. Permit compliance costs were revised and are now estimated to be approximately $7.2 million for FY 2008. Costs are expected to increase further as a result of the recent MS4 Permit Enhancement Agreement with EPA Region III and the next permit cycle beginning in 2009. The current revenue from the stormwater user fee (approximately $3.1 million per year) will not sustain these activities.

On September 9, 2002, the Stormwater Advisory Panel submitted a report to the Council of the District of Columbia that fulfilled the requirement of DC Official Code § 34-2202.06c. The Code required that the Stormwater Advisory Panel prepare "comprehensive recommendations to the Council that identify the best means by which that District of Columbia could meet all present and future Federal regulatory and Permit requirements pertaining to the discharge of stormwater into receivable waters."

The Advisory Panel reported that the 2000 MOU provided an effective framework for allocating and coordinating the efforts of the District's agencies to meet regulatory requirements, but the current rate structure may require adjustments in order to meet the potential increase in costs expected with the 2004 MS4 Permit. The Advisory Panel recommended that a study be performed to evaluate fee structures based on the amount of impervious surface area, as well as other stormwater fee structures in use by jurisdictions in the Mid-Atlantic Region and throughout the United States.

In addition, in July of 2007 Councilmember Jim Graham directed the District Department of the Environment to convene a Task Force to address stormwater management issues in the District of Columbia. This Task Force was charged with making legislative recommendations on a

number of stormwater-related topics, including the adequacy of current funding mechanisms for stormwater programs. The Task Force met several times between November 2007 and March 2008, and prepared a number of legislative recommendations for the DC Council's consideration. Among these was a recommendation to base the Stormwater Fee on impervious surface, as well as granting the DDOE Director the authority to adjust stormwater fees as necessary.

DDOE's efforts to shift the stormwater fee to an impervious basis would take advantage of database and billing infrastructure currently under development by DC WASA. It is expected that this technical infrastructure will be in place in April of 2009. The legislation authorizing the impervious fee is currently working its way through the legislative process. Because these technical and administrative steps will not be complete at the start of the next Fiscal Year, DDOE also sought authority to adjust stormwater fees as necessary. With this authority, DDOE has proposed a rule to enact the first adjustment to the stormwater fee since its inception. This is currently working its way through the rulemaking and comment process, but is being conducted with the goal of ensuring DDOE has adequate funding to implement the Permit beginning in FY 2009.

III. STANDARD PERMIT CONDITIONS

III.A Next Permit Cycle

The District's current Permit expires in August 2009, but all current Permit requirements will stay in force until a new permit is issued.

III.B Permit Administration

An organization chart for the agencies responsible for MS4 permit compliance is shown in Table 2. The responsibilities of each agency are set forth in inter-agency MOUs and an associated matrix of commitments. The MOUs and matrix have been updated to reflect the requirements contained in the 2004 MS4 Permit and the 2007 Permit Enhancement Agreement.

III.C Legal Authority

Performance Standard: The District maintains the legal authority to control MS4 discharges through the application of the regulations provided in the District of Columbia Municipal Regulations (DCMR). In addition, the District developed and maintains the legal authority to enforce erosion and sediment control and the control of stormwater pollution within the MS4 drainage area.

MS4 Discharges

The MS4 Permittee has the legal authority to control all discharges into the waters of the District under the Storm Water Permit Compliance Amendment Act of 2000, D.C. Official Code §34-2202.02(a) *et. seq.*, the Water Pollution Control Act of 1984, D.C. Official Code § 8-103.01 *et. seq.*, and the Soil Erosion and Sedimentation Control Act of 1977, codified in 21 DCMR §§ 500-507, and the implementing regulations in DCMR Title 21 Chapters 5 and 11.

Erosion and Sediment Control

The Water Pollution Control Act of 1984, as amended, D.C. Official Code § 8-103.01 *et. seq.*, and the Sedimentation Control Act of 1977, as amended, codified in 21 DCMR §§ 500-507 provide the legal authority to enforce the erosion and sediment control provisions of the SWM Plan. The SWM regulations will be updated to require construction site managers to have erosion control training.

Table 2. Agencies Responsible for District of Columbia MS4 Permit Compliance.

Responsible Agency*	Compliance Activity
DDOE	MS4 program administration
	Source identification
	Wet/dry weather monitoring program
	Wet weather screening program
	Flood control projects review
	Pollutant control from hazardous waste sites
	Pesticide, herbicide, and fertilizer application
	Promoting LID practices
	Illicit discharge detection
	Sediment erosion control
	Inspection/enforcement
WASA	Floatables reduction program
	Catch basin cleaning
	Illicit discharge detection
DPW	Street sweeping
	Seasonal leaf and holiday tree collection program
	Household hazardous waste collection
	Stormwater management at municipal waste transfer stations
DDOT	Pollutant reduction from vehicles and roadways
	LID practices in public right of way (ROW)
	Deicing and snow removal
All Agencies	Public outreach and education
	Annual reporting to EPA and Mayor
	Monthly Task Force meetings

*Agency addresses:
DDOE: District Department of the Environment, 51 N Street, Fifth Floor, NE, Washington, DC 20002
DDOT: District Department of Transportation, 64 New York Avenue, NE, Washington, DC 20002
DPW: Department of Public Works, 2000 14th Street, Washington, DC 20009
WASA: Water and Sewer Authority, 5000 Overlook Avenue SW, Washington, DC 20032

Illicit Discharges

Removal of illicit connections to the MS4 is enforced through the Plumbing Inspection Branch of DCRA. Enforcement authority prohibiting the dumping of used motor vehicle fluids is provided in D.C. Official Code § 8-103.07(e).

In FY 2007, there were no additional laws added to the legal authority of the District regarding SWM. The current laws are deemed adequate to provide compliance with the Permit. However, during FY 2007 work began on revisions to the District's Stormwater Management regulations. A copy of the regulatory proposal will be included in the 2009 SWMP.

III.D Source Identification

Part II of the Permit describes the requirements for Source Identification. The Permit requires the District to compile and submit information and significant changes affecting the MS4 due to land use activities, population estimates, runoff characteristics, major structural controls, landfills, publicly owned lands, and industries. A summary of these compliance activities follows.

III.D.1 Land Use Activities

The District is highly urbanized, with little available land for further development. The MS4 drainage area contains approximately 26,500 acres (two-thirds of the District). The combined sewer overflow (CSO) drainage area encompasses approximately 12,640 acres (one-third of the District). All new development and redevelopment of existing areas is subject to the District's stormwater regulations with a review by DDOE. The land use and impervious area must be indicated on all plans submitted to DDOE for review and inspection. No single development plan reviewed to date has sufficient land area to make a significant impact to the MS4 system. The cumulative impacts of the proposed and new developments reviewed in FY 2007 have not resulted in a significant change for the existing land use activities in the portion of the District served by the MS4. Table 3 provides the existing land use by planning area in the District (MS4 and CSO).

III.D.2 Population Estimates

The Bureau of the Census reported in the 2000 Census of Washington, DC that there were 572,059 people residing within the District. A population estimate for 2005 projected that the population could decline by 3.7 percent to 551,136 and then decline by an additional 3.9 percent to 529,785 for 2010, the year of the next complete census. While the population decline over the past five years is not considered significant with respect to sources of pollution in stormwater, a continued trend in population reduction could result in future change. Additional details of the 2000 U.S. Census for the District can be found at http://www.census.gov/.

III.D.3 Runoff Characteristics

As noted in Section III.D.1, no significant changes in land use activities were identified in FY 2007. Therefore, no significant changes in runoff characteristics were identified in the MS4 drainage area as a result of land use activities**.**

Table 3. Acres of Existing Land Use by Planning Area, 2005.

	Capitol Hill	Central Washington	Far Northeast & Southeast	Far Southeast & Southwest	Lower Anacostia Waterfront/Near Southwest	Mid City	Near Northwest	Rock Creek East	Rock Creek West	Upper Northeast	Citywide	Percent (%)
Road Rights-of-Way	759	899	1,338	906	477	628	716	1,311	1,760	1,223	10,018	25
Single Family Detached Homes	6	0	775	164	7	15	84	919	2,324	641	4,936	13
Single Family Attached Homes/ Row Homes	520	10	641	328	30	497	340	606	290	611	3,874	10
Low-Rise Apts.	43	10	436	555	106	136	110	85	185	189	1,856	5
High-Rise Apts.	4	26	20	44	26	59	65	25	109	25	402	1
Commercial	97	448	129	63	122	144	220	106	170	296	1,795	5
Industrial	5	16	12	5	42	21	6	16	0	295	418	1
Local Public Facilities	72	47	154	441	47	54	75	131	67	102	1,110	3
Federal Facilities (excl. parks)	47	481	4	1,067	409	1	1	412	283	76	2,781	7
Institutional	42	67	71	117	22	142	249	163	659	730	2,262	6
Permanent Open Space	296	678	1,321	729	533	141	354	878	2,011	1,038	7,980	20
Rail, Communication, Utilities	1	36	223	74	11	97	6	83	4	321	857	2
Vacant	66	58	179	188	51	36	33	22	111	99	843	2
TOTAL LAND	1,958	2776	5,305	4,687	1,884	1,971	2,259	4,757	7,982	5,645	39,225	100.0
Water	*117*	*509*	*135*	*1,791*	*1,295*	*46*	*239*	*19*	*313*	*89*	*4,554*	
TOTAL	2,075	3,284	5,440	6,474	3,179	2,017	2,498	4,776	8,288	5,735	43,766	

Source: Office of Planning, Comprehensive Plan District Elements, December 2006

III.D.4 Major Structural Controls

Ongoing maintenance of the MS4 infrastructure including structural controls is conducted to ensure consistent performance of MS4 components. There have been no major structural controls added or removed from the MS4 conveyance system in FY 2007

except for a trash rack that was installed in one of the MS4 area's pumping stations. Table 4 provides a list of traditional and non-traditional BMPs by structure type and the number within the District for FY 2007. The SWM facilities listed include both facilities approved through the District's regulatory review process as well as those installed as part of DDOE incentive programs.

Table 4. Number of Stormwater Facilities by Structure Type Designation, FY 2007.

BMP	BMP Structure Type	Number
Aqua-Shield/Filter	Dry Detention Pond and Hydrodynamic Structures	1
Basin, Detention	Water Quality	1
Basin, Retention	Water Quality	0
Baysaver	Dry Detention Pond and Hydrodynamic Structures	10
Bioretention	Filtering Practice	23
Catch Basin	Water Quality	8
Downstream Defender	Dry Detention Pond and Hydrodynamic Structures	0
Dry Pond	Dry Detention Pond and Hydrodynamic Structures	0
Dry Well	Dry Detention Pond and Hydrodynamic Structures	8
Enviropod	Catch basin insert	0
Ex-filtration trench	Filtering Practice	3
Filters/Tree Box	Filtering Practice	1
Green Roof	Impervious Surface Reduction/Non-structural Practices	7
Infiltration Trench	Infiltration Practice	37
Leaching Tank	Filtering Practice	0
Modified Manhole	Dry Detention Pond and Hydrodynamic Structures	1
Modular Rain Tank	Filtering Practice	0
Oil-Grit Separator	Dry Detention Pond and Hydrodynamic Structures	0
RainStore System	Infiltration Practice	3
Sandfilter	Filtering Practice	1
Sandfilter, bisected CMP	Filtering Practice	0
Sandfilter, underground	Filtering Practice	16
Storm Chamber System	Infiltration Practice	2
Stormceptor	Dry Detention Pond and Hydrodynamic Structures	3
Stormfilter	Dry Detention Pond and Hydrodynamic Structures	12
Underground Retention	Infiltration Practice	5
Vegetated Biolfilter, Swale, Strip	Filtering Practice	0
Water Quality Inlet	Dry Detention Pond and Hydrodynamic Structures	15
Water Quality Manhole	Dry Detention Pond and Hydrodynamic Structures	1
Water Quality Swale	Dry Detention Pond and Hydrodynamic Structures	2
Total		**160**

Source: BMP Types defined from information provided on the Chesapeake Bay Tributary Tools website: http://www.chesaeakebay.net/info/wqcriteriatech/tributary_tools.cfm#resources

III.D.5 Landfills

There are no active landfills within the District.

III.D.6 Publicly Owned Lands

The National Park Service (NPS) is the primary public entity holding land within the MS4 area of the District. According to Government Accounting Office (GAO) Report No. GAO-05-378, NPS manages 356 Federal properties in the District covering approximately 6,735 acres of land. A majority of NPS properties are referred to as circles, squares and triangles less than one acre in size; however, parks and parkways represent approximately 93 percent of the total acreage for the 356 properties.

The U.S. Department of Agriculture Agricultural Research Service (USDA ARS) runs the National Arboretum. The Arboretum is 446 acres in size and has not increased or decreased in size in the past five years.

The DC Department of Parks and Recreation (DPR) also controls acreage in the District. The Parks and Recreation Master Plan website (http://www.bakerprojects.com/dprmasterplan/) states that there are approximately 1,000 acres of land managed by DPR. The amount of publicly owned lands in the District has increased slightly as the federal government transfers lands over to the District. Table 5 presents the acreage of publicly owned land in 2007.

Table 5. Acreage of Publicly Owned Lands as of 2007.

Agency	Total Acres
National Park Service	6,735
United Stated Department of Agriculture Agricultural Research Service	446
DC Department of Parks and Recreation	~1,000
DC Housing Authority	280

III.D.7 Industries

No significant changes in industrial activity were identified in FY 2007. The Industrial Facilities Database has been updated and is discussed in detail in Section III.F.2 of this report. The database will continue to be used to track changes in industrial activity in the District.

III.D.8 Electronic Mapping

Existing mapping of the separate storm sewer conveyance system has been digitized and combined with the data regarding storm sewersheds and outfall locations to create a database of the MS4 infrastructure**.** Final verification of the District outfalls has been completed. The database contains information including outfall size, type and condition. There are approximately 800 outfalls in the District, of which 400 are located in the MS4 area. Table 6 presents the number of outfalls in the MS4 by watershed. The remaining outfalls are located outside of the MS4.

Table 6. Number of Outfalls Identified by Watershed.

Watershed	Number of Outfalls
Anacostia River	155
Potomac River	127
Rock Creek	128

The MS4 Program has made progress toward becoming an integrated planning and management tool using GIS. Additional information is provided in Section III.D.9 of this report.

III.D.9 GIS Stormwater Model

Part V of the Permit describes reporting requirements for the development of a GIS stormwater model. The stormwater pollution control model uses GIS to compile information concerning the District. Specific GIS information regarding the MS4 system, outfall inspection, pollutant estimates provided by the District and federal government agencies have been added to the MS4 data.

Performance Standard: The District maintains a database of existing mapping information and updates the database as pertinent data are developed.

The stormwater pollution control model is being improved to better model stormwater pollution control in the District. Work continues on using the model to estimate pollutant loadings for the District's watersheds. Please refer to Section IV.D.10 for more information on modeling. Basic geographic information compiled to date is included in Table 7.

Table 7. OCTO-GIS Information.

Basic Geographic Information Compiled – DC Base Map Layer
District Boundaries
DC property (Schools, DPR, Housing)
Street maps and names
Schools
Federal building locations
Waterway and water body information
Zoning information
Floodplains
Field Verification Information
MS4 piping system
Outfall location information (type, size, condition)*
Storm drain locations
GIS Data from the MS4 Task Force Agencies
Structural BMP locations
Non-structural BMP locations
School yard and community gardens
Illicit discharge and inspection activities
DPW street sweeping routes
DDOT BMP installations on roadway projects
WASA catch basin maintenance work

* Conducted by EA Engineering, Science, and Technology Inc. under contract to WASA

DDOE has established an MOU with the District's Office of the Chief Technology Officer to provide onsite staff support for GIS. OCTO-GIS personnel are assisting DDOE in obtaining and consolidating District GIS data, and using it to develop analyses and GIS products.

FY 2008 Goals: To compile additional GIS data from other District agencies.

III.D.10 TMDL Modeling

The TMDLs for District waters have been developed using well known water quality modeling tools such as Hydrological Simulation Program - FORTRAN, Water Quality Analysis Simulation Program, and Environmental Fluid Dynamics Computer Code. These models were used to estimate loads from point and nonpoint sources, simulate fate and transport of contaminants, and develop allocations. The models and various technical approaches used are described in the relevant TMDL documents (available at DDOE website at: http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,495456.asp).

III.E Monitoring Program

Information regarding the District's outfall and instream monitoring efforts will be included in the 2008 Discharge Monitoring Report. Per DDOE's notification to EPA of July 3, 2008, this report will be delivered at a later date in summer 2009.

III.F Management Programs

The District continues to monitor existing structural BMP and LID projects as well as implement new projects in the MS4 area.

III.F.1 Commercial, Residential, and Government Areas

Part III.B.1 of the Permit requires the District to implement the October 19, 2002 SWM Plan and to reduce the discharge of pollutants into the District MS4 from residential, commercial, Federal and District-owned areas. The District has developed and continues to implement a program to control stormwater discharges from federal and District government areas. The District does not have jurisdiction over federal lands to require the installation of structural retrofits to control stormwater pollutants from federal lands. Some federal properties have their own NPDES permits such as Bolling Air Force Base. District regulations require federal agencies to comply with the District's erosion and sediment control regulations with respect to new construction and re-construction on federal properties in the District. In addition, DDOE signed agreements with DDOT and the General Services Administration (GSA), which require federal contractors working on buildings or highway improvements to comply with the District's erosion and sediment control regulations. DDOE also reviews construction plans submitted by DPW, DDOT and WASA with respect to these erosion and sediment control requirements.

The management plan for stormwater pollution control on commercial, residential and federal and District government areas entails a mixture of programs emphasizing structural and non-structural BMPs and educational programs:

- District regulatory requirements, such as the *District of Columbia Standards and Specifications for Soil Erosion and Sediment* and the *Storm Water Management Guidebook, 2003*.
- Functional landscaping programs, such as the use of structural BMPs and riparian buffer zones on new roadway construction.
- LID practices.

- Catch basin cleaning, maintenance of the MS4, street sweeping, and leaf collection.
- Rain leader disconnection.
- Education programs on pet wastes, fertilizers, and landscaping.
- Methods of measuring the performance of activities.
- Strengthening erosion control for new construction.
- Continuing to work with federal and District facilities in order to implement and maintain stormwater pollution controls on new and retrofit construction.

The following sections detail progress for each activity in FY 2007.

DC Stormwater Manual

Performance Standard: The District requires engineering standards and specification to be followed by all District builders.

The *District of Columbia Soil Erosion and Sediment Control Standards and Specifications* (2003) and the District's *Stormwater Management Guidebook* are followed by all District builders, whether private, commercial, federal or District, for all new and rebuild construction sites. These manuals, which are available to the public at the DDOE offices, encourage builders to use stormwater BMPs for new and rebuild construction through the plan review process.

FY 2007 Activities: In FY 2007, DDOE contracted with the Center for Watershed Protection to update the *Storm Water Management Guidebook, 2003* based on pending regulatory updates and revisions.

- During FY 2007, 1,540 customers were provided technical assistance on issues related to stormwater management and erosion and sediment control.

- During FY 2007, 24 copies of the *Storm Water Management Guidebook* were distributed to the public.

FY 2008 Goals: The District will continue promotion of stormwater BMP and LID practices in construction plans including education on District standards and specifications for erosion and sediment control, stormwater management plans and the DC building permit process.

Functional Landscaping

Performance Standard: The District encourages developers through training sessions to incorporate functional landscaping techniques in their site development plans.

FY 2007 Activities: During FY 2007, DDOE continued to encourage developers to incorporate functional landscaping techniques in their site development plans through pre-design meetings held for all pre-development or development projects. Developers are encouraged to incorporate functional landscaping techniques into their development on a continual basis during pre-development meetings with DDOE plan review engineers.

- In FY 2007, DDOT completed its efforts to develop functional landscape tree planting specifications sensitive to stormwater as well as compatible and consistent with roadway and bridge design and construction. The tree selection and planting specifications are now part of the Anacostia Waterfront Transportation Architecture Design Standards.

- DDOT's Urban Forestry Administration overhauled its planting program to increase survivability through better species selection, better oversight, and better tracking. UFA activities are now tracked through a GIS-based work order management system.

- DDOT continued development of the Anacostia Waterfront Initiative Transportation Architecture Design Standards. Forty-seven of 130 elements offer LID opportunities of which 18 are actual LIDs. The elements in the manual will be tested and assessed prior to standardization for citywide implementation. DDOT expects finalization and implementation of the standards in FY 2008, pending the necessary review and approval.

FY 2008 Goals: The District will continue to provide training, guidance, and recommendations to developers, professional engineers, architects, homeowners, and government officials regarding functional landscaping techniques.

Low Impact Development Practices

Performance Standard: The District promotes the use of LID techniques throughout the District through plan review and educational activities.

FY 2007 Activities: The District continued to promote, encourage, and review the use of LID techniques throughout the District through plan review and educational activities

that focus on LID practices. The District continued to review and approve SWM plans encouraging the use of LID techniques in stormwater projects. Appendix D includes a figure that displays the trend in LID projects approved for construction.

The District's LID review and inspection activities in FY 2007 included the following:

- 59 out of the 154 SWM facilities approved for construction were LID projects. More details are provided in Appendix D.
- Ten federal projects reviewed involve LIDs.
- MS4 Task Force representatives traveled to Portland, Oregon on an official trip to learn first hand about new and progressive stormwater management techniques implemented by the Portland Bureau of Environmental Services.
- The District provided technical assistance to 1,540 customers on issues related to stormwater management and erosion and sediment control.

During FY 2007, DDOE continued to track green roof projects in the District from the plan review database. The plan review database contains projects that are regulated through the submission of plans because they are over 5,000 sq. ft. in area. GIS was used to determine those located within the MS4 or CSO drainage areas. Six green roof projects for a square footage of 29,727 were approved in FY 2007. Each of these projects is in the CSO portion of the city. They will bring the total square footage of green roof area in the District to 331,478 square feet. The projects approved in FY 2007 are listed in Table 8 and are summarized in more detail in Appendix D. The geographic location of the green roof projects can be accessed at the DC Atlas website: http://dcgis.dc.gov/dcgis/cwp/view,A,1192,Q,487938,dcgisNav,%7C30634%7C.asp.

The District has also developed a Master LID Implementation Plan. This provides an overview of the feasibility and status of LID projects that are planned or currently undergoing implementation. The Master LID Implementation Plan is included as Appendix B in this document. Note that this list is preliminary and has not been cleared for utility conflicts. If utility conflicts occur during construction, nearby or similar locations will be selected for LID installations.

Table 8. Green Roof Projects Approved for Construction

Location	Treatment Area (sq. ft.)
801 17th Street NW	11,249
111 K Street NE	2,639
4100 George Avenue NW	4,440
900 Massachusetts Avenue NW	11,399
1200 19th Street NW	Not Provided
1990 K Street NW	Not Provided
Total Drainage Area	**29,727**

District LID work focused on specific regions and watersheds of the District and included the continuation of design and planning for several projects. In FY 2007:

- Watts Branch Watershed: Plans for the bioretention retrofits designed under a subgrant received by the non-profit group Washington Parks and People have been completed. The retrofits will be integrated into park redesign by the Anacostia Waterfront Corporation. The retrofits will treat approximately one-half acre of impervious surface when constructed.

- Fort Dupont Watershed: A DDOE-issued grant to the non-profit group Sustainable Community Initiative has provided funds for the construction of LID retrofits in Fort Dupont. During FY 2007, five bioretention cells were constructed to treat the runoff from two large parking lots. Designs for an additional five bioretention cells have been completed, which will treat the runoff from approximately 400 yards of roadway in the upper watershed. As these bioretention cells are in the DDOT right-of-way, DDOE is awaiting approval from DDOT before beginning construction. Once complete, the total number of installed bioretention cells will result in the treatment of approximately 3.95 acres of impervious surface.

- Pope Branch Watershed: Construction on retrofits at two sites in the Pope Branch watershed began in FY 2007. When completed these retrofits will treat approximately one acre of impervious surface. The grant for this project was awarded to DC Greenworks, which is working in partnership with Ecosite.

- DDOE continued work on two LID demonstration projects:

- Rain garden/bioretention cells at District Department of Parks and Recreation facilities. A project had been planned to install such a demonstration at the Friends of Takoma Recreation Center; however, this has been put on hold by DPR. An MOU remains in place between DDOE and DPR for the installation of LID demonstration sites. DDOE is continuing to coordinate with DPR to identify candidates for such projects.

- The LaSalle Elementary School for construction of a 6,235-square foot green roof on the school. This project was awarded in FY 2006, but has since been delayed by the District's ongoing efforts to overhaul the Public Schools system. All DDOE efforts with public schools are currently being vetted by the District's Office of Public Education Facilities Modernization. An MOU covering the LaSalle Elementary green roof is currently awaiting signature by OPEFM. Pending completion of the MOU, installation of the green roof could begin in FY 2009.

- DDOE is working with the USDA Natural Resources Conservation Service (NRCS) through the LID Grant and Construction Program to provide $769,000 in direct services for the design and construction of LID stormwater control BMPs to be in the District. During FY 2007, it was discovered that USDA's authority was limited to providing funding directly to States. As the District is not a State, this presented a significant administrative hurdle to be overcome A tentative solution was reached in FY 2007 and is currently awaiting approval by the Federal Office of Management and Budget. In the meantime, a DDOE/NRCS review committee has screened candidate projects and ranked the top ten proposals. Funding for these projects will be awarded as it becomes available; initial estimates are that the grant will provide for the top four proposals to be implemented once approval from OMB is granted.

- Because the SNOUT™ water seal device interfered with WASA catch basin cleaning operations, Water Seal devices are used in catch basins within the CSO to trap gas from the combined sewers. Monitoring of the performance of the catch basins is continuing as part of a pilot test project to determine maintenance requirements and the efficiency of the structures in reducing pollution from stormwater runoff. When the pilot project is completed (expected by the end of FY 2008) and data collection concerning the catch basin performance is complete, selected catch basin structures will be made part of DDOT Design and Construction Standards for implementation in all DDOT's projects.

- During FY 2007, DDOT continued the construction and installation of six bioretention cells and approximately 900 feet of bioswales for the Anacostia Riverwalk Trail project.

This project is scheduled for construction in April of 2008.

- DDOT continued to expand its bicycle and pedestrian transportation programs with major trails: the Metropolitan Branch Trail and the Anacostia Riverwalk Trail. As part of the trails program, DDOT continues to install bicycle-friendly sewer grates and to conduct bicycle safety education and enforcement activities.

- DDOT also initiated construction on the Watts Branch Bicycle Trail in April 2007. A portion of this project will remove paved surfaces and install BMPs and LID stormwater controls.

- During FY 2007, DDOT completed the design and installation of a vegetated swale in the median of I-295, adjacent to the Malcolm X Avenue overpass.

In FY 2005, DDOE awarded a grant to LID Center, a local non-profit organization, to produce an educational brochure. The brochure was finalized in FY 2007 and was distributed in coordination with DDOE's community outreach and education efforts. The brochure will also be used as part of the planned update to the *Storm Water Management Guidebook*.

FY 2008 Goals: The District will work with non-profit organizations to implement LID projects throughout the city. The District will continue to refine and implement the Master LID Implementation List. The District will continue to send technical staff to conferences and workshops.

Catch Basin Cleaning and Street Sweeping Activities

Performance Standard: The District conducts routine catch basin cleaning and street sweeping activities.

FY 2007 Activities: During FY 2007, the District continued catch basin cleaning activities (clean each catch basin once every six months to a year). The District continued street sweeping activities (sweep each of the District's streets as often as once every week to no less than once each month). DPW will identify improvements in sweeping frequency/techniques to reduce pollutant loading in the MS4 by evaluating street sweeping practices and schedules.

DPW is responsible for street sweeping activities in the District, while WASA conducts catch basin cleaning as part of its maintenance of the MS4 conveyance infrastructure, and

DDOT's Street and Bridge Maintenance Group cleans and maintains green space in the federal roadways DPW continues to provide street sweeping services for the remaining streets and roads in the District. DPW's evening street cleaning and other night operations are managed through a single facility at New Jersey Avenue and "K" Streets, SE. Three basic methods are used to clean and sweep streets: mechanical street sweeping, truck crews, and litter vacuum personnel.

In FY 2007, DPW and WASA continued to implement street sweeping and catch basin activities, respectively. A total of 57,772 miles of streets, freeways, and highways were cleaned mechanically, and 10,417 miles of streets and roadways were cleaned manually during FY 2007. DPW collected 1,659 tons of debris from alley sweeping activities and 6,388 tons from litter receptacles. Also in FY 2007, DPW added six high-efficiency road sweepers.

Street Sweeping Activities

Table 9 illustrates the six-year trend of street sweeping activities. The number of alley and street miles doubled in 2002 with the purchase of new equipment, including litter vacuum carts for the manual collection of litter. Street miles increased through FY 2004. The tonnages collected are influenced by the number of warm days permitting outside activities and the response of the public to both anti-littering in the streets and alleys and the continued use of trash cans.

Table 9. Seven-Year Trend Results of Street Sweeping Activities.

Fiscal Year	Street Miles	Alley Miles	Litter Receptacles	
			Number	Tonnage
2001	34,000	8,751	4,000	3,400
2002	74,490	16,400	4,000	8,920
2003	102,181	41,238	4,050	9,516
2004	103,163	13,354	4,050	9,346
2005	91,649	20,897	4,500	7,755
2006	72,468	N/A	4,200	6,632
2007	68,189	N/A	4,324	6,388

N/A = Not available

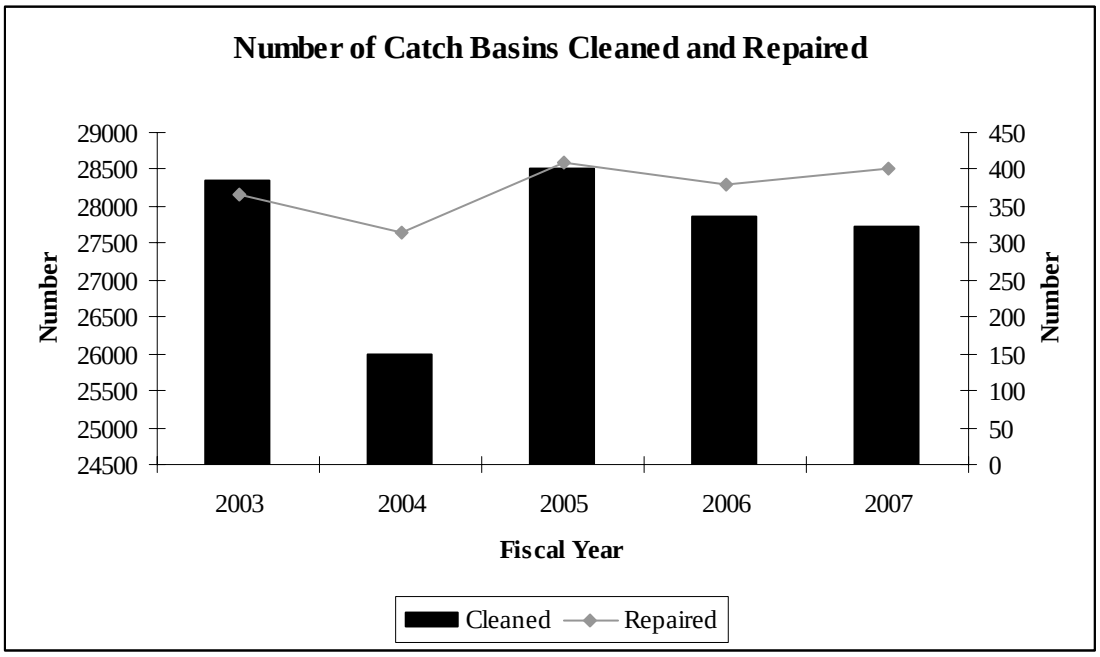
Catch Basin Cleaning Activities

WASA currently conducts the operation and maintenance of pipes and conduits carrying stormwater flow. There are approximately 25,000 catch basins located within the public right-of-way in the District. Approximately two-thirds of these catch basins are in the MS4 area, with the remainder in the CSO area. WASA's cleaning program does not differentiate between the two systems and works to keep all catch basins clean.

Crews operate on a predetermined schedule, cleaning catch basins by ward. During each work day, six two-man crews clean approximately 19 catch basins each. In FY 2007, WASA crews cleaned 27,716 basins for an average cleaning frequency of once every 12 months. Based on the OCTO GIS database, approximately 12,130 catch basins are located in the MS4. WASA crews repaired 401 basins as part of the basin repair program during FY 2007. Repair tasks vary from resetting the tops of the catch basins to redesigning the catch basin to avoid damage, to rebuilding the entire structure.

Figure 1 shows the five-year trend for the cleaning and repair of the District catch basins. The number of catch basins cleaned and repaired has remained relatively constant since FY 2003.

Figure 1. Five-Year Trend of Catch Basins Cleaned and Repaired.



FY 2008 Goals: A comprehensive street sweeping study will be completed. Catch basin cleaning activities will continue at current levels.

Coordination of Leaf Collection

Performance Standard: The District conducts curbside collection of leaves from District residences.

FY 2007 Activities: DPW activities were conducted through their Leaf and Holiday Tree Program, including the seasonal curbside vacuum collection of leaves from residences in the District. Residents rake leaves into piles, place leaves into a tree box space in the front of their property, or bag leaves and place them in the tree box. Leaves are then vacuumed by one of the District's leaf vacuum trucks. DPW coordinates the leaf and holiday tree collections through the following activities:

- Prior to leaf collections district residents are mailed a flyer, which can be found on the web at http://www.dpw.dc.gov/dpw/cwp/.
- The districts within the eight wards comprising the District have leaves collected twice during the collection season on specified days from each ward-district.

- Leaf collection activities for FY 2007 were conducted from November 2006 through January 2007.

As a result of the Leaf and Holiday Tree Program, 7,834 tons of leaves and holiday trees were collected during the collection season. These tonnages represent leaves primarily collected by the vacuum trucks. The resulting tonnage from two bagged leaves "blitz" weekends conducted during the leaf collection season are also included in the total tonnage of leaves collected for FY 2007.

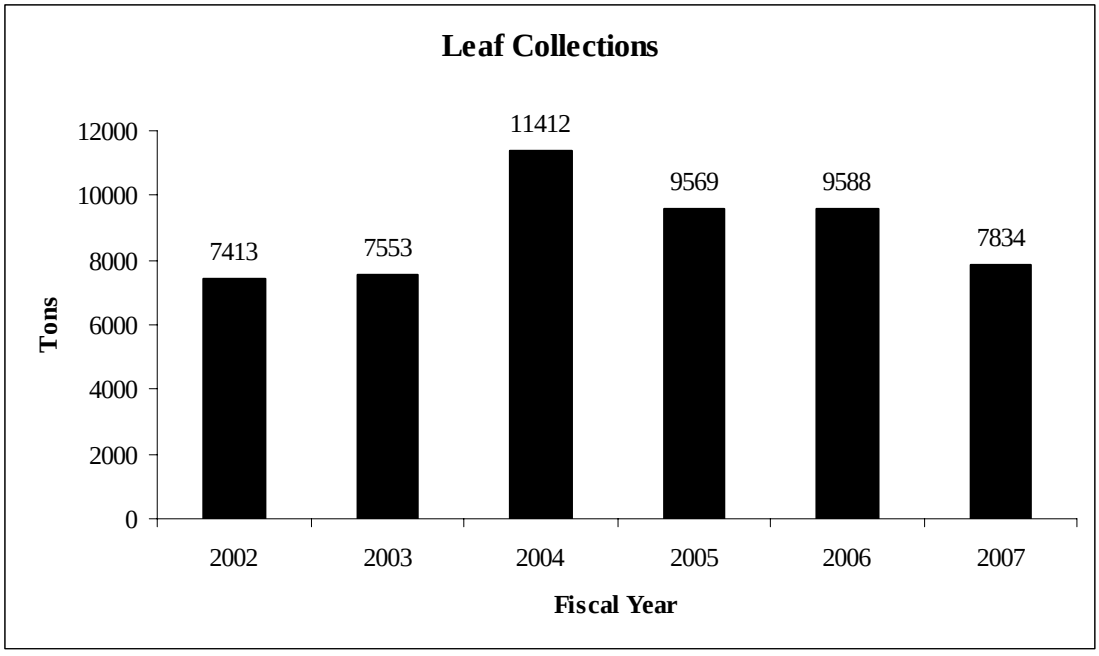
Figure 2 shows the six-year trend of leaf collection activities in the District.

FY 2008 Goals: The District will continue to collect leaves and holiday trees.

Rain Leader Disconnect Program

Performance Standard: The District will allow disconnection of rain leaders in new construction and existing buildings so that runoff can be channeled to localized infiltration areas. The Rain Leader Disconnect Program was developed to reduce stormwater runoff from government, commercial, and residential activities.

Figure 2. Six-Year Trends for the Leaf and Holiday Tree Collection Program.



FY 2007 Activities:

During FY 2007, DDOE conducted a follow-up survey with the 104 people who had previously received rain barrels from DDOE. 34 individuals responded to this survey for a response rate of 32.7%. The number of barrels accounted for by the survey was 39, as 4 of the respondents had multiple rain barrels. Selected survey results include:

- Two of the respondents had not installed their barrels. Those two barrels have been reclaimed by DDOE and delivered to other interested households in the District.

- Of the respondents that had installed their barrels, all but one continue to use them and all but one would recommend a rain barrel to someone else.

- Fifty-two percent of those who installed their barrels never empty them before rain events, and 26% empty their barrels most of the time. Only 8.5% emptied their rain barrel all the time before storms.

- Thirty five percent of those who installed their barrels said their barrel averaged one-quarter full, and 35% said their barrel was one-half full on average.

- Most respondents reported difficulty with leaks from the hose connections on the rain barrels distributed by DDOE.

Upon completion of this survey, DDOE began to consider creating a homeowner outreach/incentive program called "RiverSmart Homes." This program will encourage property owners to adopt stormwater reduction practices, including downspout disconnection, rain barrel installation, rain garden installation, "Bayscaping" landscaping with native plants, planting shade trees, and removing impervious surfaces to replace them with pervious ones.

Preliminary consultation with the District's Department of Consumer and Regulatory Affairs identified one policy obstacle for this program. Specifically, prior to disconnecting their downspouts, homeowners with downspouts connected to the city sewer are required to 1) obtain a permit, 2) obtain a property plat, 3) have the disconnection done by a professional plumber, and 3) have the work inspected by DCRA. This policy clearly poses an impediment to DDOE's efforts to promote downspout disconnection in all parts of the city. DDOE submitted suggested changes to the DCRA building code to overcome this impediment. These suggested changes were still under review at the end of FY 2007.

DDOE began to implement the first phase of the RiverSmart Homes program in FY 2007. Eight demonstration sites throughout the city were selected for installation of stormwater reduction practices. The first three sites were successfully installed by the end of the fiscal year.

FY 2008 Goals: Installation of the remaining five RiverSmart Homes demonstration sites will be completed. DDOE also plans to conduct a social marketing campaign to assist in developing outreach materials and advertising the program. Press events and tours of demonstration sites will also be held. As the RiverSmart Homes program is expanded city-wide, the next phase will be to offer incentives in Pope Branch, a targeted subwatershed of the Anacostia River. Finally, DDOE will also continue to work with DCRA to overcome policy impediments to widespread adoption of downspout disconnection.

Education of Public on Pet Wastes, Fertilizing, and Landscaping

Performance Standard: The District maintains a program to develop and distribute public education materials regarding the control of pet wastes, the use of fertilizers, and the promotion of landscaping practices.

These programs are discussed under Section III.F.12

Methods of Measuring the Performance of Activities

Performance Standard: The District has taken steps to develop a formalized system to measure the performance of stormwater management activities to reduce pollution loading to receiving waters. The demonstration of water quality improvements requires a thorough understanding of the existing water quality throughout the MS4.

FY 2007 Activities: The District continued monitoring the performance of stormwater management activities to reduce pollution loading to the Anacostia and Potomac River watersheds. Significant progress has been made in this area including:

- Use of the Master Address Repository (MAR) geocoder to determine if a project is located within the MS4 or CSO areas of the District,
- Verification of the MS4 database system,
- Estimating pollutant loading using the Simple Method equation for constituent seasonal and annual loads,
- Enhancing regulatory and promotional programs with respect to the use of BMPs, and

- Developing a financial tracking system to better define stormwater related expenses.

FY 2008 Goals: The District will continue to refine measurement tools to provide the necessary performance metrics for establishing a method to measure performance of MS4 activities. The District will continue to develop the Stormwater Pollution Tracking Database that will contain all existing and potential new databases pertaining to District agencies' activities that will ultimately reduce storm water pollution.

Strengthening Erosion Control Programs for New Construction

Performance Standard: The District maintains a plan review erosion control program for new construction coupled with a field inspection program to ensure compliance with the District erosion control regulations.

FY 2007 Activities: During FY 2007, DDOE continued to review plans, inspect construction sites, and implement the inspection and enforcement program as part of the sediment and erosion control program for compliance with erosion and sediment control and SWM regulations. DDOE WPD promoted its *District of Columbia Standards and Specifications for Soil Erosion and Sediment Control* and *Storm Water Management Guidebook, 2003*. DDOE also contracted with the Center for Watershed Protection to update and revise the *Storm Water Management Guidebook.*

This program is discussed under Section III.F.3 Management Plan for Construction Sites.

FY 2008 Goals: DDOE will hire two full-time inspectors to increase new construction review and field inspection to ensure compliance with the District's erosion control regulations. DDOE will also complete a revision to the *Storm Water Management Guidebook*, which will be updated to reflect a pending revision of the District's stormwater management regulations. The revised SWM regulations will require construction site managers to have erosion control training.

Federal Facilities Program

Performance Standard: The District maintains consent agreements between District and federal agencies to comply with the District sediment and erosion control requirements.

DC laws specify that all builders, including federal contactors, must follow the sediment and erosion controls, including sediment and erosion controls on new and re-build construction sites. The Water Pollution Control Act of 1984, as amended, D.C. official

Code § 8-103.01 *et.seq*., and the Soil Erosion and Sedimentation Control Act of 1977, as amended, codified in 21 DCMR §§ 500-507 provide the legal authority to enforce the erosion and sediment control provisions of the SWM program.

FY 2007 Activities: GSA and DDOE signed a consent agreement in FY 2000 that requires work under contracts through GSA to comply with the same sediment and erosion control requirements as commercial, residential, and industrial operations in the District. This consent agreement assists the District in ensuring that federal facilities comply with the Soil Erosion and Sediment Control Act. DDOE and GSA continue to work under this agreement.

The District continued to implement existing agreements with District and federal agencies. In FY 2007, DDOE reviewed 10 stormwater BMP plans for proposed projects on federal facilities. These projects included a variety of BMP types. These proposed projects are located in all District quadrants (NE, NW, SE, and SW); however, eight of the projects were located specifically in the MS4 area. Table 10 presents the types of BMPs proposed for federal properties and the District quadrant they are located in.

FY 2008 Goals: The District will maintain consent agreements with federal agencies for compliance with erosion control regulations including the review of stormwater BMP plans.

Table. 10 BMP Types on Federal Properties, FY 2007

BMP Type	Federal Agency	D.C. Quadrant Location
Baysaver	National Zoo	NW
Baysaver	Walter Reed Army Medical Center	NW
Bioretention	Old Soldiers' Home	NW
Catch Basin	Architect of the Capitol	SE
Baysaver	Ft. McNair	SW
Bioretention	USDA	NE
Triple Water Quality Inlet	Bolling Air Force Base	SE
Underground Sand Filter	Bolling Air Force Base	SW
Bioretention	National Park Service	SE
Bioretention	National Park Service	SE

District Facilities Program

Information specific to DDOT is provided in Section III.F.3.

Continuance of Current Programs

Information about agency-specific cooperative programs is provided in Section III.F.12.

III.F.2 Industrial Facilities

Part III.B.2 of the Permit requires the District to implement a program to monitor and control pollutants in stormwater discharged to the District's MS4 from industrial facilities, and to continue to maintain and update the industrial facilities database.

The management plan of stormwater pollution control from industrial facilities emphasizes the tracking of facilities through a database system, the monitoring and inspection of industrial facilities, and the District's spill prevention and response program. Compliance activities are provided in the following six areas:

- Industrial facilities database,
- Solid waste transfer stations,

- Hazardous waste treatment, disposal and/or recovery plants,
- Industrial facilities subject to Superfund Amendments and Reauthorization Act (SARA) Title III or the Emergency Planning and Community Right-to-Know Act (EPCRA),
- Industrial facilities with a discharge to the MS4,
- Wet-weather screening program,
- Spill prevention, containment and response program, and
- Review and approval process.

Industrial Facilities Database

Performance Standard: The District maintains a database of industrial facilities with standard discharge and stormwater NPDES permits for the purpose of establishing baseline facility information and supporting MS4 related monitoring efforts. The database includes a listing of facilities in the District (whether on private, federal or District properties) that are registered with federal and state regulators and generate, store, or have released hazardous materials. Information for this database is collected from site verification and GIS analysis. Site verification is conducted periodically by DDOE WQD staff by updating basic information such as location, facility name, description of services, contact person and phone numbers, etc. Field verified information undergoes further GIS analysis to determine the sewersheds and particular outfalls related to facilities comprising the database. The database framework also allows for relating compliance inspection information for each facility. Currently there are over 500 individual facilities in the database. These facilities provide different services such as automotive repair, car/truck rentals, dry cleaners, building supplies, laboratory and health care, restaurants, gas/oil stations, collection and transfer stations, etc. The database can be searched based on services, possible potential pollutants, outfalls, sub-watersheds, wards, and zip codes.

FY 2007 Activities: In FY 2007, DDOE maintained its database of over 500 facilities in the District, 16 of which have individual or site-specific stormwater federal NPDES permits. One additional permitted facility is located in Virginia but is included in the District's permit universe because pipes from the facility extend into the District's tidal zone. Six of the permitted sites are located in the MS4 service area (not counting the District permit for the MS4 itself). The list of facilities is provided in Appendix E.

DDOE also targeted automotive and laundry facilities for facility inspections in FY 2007. More detail on these targeted facility inspections can be found in Section III.F.10.

FY 2008 Goals: To continue tracking facilities and expanding the industrial facilities database.

Solid Waste Transfer Stations

The District's government does not operate any solid waste disposal sites within the District. Instead, municipal solid waste collected by DPW is deposited at two municipal waste transfer stations and then transferred out of the District for disposal at licensed facilities. Private companies also operate two transfer stations in the District. These four facilities are located in the MS4 area. The locations of these facilities are provided in Table 11.

Pollution from stormwater runoff at the municipal transfer facilities is being managed under the Solid Waste Facility Permit Act. DCRA, DDOE, and DPW enforce these regulations as part of their responsibility to manage pollution from stormwater runoff at municipal waste facilities within the District.

Table 11. Locations of Municipal and Private Solid Waste Transfer Stations within the MS4.

Municipal Solid Waste Transfer Facilities		
4900 Bates Road, NE.		
3200 Benning Road, NE		
Private Solid Waste Transfer Facilities		
Name	**Operator**	**Location**
Brentwood	Consolidated Waste Industries, Inc.	1220 W Street, NE
Queens Chapel	Waste Management	2160 Queens Chapel Road, NE

Hazardous Waste Treatment, Disposal, and/or Recovery Plants

Performance Standard: The industrial facilities database includes a listing of facilities in the District that generate, store, or have released hazardous materials. Information for this database is collected from site verification and GIS analysis.

FY 2007 Activities: Presently, the U.S. Navy's Naval Research Laboratory in Southwest DC is the District's only active regulated RCRA Treatment Storage and Disposal Facility. There are 27 RCRA LQGs and 66 RCRA SQGs within D.C. RCRA regulations outline handling, storage, and spill control requirements at those facilities.

Facility addresses were used to determine whether the facilities are part of the MS4 area.

- The one Treatment Storage and Disposal Facility in the District that appeared in EPA's RCRA Info database is not located in the MS4 service area.
- There were 66 SQGs in the RCRA Info database. Based on facility addresses provided, approximately 40% of the facilities are in the MS4 service area.
- In FY 2007, no spills were reported to DDOE from these sites.

Inspection and monitoring of hazardous waste facilities is the responsibility of DDOE's Hazardous Waste Division (HWD), which has procedures in place to investigate sites and spills. These procedures include notification and coordination with DDOE of any incidents that impact the city's water resources. According to recent data from EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), there are 30 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) facilities in the District (Appendix E).

Based on facility addresses, there are 12 facilities or more within the MS4 area. Due to the transient nature of some CERCLA facilities, they cannot be mapped or field verified. Several CERCLA facilities that could not be mapped for inclusion in the facility database were determined to have been of a transient nature.

FY 2008 Goals: The District will continue tracking and verifying database information on RCRA sites within the District.

Industrial Facilities Subject to Superfund Amendments and Reauthorization Act Title III or the Emergency Planning and Community Right-to-Know Act

In accordance with the Permit, the District tracks industrial facilities within the District that are subject to regulation under CERCLA. Six years after CERCLA was enacted, SARA amended it. SARA Title III, also known as EPCRA, requires facilities to report on the storage, use or release of certain chemicals and provides for information about potentially

dangerous chemicals being made available to the public. One of the means EPA uses to make information available is through the CERCLIS database.

- There are currently 30 CERCLA sites registered with federal and state regulators within the District. The list includes private and federally owned sites. The list of sites is given in Appendix E.

- Of the 30 sites, only the Washington Navy Yard is on the final National Priorities List.

Industrial Facilities with a Discharge to the MS4

DDOE staff maintained a list of industrial facilities in the District and verified NPDES permit holders.

- Six out of the 16 industrial facilities with individual or site-specific NPDES permits are located in the MS4 service area.

- Nine facilities are in the CSO area.

- Of the remaining two permitted facilities, one is in Virginia and the other is the District's MS4 system.

Wet Weather Screening Program

The Wet Weather Screening Program as defined in Section IV.C of the Permit is being implemented as part of the Wet Weather Outfall Monitoring Program and in conjunction with the illicit discharge detection program.

Performance Standard: This program is required to determine the source(s) of pollutants that contaminate stormwater runoff.

FY 2007 Activities: The District continued to evaluate, upgrade, and implement the wet weather screening program. Screening procedures were developed and included in the Quality Assurance Project Plan (QAPP) which is presented in detail in the 2007 Discharge Monitoring Report.

FY 2008 Goals: The District will continue the wet weather screening program including the QAPP and present detailed results in future Discharge Monitoring Reports.

Spill Prevention, Containment and Response Program

FY 2007 Activities: The District continues to implement the *Water Pollution Control Contingency Plan* (WPCCP), which outlines procedures for notifying the incident commander and the trustees of the natural resources in the event of a spill and procedures for oil and hazardous substances emergency response. DDOE continues to perform compliance and enforcement activities in accordance with EPA regulations under the CWA and District regulations under the District of Columbia Water Pollution Control Act that address illegal discharge of potentially hazardous materials. Because of funding constraints, during FY 2007, the District continued to operate under the WPCCP established in 1999. DPW, DDOT and WASA have existing in-house spill response training for their employees. DPW and DDOT coordinate spill prevention, containment, and response activities with DDOE.

FY 2008 Goals: The District will continue to perform compliance and enforcement activities in accordance with EPA regulations.

III.F.3 Construction Site Activities

Part III.B.3 of the Permit is titled "Management Plan for Construction Sites" and details the permit requirements for control of stormwater pollutants from construction sites in the District.

The management plan for stormwater pollution control on construction sites emphasizes the review and approval process, and the inspection and enforcement procedures of the construction permitting program, as well as construction site and plan educational programs, traffic pollution control strategies, and air pollution compliance activities. A summary of these compliance activities includes:

- The review and approval process
- Inspection and enforcement procedures
- Site inspections and loading estimates
- Educational measures

Review and Approval Process

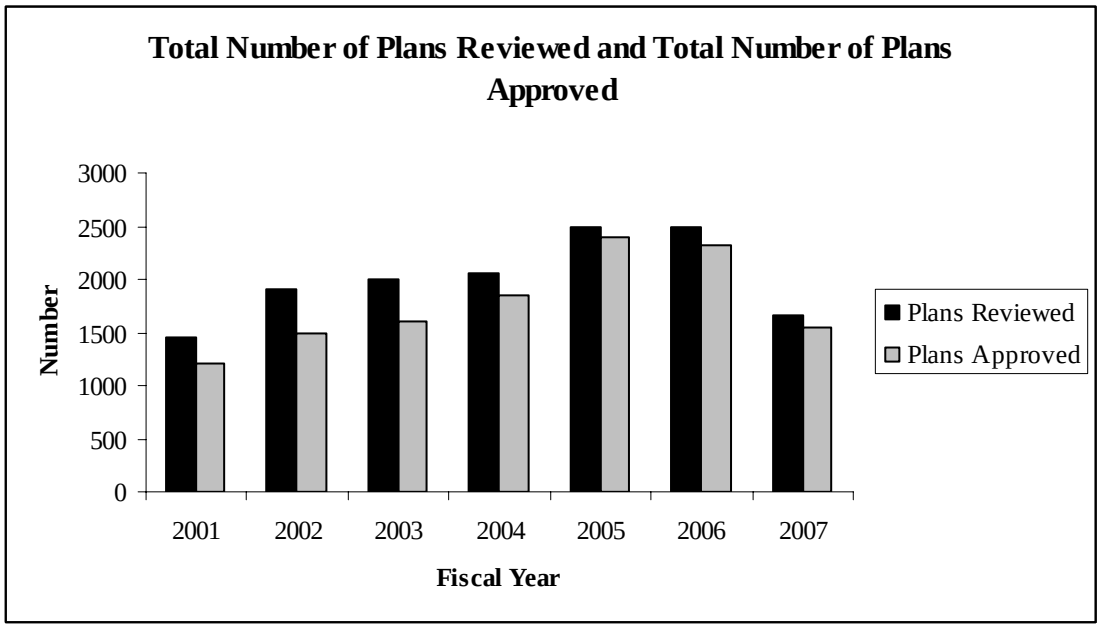
Performance Standard: The District reviews and approves construction plans through its "One-Stop Permitting Center". Plan review and site inspections are coordinated with DDOE enforcement staff and DCRA to ensure that deficiencies in the permit process are corrected when they are encountered. DDOE Technical Services Branch has staff stationed at the "One-Stop Permit Center" at DCRA to provide assistance to customers

and to ensure that permit applications, construction plans, and environmental forms and documents meet regulatory requirements. Each year DDOE staff are given refresher training to improve efficiency and effectiveness in plan review.

FY 2007 Activities: District agencies continue to provide a "One-Stop Permitting and Business Center" for the approval of plans and to provide quality control of reviewed plans. Minor projects are reviewed at the permit center and are either approved or rejected. Plans for major or more complex projects are reviewed and approved at the DDOE main office. During 2007, DDOE reviewed approximately 1,658 construction plans for compliance with sediment and stormwater pollution control. This review process led to the approval of 1,551 of these plans. DDOE processed 71 requests for information on soil characteristics and reviewed approximately 83 geotechnical reports to assess soil suitability for various construction projects.

Figure 3 shows the seven-year trend of projects reviewed and approved through the "One Stop Permitting and Business Center". The approved projects indicate the number of projects that have been reviewed under the most recent stormwater regulations, which require both stormwater volume and water quality control. The number of plans reviewed and approved is dependent on development and re-development trends in the District.

Figure 3. Seven-Year Trend in Projects Reviewed and Approved.



FY 2008 Goals: The District will continue to review and approve SWM plans and to

provide staff refresher training to continually improve efficiency for review and provision of technical assistance.

Inspection and enforcement procedures

This program is discussed under Section III.F.11 Enforcement Plan.

Site inspections and loading estimates

This program is discussed under Section III.F.11 Enforcement Plan.

Educational measures

This program is discussed under Section III.F.12 Public Education.

Roadways

Performance Standard: The District operates and maintains the local roadways to reduce the discharge pollutants resulting from vehicular traffic from its SWM systems.

Other activities conducted by MS4 Task Force agencies included actions to reduce the amount of pollutants resulting from traffic on public roads that enter SWM systems throughout the District.

FY 2007 Activities: DDOT assigned a staff of four engineers to focus on stormwater issues including water quality. These engineers reviewed drawings to identify drainage issues and opportunities for installing BMPs. Additionally, during FY 2007 the DDOT Stormwater Management Team continued work on the design features for BMPs for a Truck Wash facility in Ward 5, continued to work on the Anacostia Waterfront Transportation Architectural Design Guidelines which contain guidance on implementing LID into right-of-way projects, and continued to monitor the effectiveness of several different water quality catch basin designs.

DPW has elected to purchase alternative fuel vehicles (AFVs) to reduce particulate vehicle emissions that contribute to stormwater runoff. In FY 2007, DPW purchased 87 AFVs that are powered by natural gas or E-85 (85 percent ethanol, 15 percent gasoline). This brings the total number of AFV's in DPW's fleet to 630.

III.F.4 Flood Control Projects

The District Floodplain Management Program of the DDOE Watershed Protection Division reviews plans for development projects located in District floodplains. Evaluations are made on quantity control and potential water quality impacts for proposed flood management projects according to the laws and regulations that govern the District Floodplain Management Program:

1. D.C. Law No. 2-23 (The District of Columbia Soil Erosion and Sedimentation Control Act of 1977)

2. D.C. Law No. 1-64 (The District of Columbia Applications Insurance Implementation Act of 1976); D.C. Code 5-301; Mayor's Order 84-193, dated November 2, 1984

3. D.C. Law No. 8-36 (The District of Columbia Environmental Policy Act of 1989)

4. D.C. Law No. 6-216 (Construction Codes Approval and Amendments Act of 1986)

5. Clean Water Act, 33 U.S.C. 1251 *et. seq*.

6. The District of Columbia Water Pollution Control Act of 1984, D.C. Official Code § 8-103.01 *et. seq*.

7. 21 DCMR § 5 (D.C. Soil Erosion and Sediment Control Stormwater Management Regulations)

Part III.B.4 of the Permit details the permit requirements for documenting and evaluating flood control projects in the District.

The management plan for stormwater pollution control through flood control management emphasizes the following:

- Water quality impact and beneficial use assessment.
- Existing flood control devices retrofit assessment.
- Floodplain mapping.
- Floodplain development procedures and reviews.
- Impervious surfaces evaluation.

DDOE processed approximately 348 requests for flood zone determinations at various properties in the city. Flood zone information is critical in determining the availability of flood insurance and eligibility for federal assistance in the event of natural disasters caused by floods.

Existing Flood Control Devices Retrofit Assessment

The District of Columbia operates and maintains flood control devices including BMPs, pump stations, flood and tide gates, weirs, canals, and stormwater collection and conveyance systems. The District has levees located at Potomac Park, Lincoln Memorial, Constitution Avenue, Fort McNair, and along Anacostia Park. The levees are inspected annually and maintained by the United States Army Corps of Engineers (USACE). Privately owned and maintained flood and tide gates are located in Washington Harbor at the Georgetown Waterfront Development. The flood and tide gates are used under high water conditions in the Potomac River to control flooding in the harbor area. Two grade control structures constructed at Watts Branch to control peak flows and sediment movement to alleviate repetitive downstream flooding are maintained by the District.

The District Floodplain Management Program of WPD evaluates quantity control and potential impacts on water quality for proposed flood management projects. The quantity control and water quality evaluation is conducted following the laws and regulations that govern the District Floodplain Management Program.

FY 2007 Activities: No retrofitting of the levees or flood and tide gate structures is planned. However, according to the National Capital Planning Commission's Federal Capital Improvements Program for FY 2007-2012, there is a flood protection project for downtown, Washington, D.C. that consists of retrofitting the existing levees between the Lincoln Memorial and Washington Monument.

The Watts Branch stream restoration project plans are at 90 percent design stage. The stream restoration project for Watts Branch proposes the construction of step-pool structures in front of the existing downstream grade control structures. During a stream assessment conducted by USFWS, the segment of the tributary located upstream of the grade control structures was found to be stable, with little channel and bank erosion and a well-developed riparian buffer. No restoration of that segment is necessary at present.

Floodplain Mapping

Performance Standard: The District coordinates with FEMA in identifying District areas prone to flooding.

FY 2007 Activities: Flood hazard mitigation and floodwater pollutant removal requires identification of at-risk areas through floodplain mapping. Through the nation's flood insurance policy, FEMA has developed floodplain maps for all areas of the United States.

The FEMA Q3 FIRMs for the District are currently being revised by FEMA using the latest technologies and most current data, and incorporating updated studies based on Light Detection and Ranging topography and new hydraulics. During FY 2007, DDOE met 9 times with FEMA to review draft digital FIRMs as part of the national flood map modernization program.

On September 26, 2007, FEMA propsed a rule to define Base Flood Elevations (BFEs) and modifications to the existing BFEs in the District. These proposed BFEs were open for public review and comment; this comment period was still open at the end of the reporting period. An update will be provided in the next Annual Report.

FY 2008 Goal: The District will continue coordination with FEMA and other partners and stakeholders regarding the District's floodplain management program, and comment on FEMA's new proposed BFEs for the District..

Floodplain Development Procedures and Reviews

Performance Standard: The District reviews and assesses the impact of flood control projects.

The MS4 Permit requirements for floodplain development procedures and review are met through the promulgation of Title 20 (Chapter 31- Flood Hazard Rules) of the DCMR. These regulations describe in detail how projects proposed in floodplains will be reviewed to ensure proper consideration of pollutant reduction in flood-prone areas. Together, these rules regulate, restrict, or prohibit certain uses, activities, and development, which alone or in combination with current or future uses will cause unacceptable increases in flood heights, velocities, and frequencies.

FY 2007 Activities: The District reviewed development within the District floodplain as provided in 20 DCMR Chapter 3100 and the DOH *Nonpoint Source Management Plan II* (provided as attachments to the 2007 Annual Report). Of the proposed projects reviewed for MS-4 areas, none were located in a floodplain or a flood-prone area.

FY 2008 Goal: The District will continue review of development projects in the Development and Activity Database maintained by the Office of Planning.

Impervious Surfaces Evaluation

Performance Standard: The District reviews and assesses the impervious area on lots undergoing construction or re-construction.

The permit requires the collection of data on the percentage of impervious area located in floodplain boundaries for all existing and proposed development. Since the effective date of the Permit, this has been done for proposed developments through the construction plan information submitted with construction permit applications under 20 DCMR and the Water Pollution Control Act of 1984, D.C. Official Code § 8-103.01 *et. seq*. DDOE has initiated a program to collect data to evaluate impervious surfaces for both proposed and existing development in floodplains.

FY 2007 Activities: DDOE, in collaboration with OCTO, performed an analysis to determine the percentage of impervious surface on the District floodplains using FEMA Q3 flood data for three floodplain types: 100-year with velocity hazard (Zone A), 100-year floodplain (Zone AE), and 500-year floodplain (Zone X500). Features analyzed included buildings, sidewalks, and roads. The resulting percentage of total impervious surface area that is within the floodplains was calculated using GIS and is summarized in Table 15.

In addition, DC WASA worked to develop a new billing database linked to impervious cover measurements for District properties. This database will provide the backbone necessary to shift the District's stormwater fee from the current structure to one based on impervious cover.

Table 12. Impervious Surface Analysis of Floodplains.

	Total Impervious Area (sq.ft.)	Total Area, Excluding Water (sq. ft.)	Percentage Impervious Area
Zone A	581,948 (0.02 sq. mi.)	3,529,384 (0.12 sq. mi.)	16.49%
Zone AE	17,151,553 (0.6 sq. mi.)	843,602,241 (3.03 sq. mi.)	20.27%
Zone X500	20,667,372. (0.7 sq. mi.)	49,849,324 (1.79 sq. mi.)	41.46%
Complete City (sq. mi.)	**26.43**	**61.31**	**43.10%**

FY 2008 Goal: The District will continue review of development projects in the Development and Activity Database maintained by the Office of Planning to allow

continued updating of the amount of proposed impervious surface added to the floodplains (through projected development) to ensure consideration of pollutant reduction in the floodplains. The District will also continue to develop and refine the database necessary for an impervious stormwater fee.

III.F.5 Monitor and Control of Pollutants from Municipal Landfills or Other Municipal Waste Facilities

Part III.B.5 of the Permit pertains to the Control of Pollution from Municipal Landfills and Other Municipal Waste Facilities. The management plan for stormwater pollution control with respect to municipal landfills and municipal waste facilities emphasizes:

- Municipal waste reduction, and
- The prioritization of municipal waste reduction controls.

Performance Standard: The District maintains its municipal solid waste transfer stations in order to minimize the stations' stormwater impacts and to keep up with increasing waste and recyclable loads in the District.

FY 2007 Activities: DPW worked to control pollutants in runoff from municipal waste facilities, including waste transfer stations and equipment storage and maintenance facilities, by finishing the refurbishment of the municipal solid waste transfer station at Fort Totten and continuing the evaluation of additional LID elements to be incorporated at the Fort Totten and Benning Road transfer stations.

Municipal Waste Reduction Program

The Municipal Waste Reduction Program was developed to identify measures to evaluate, inspect, enforce, monitor, and reduce pollutants in stormwater discharges from facilities that handle municipal waste including sewage sludge. Regulatory programs directly supporting the District's nonpoint source stormwater protection and waste reduction efforts include DDOE's *Nonpoint Source Management Plan II*, which cites the Solid Waste Management and Multi-Material Recycling Act of 1988. This Act requires the recycling of certain wastes, thereby materially reducing the activities at waste handling facilities, further reducing stormwater pollution. The District provides recycling service to residential and multi-family residences of three or fewer dwelling units and requires commercial businesses and government offices to have a private recycling

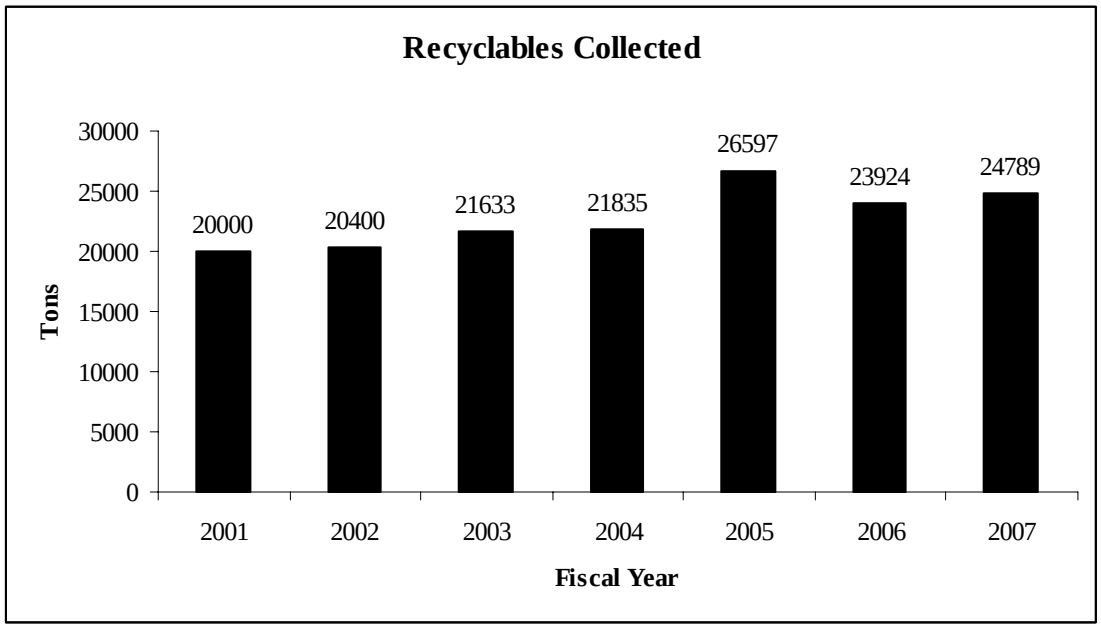
contractor. In FY 2007, DPW collected an estimated 109,883 tons of solid waste, plus 24,789 tons of recyclables from the residential population.

Figure 4 shows the seven-year trend of increasing recyclable collection tonnage collected by the District.

The District does not operate any solid waste disposal sites within the District. Instead, municipal solid waste collected by DPW is deposited at either the I-95 Energy Resource Recovery Facility or private landfills in Virginia.

In FY 2007, the District completed refurbishing the municipal solid waste transfer station at Fort Totten, including improvements in the paving and drainage systems, with minor projects still to be completed. The land surface within the District waste handling facilities is predominantly paved and/or highly developed. In FY 2007, the District waste handling facilities were swept with mechanical sweepers several times per week.

Figure 4. Seven-year Trend in Recyclables Collected.



The management program for the municipal facilities targets the nonpoint source runoff with particular focus on the control of pollutants that build up on the paved and/or developed portions of the facility site. DPW is developing a program to provide water

quality control at the District municipal waste facilities including waste transfer stations and equipment storage and maintenance facilities.

The District established a solid waste facility permitting process for private solid waste transfer stations, which includes performance standards for operators of transfer stations. This process is under review to incorporate best practices from cities across the country.

Prioritization of Municipal Waste Reduction Controls

The Permit requires the District to develop priorities and procedures for implementing control measures for pollutant reduction at sites within the District's MS4. The initial phase of the program included procedures to evaluate, inspect, and monitor regulated sites. Based on the evaluation of the results of this monitoring, the District's solid waste management now includes waste reduction, recycling, and disposal.

FY 2008 Goals: The District will continue to maintain the municipal solid waste transfer stations to reduce impacts to stormwater.

III.F.6 Monitor and Control of Stormwater Pollutants from Hazardous Waste Sites

Part III.B.6 and Part III.B.10 of the Permit outline the requirements for monitoring and control of pollutants from hazardous waste sites. The management program for stormwater pollution control from hazardous waste sites emphasizes identification and mapping of facilities and monitoring of stormwater discharges.

Performance Standard: The District is active in identifying and monitoring hazardous waste from the industries and businesses within the District.

FY 2007 Activities: The formal procedures DDOE uses to control the impact and extent of hazardous waste on the MS4 are discussed in: *Hazardous Waste Division Administration, Hazardous Waste Management Strategic Plan for Enhancement of Environmental Health, and Standard Operating Procedures.* Based on established procedures in this document DDOE developed inspection protocols to govern field investigations, including the investigation of facilities that generate or store hazardous waste. The *Hazardous Waste Division Administration, Hazardous Waste Management Strategic Plan for Enhancement of Environmental Health,* and *Standard Operating Procedures* was provided as an Attachment to the 2007 Annual Report.

Illicit discharge detection is another component of the program to identify facilities that contribute a substantial pollutant loading to the MS4. Identifying and sampling discharges from connections provides information that may identify hazardous waste facilities with illicit connections. In FY 2007, DDOE MS4 staff conducted 17 illicit discharge investigations and of those, one incident occurred at Walter Reed Army Medical Center (Ward 4). Walter Reed Army Medical Center is a facility listed in the RCRA/CERCLA database for hazardous materials.

DDOE HWD conducts inspections of RCRA hazardous waste facilities to determine compliance with hazardous waste regulations. HWD conducted a total of 6 inspections at several RCRA-LQG and "restricted access" facilities within the District between October 1, 2006 and September 30, 2007. While HWD inspections do not directly address water quality, inspectors reported spills (that could pose a water quality threat) to DDOE or WASA for further water quality investigation.

FY 2008 Goal: The District will continue to identify and monitor hazardous waste from industries and businesses within the District through the use of inspections and investigations in water quality.

Industrial Facilities Database

This program is discussed under Section III.F.2.

III.F.7 Pesticides, Herbicides, and Fertilizer Application

Part III.B.7, Part III.B.10, and Part III.B.12 of the Permit outline the requirements for pesticide, herbicide, and fertilizer application. The management plan for stormwater pollution control of pesticides, herbicides and fertilizers entails a mixture of programs emphasizing efforts to control pesticide, herbicide, and fertilizer applications. A summary of these activities is provided and includes control programs for pesticide, herbicide and fertilizer application on District and private property as well as public educational programs specifically targeting these environmental pollutants. Details of the public education program on pesticides, herbicides and fertilizer application are provided in Section III.F.12.

FY 2007 Activities: The District worked to control pesticide, herbicide, and fertilizer runoff, and the use of other toxic substances as detailed in the SWM Plan and existing regulations. As part of the IPM Program, the District continued to provide information about educational programs to private property owners through pamphlet distribution to residents.

Pesticide, Herbicide, and Fertilizer Application Activities

Performance Standard: The District's Pesticide Program is active in educating and training the public on the correct handling and application of pesticides and herbicides.

As of FY 2007, the District has 1,288 pesticide applicators certified in various categories.

FY 2008 Goals: The District will continue to educate the public on the appropriate use of pesticides, herbicides, and fertilizers to reduce these substances in the MS4; to train District applicators in the safe use and handling of pesticides, herbicides and fertilizer; and to coordinate with the EPA on Federal Worker Protection Standards (WPS). In addition, DDOE will continue to work with Office of Property Management (OPM) to replace the use of pesticides with environmentally friendly alternatives.

Pesticide Control Program on District Property

The Pesticide Program goal is to train and certify pesticide applicators in the safe use and handling of pesticides and to promote the incorporation of IPM principles with a reduction in pesticide use as a goal. The Pesticide Control Program is implemented by DDOE. The agency routinely inspects stores that have the potential to sell pesticides to monitor the products that are for sale and to determine their registration status. This program also continues to regulate pesticide use in the District by certifying and licensing applicators and conducting compliance inspections both routine and "for cause".

The District does not have IPM regulations established; however, the District recently enacted new legislation intended to promote the use of reduced-risk pesticides and methods of pesticide application. In addition, this legislation will improve public notification procedures for pesticide applications.

Pesticide Control Program on Private Property

DDOE provides educational outreach to private property owners to better inform them about the proper use and disposal of pesticides, herbicides, and fertilizers, and safer alternative methods. The program distributes pamphlets to residents that provide information on environmentally sound practices with regard to the use of pesticides in the yard or garden, the introduction of "good" pests into the garden, lawn care services, the District Nutrient Management Program, and IPM.

Source Characterization Screening

Performance Standard: The District waters are tested regularly for the presence of pesticides, herbicides and fertilizers.

FY 2007 Activities: Pesticides are monitored as part of the overall wet- and dry-weather outfall monitoring program. In previous years, pesticides have been detected in some of the samples collected from the outfalls. In FY 2007, no pesticides were detected at any monitoring sites within the Rock Creek and Potomac River watersheds.

Additional details of sampling activities and analytical results for pesticides can be found in the 2008 Discharge Monitoring Report.

FY 2008 Goal: The District will continue to monitor sites within the MS4 for the presence and levels of pesticides, herbicides, and fertilizer chemicals.

III.F.8 Deicing Activities

Section III.B.8 of the Permit, "Deicing Activities", details the permit requirements to minimize the impact of deicing materials on water quality.

The management plan for stormwater pollution control in deicing activities emphasizes:

- Evaluation of deicer materials,
- Application of deicer materials, and
- Deicer materials storage facilities.

Evaluation of Deicer Materials

Performance Standard: The District actively seeks to use the most effective and environmentally safe products available while keeping the streets and highways of the District ice free.

The District continued to use a brine solution on bridge surfaces and other critical roadway infrastructure to reduce pollutant loading to receiving waters from deicing activities.

Application of Deicer Materials

Performance Standard: The District is active in keeping the streets and highways of the District ice free. DDOT will use a brine pretreatment solution on bridge surfaces to reduce pollutant loading to receiving waters. Application rates and techniques will be

evaluated as per the comparison study, and modifications will be made to the deicing program as necessary.

FY 2007 Activities: DDOT's primary obligation in snow management and deicing activities is to provide for the safe movement of emergency vehicles and other vehicular traffic as quickly as possible following winter storms. DDOT employs a variety of techniques, including plowing, salt application and deicing chemical application on various roads, depending on the amount and type of precipitation expected. DDOT uses a brine pretreatment solution on bridge surfaces to reduce sodium chloride use and pollutant loadings to receiving waters. The brine solution is 23 percent sodium and 77 percent water. The use of the brine pre-treatment provides a 20-30 percent reduction in the amount of salt used during winter months for control of snow and ice. In FY 2007, this de-icer solution was applied to critical roadway infrastructure such as bridges.

DDOT completed construction of a brine manufacture facility to produce brine for use as a pre-treatment for snow and ice. The facility is located at the DDOT Farragut Street Salt Dome Facility, 401 Farragut Street, NE.

FY 2008 Goals: The District will continue to use a brine pretreatment solution for critical roadway infrastructure, providing a reduction in the amount of salt used during the winter months. In addition, DDOT will consider expanding this program through the purchase of additional spray trucks.

Deicer Materials Storage Facilities

Performance Standard: The District utilizes stormwater management facilities at its salt storage sites to control runoff and water quality from the sites.

The District operates four salt storage facilities. At all of the facilities, the run-off is controlled by a stormwater management facility to reduce the amount of pollutants. Three of the four facilities are located within the MS4 area. The fourth location, 1241 W Street, NE, is within the CSO area. The locations of the three facilities inside the MS4 area are (1) Potomac Avenue and R Street, SW; (2) Fort Drive, NW, east of Fort Reno Reservoir, and (3) 401 Farragut Street, NE. All DDOT salt dome storage facilities are constructed with stormwater BMP structures for load discharge reductions.

FY 2008 Goal: DDOT will continue inspection and maintenance of the salt storage facility per the SWM maintenance plan.

III.F.9 Snow Removal

Permit Part III.B.9 requires the Permittee to establish a program and operating plan to ensure excessive quantities of snow and ice control materials do not enter the District's water bodies. The management plan for stormwater pollution control through snow removal emphasizes the snow and deicer control program.

Snow Control Program

Performance Standard: The District implements its snow removal and deicing program operating plan to ensure safe passage on its roadways using deicing materials that provide the minimum impact practicable to the stormwater runoff from snow and ice that enters the MS4.

FY 2007 Activities: The District snow removal program is discussed on the DDOT web site at the following link: http://ddot.dc.gov/ddot/cwp/view,a,1256,q,564154.asp.

DDOT regularly prepares a Performance Measures Report that includes targets and achievements for a number of performance measures, including snow removal. In the FY 2007 snow-season, DDOT was not required to remove snow from the roadways; only snow plowing was required.

FY 2008 Goal: To continue to provide efficient snow removal and safe roadways within the District while providing the minimum impact to the stormwater runoff entering the MS4.

Alternative Snow Stockpile Areas

Performance Standard: Currently no plans to develop an alternate snow removal plan exist.

The District's current snow removal and deicing program is designed to avoid snow deposits in areas adjacent to water bodies, wetlands, and areas near public or private water wells except during a declared snow emergency. The plan is routinely reviewed for its applicability, and there is no need to revise the plan at this time.

FY 2008 Goals: No program goals are necessary at this time.

III.F.10 Management Plan to Detect and Remove Illicit Discharges

Part III.B.10 of the Permit pertains to the Management Plan to Detect and Remove Illicit Discharges.

The stormwater pollution control management plan for detection and removal of illicit discharges entails a mixture of program activities that include the following:

- Illicit discharge detection and elimination.
- Floatables reduction.
- Waste collection.
- Inspection plan.
- Enforcement plan.
- Spill response plan.

Illicit Discharge Detection and Elimination

Performance Standard: The District maintains an illicit discharge program designed to detect and eliminate illicit discharges within the District. DDOE, WASA, and DPW conduct activities related to illicit discharge detection and elimination.

The District continued an ongoing program to detect illicit discharges as required by the SWM Program and the Permit, prevent improper disposal into the storm sewer system as required by federal regulations, and work with District agencies on a multi-program effort to improve environmental compliance of automotive repair shops. An update to the IDDE program will be included in the SWMP to be submitted in February 2009.

The DPW Solid Waste Education and Enforcement Program (SWEEP) seeks to maintain clean private and public spaces by investigating illegal dumping complaints, overgrown lots, poor trash containerization and other sanitation violations. Generally, SWEEP staff will try to work with property owners to bring the property into compliance with the District code. If SWEEP staff cannot obtain voluntary compliance from a property owner, the Department may clean the property and charge the property owner twice the cost of the cleanup effort. This cost will be added to the property owner's next property tax bill. The SWEEP program is authorized for a staff of 36 field investigators.

DDOE has implemented an ongoing program to detect illicit discharges and to prevent improper disposal into the storm sewer system as required by federal regulations. DDOE personnel continued to investigate potential illicit discharges in response to reports by citizens or government personnel. Generally, a citizen might be prompted to make a call to the District of Columbia Office of Emergency Management upon noticing a suspicious color or odor to streams or upon witnessing illegal waste dumping. Office of Emergency Management directs calls about these types of complaints to DDOE. DDOE personnel

collect information about the location and physical characteristics of the discharges in preparation for a site visit. Often DDOE is able to respond immediately by sending their personnel into the field. Depending on the characteristics of the discharge described, DDOE might alternatively refer the case to another appropriate District agency (e.g., in the case of water main breaks or other sewer infrastructure problems WASA is contacted to resolve the problem). Depending on the extent and site of the discharge, federal entities such as EPA, U.S. Coast Guard, or NPS may be called upon for assistance with sample analysis, investigation, or containment.

In FY 2007, DPW SWEEP responded to 6,387 requests for action for illegal dumping complaints, overgrown lots, poor trash containerization and sanitation violations. The sites investigated were located throughout the entire District.

In FY 2007, DDOE WQD hired two new full-time staff members to assist in illicit discharge investigations. WQD staff conducted 19 illicit discharge investigations and 19 targeted facility inspections in FY 2007. Investigations were conducted to discover the nature and sources of potential discharges to Rock Creek, the Anacostia River, and the Potomac River. Of the 19 illicit discharge investigations, four remain unresolved. One unresolved case was a spontaneous instance of illegal dumping, while another was from construction activity at an embassy property with privileged immunity. The cause of one remaining unresolved case is still under investigation, while corrective action is pending verification by WQD in the fourth case.

As a result of the 38 total investigations and inspections, DDOE issued two Notices of Inspection, one Notice of Infraction and five Notices of Inspection and Site Directives. About half of the investigations were initiated based on complaints or reports from citizens, other District departments, or District contractors engaged in MS4-related field activities. The remaining cases were targeted inspections focusing on auto repair and laundry facilities in the MS4 area of the city (Tables 13 and 14).

DDOE also visually inspected MS4 outfalls and the waters to which they discharge in efforts to detect and eliminate illicit discharges in selected sewersheds. WASA personnel also performed visual inspections while maintaining catch basins and the MS4 infrastructure.

Table 13. Complaint-Driven Illicit Discharge Investigations in FY 2006.

Case*	Location	Watershed	Issue	Resolved
70111	DPW Site at 1125 O St. SE	Anacostia	Fuel Spill	Yes
70125	New York and South Dakota Ave NE	Anacostia	Sediment Discharge	Yes
70306	National Arboretum	Anacostia	Cracked manhole leaking to Hickey Run	Yes
70306A	Walter Reed Army Medical Center	Rock Creek	Hydraulic leak	Yes
70315	Anacostia Drive	Anacostia	Water main break	Yes
70320	2155 Queens Chapel Rd NE	Anacostia	Illicit washed concrete mix discharge	Yes
70412	1771 Lang Place NE	Anacostia	Foul odor and unknown fluids at backyard	Yes
70426	56th Place and East Capitol St SE	Anacostia	Sediment discharge to a catch basin	Yes
70501	1715 Bladensburg Rd, NE	Anacostia	Sediment discharge to a catch basin	Yes
70522	New Mexico Ave and Garfield St	Potomac	Illicit discharge at an outfall	No
70601	4100 Hunt Place NE	Anacostia	Illicit discharge to a public space	Yes
70615	Soapstone Park NW	Rock Creek	Sewage leak from a sanitary sewer line	Yes
70717	Chinese Embassy at Van Ness St.	Rock Creek	Sediment discharge	No
70806	1800 Beach Drive NW	Rock Creek	Sewage leak from a sanitary sewer line	Yes
70823	1400 North Royal Street, Alexandria	Potomac	Diesel fuel spill	Yes
70820	Woodmont Pl. and Good Hope Rd. SE	Anacostia	Sediment discharge from construction	Yes
70827	Wesley and Massachusetts Ave	Potomac	Sediment discharge from construction	Yes
70911	Fort Dupont	Anacostia	Illegal dumping	No
70919	Fort Stanton	Anacostia	Sediment discharge from water release	No

* Note that each case may involve multiple site visits, coordination with DC and/or federal agencies as well as owners/operators of facilities.

Table 14. Targeted Facility Inspections in FY 2007.

Case Number	Facility Type	Facility Name	Location	Watershed	Violation
70423	Auto Repair	The Auto Doctor	4521 Minnesota Ave NE	Anacostia	Fined
70423A	Auto Repair	BP	5207 Nannie Helen Burroughs	Anacostia	Corrected
70424	Auto Repair	Washington Transmission	4452 Nannie Helen Burroughs	Anacostia	Corrected
70430	Auto Repair	C&E Auto Services	1729 Bladensburg Rd. NE	Anacostia	Corrected
70430A	Auto Repair	A&S Body Shop	1801 Bladensburg Rd. NE	Anacostia	Corrected
70501	Auto Repair	Miltons	1715 Bladensburg Rd. NE	Anacostia	Corrected
70503	Auto Repair	Youngins	1942 Montana Ave NE	Anacostia	Corrected
70503A	Auto Repair	Earl Sheib Paint & Body	1913 Bladensburg Rd NE	Anacostia	Corrected
70507	Auto Repair	Vibesom	1830 Bladensburg Rd. NE	Anacostia	Corrected
70607	Auto Repair	Feuentes Brothers Auto Sales	2507 Bladensburg Rd. NE	Anacostia	Corrected
70607A	Auto Repair	A&D Auto Rental	2712 Bladensburg Rd. NE	Anacostia	Corrected
70705	Auto Repair	Yellow Cab Company	1636 Bladensburg Rd. NE	Anacostia	Corrected
70710	Laundry	Eddie's Laundry Mat	2107 Alabama Ave SE	Potomac	None
70710A	Laundry	Shipley Laundromat	2275 Savannah St. SE	Potomac	None
70711	Laundry	Good Hope Road Laundromat	1603 Good Hope Road SE	Potomac	None
70711A	Laundry	Love Bubbles	3027 Naylor Road SE	Anacostia	None
70718	Laundry	Spinners Laundromat	3915 South Capitol St. SW	Potomac	None
70801	Laundry	Shulman's Laundromat	1546 1st St. SW	Anacostia	None
70801A	Laundry	Sheriff Laundromat	4338 Sheriff Road NE	Anacostia	None

FY 2008 Goals: The District will continue to maintain clean private and public spaces by investigating illegal dumping complaints, overgrown lots, poor trash containerization and other sanitation violations; continue the program to detect illicit discharges as described in the upgraded SWM Plan and the Permit, and to prevent improper disposal into the storm sewer system as required by federal regulations. DDOE plans to expand inspection of

facilities in areas that show high frequency of detections and/or high quantities of pollutants at outfalls (as soon as staffing allows). DDOE personnel will continue to investigate potential illicit discharges in response to reports by citizens or government personnel.

Floatables Reduction Program

Performance Standard: The District operates a river pollution control program that seeks to reduce the floating debris found in the District's rivers.

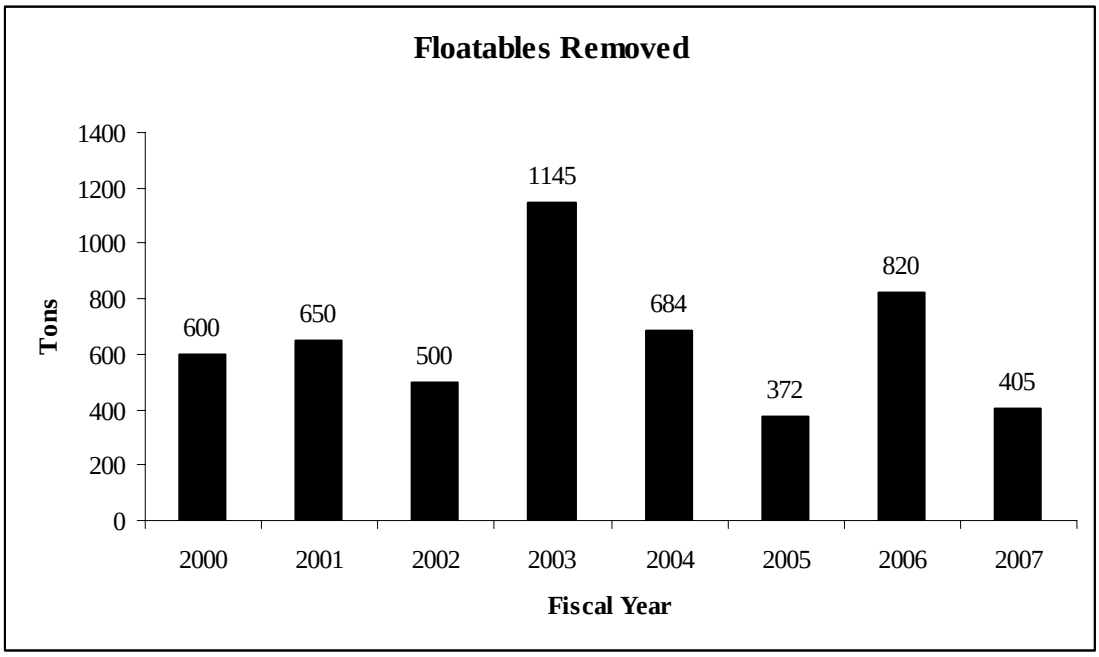
The District continued to conduct the Floatables Reduction Program for the Potomac and Anacostia Rivers.

The Anacostia River Floatables Debris Removal Program was initiated in August 1992 to remove floating debris from the Anacostia and Potomac Rivers on a routine basis. The program is operated by the WASA Department of Sewer Services, Inspection and Maintenance Division. The floating debris removal program utilizes a 12,000-lb capacity skimmer boat, a 6,000-lb capacity skimmer boat, and support boats to remove floatable debris from the rivers as well as trash that accumulates on the river banks and in mud flats at low tide. The boat docking area and roll-off containers are located on the west bank of the Anacostia River in the vicinity of M and 14th Streets, SE.

The boats pick up debris five days per week.

FY 2007 Activities: During FY 2007, the skimmer boats removed 405 tons of debris. Figure 5 shows the eight-year trend of floatables tonnage removed from the District's rivers. The number of tons removed in FY 2003 had more than doubled from past fiscal years due to the use of skimmer boats that control floatables while repair work on the CSO was taking place.

Figure 5. Eight-Year Trend of Floatables Removed



FY 2008 Goal: The District will continue the Anacostia River Floatables Debris Removal Program for the Anacostia and Potomac Rivers.

Waste Collection Program

Performance Standard: The District provides household hazardous waste collection and seasonal leaf collection each fall.

The Permit prohibits the discharge of used motor vehicle fluids, household hazardous wastes, grass clipping, leaf litter, and animal waste into separate storm sewers. The existing program for the collection of motor vehicle fluids and household hazardous waste has been expanded. Accepted materials include paint, batteries, pesticides, solvents, motor oil, furniture polish, nail polish and remover, and other possibly toxic items.

FY 2007 Activities: During FY 2007, two hazardous waste collection days, where residents may bring hazardous wastes for proper disposal, were conducted by the District. Collection days were held on October 28, 2006 and April 27, 2007.

The October waste collection was held at the Benning Road Transfer Station and the April event was at Carter Barron Amphitheater. In total, 274 55-gallon drums of waste

flammables, paints, oxidizer, pesticides, acids, bases, motor oil, and antifreeze were collected at each event. Also collected were boxes of fluorescent bulbs, mercury thermometers, and dry cell car batteries. Care Environmental Corporation collected and packed the waste for the District. The October and April collection events also resulted in the collection of 25 and 40 tons of old consumer electronics, respectively. Table 15 shows the six-year trend of household hazardous waste reduction in the District.

Bagged grass clippings and leaves are collected throughout the year with regular garbage collection. Leaf litter is collected during November, December, and January by DPW utilizing vacuum trucks. A discussion of Leaf and Holiday Tree collection activities is provided in Section III.F.1 of this report.

FY 2008 Goals: The District will strive to increase the number of citizens participating in the household hazardous waste and leaf collection programs through public education and the operation of "collection days" within the District on a bi-annual basis.

Table 15. Six-Year Trend in Household Hazardous Waste Reductions.

Fiscal Year	Collection Events	Participants (No. of Cars)	Household Hazardous Waste (55 gallon drums)	Electronics (tons)
2002	2	1,500	148	4
2003	5	3,178	261	63
2004	6	4,490	249	117.5
2005	6	6,261	375	142
2006	4	4,678	387	93[a]
2007	2	2,748	274	65

[a] Includes two tons of electronics collected during an e-cycling collection November 15-22, 2005 at the Benning Road PEPCO station.

Inspection Plan

Performance Standard: The District maintains an inspection program for illicit discharges.

FY 2007 Activities: The District continued with its illicit connection inspection and enforcement program, together with an expanded public education program. The Permit states that the Permittee will use a mix of strategies for the detection and elimination of illicit discharges. DDOE has drafted a targeted enforcement protocol based on the analysis of the results of previous monitoring activities. This protocol targets facility

inspection areas that show high frequencies of detection and quantities of pollutants. It describes a stepped process by which inspectors will prioritize the District's water bodies according to level of impairment, correlate the pollutants to broad categories of potential sources, locate individual business that fall under the identified sources, plan compliance inspections for these facilities, and resolve compliance issues.

FY 2008 Goals: The District will continue detection and elimination of illicit discharges through a targeted enforcement protocol for the Inspection Plan.

Enforcement Plan

Performance Standard: The District maintains an enforcement program for illicit discharges.

FY 2007 Activities: The District continued the enforcement plan program to prohibit the discharge or disposal of motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste into separate storm sewers. DDOE revised the *Draft Water Quality Division Enforcement and Compliance Manual* that describes inspection and enforcement efforts. It has been replaced by *The Environmental Enforcement Process in the District of Columbia*. Copies of both documents were provided as Attachments to the 2007 Annual Report, and will also be included in the 2009 SWMP. The manual details the written enforcement strategy outlining how enforcement actions, such as violation notices, notices of infractions, and stop work orders, are issued and adjudicated. The strategies outlined in the manual provide the standard operating procedures for enforcement within the District. The manual establishes the guidelines for compliance inspections conducted by DDOE.

Enforcement of illicit connections is accomplished by an initial corrective action notice from DDOE and then referral to the Plumbing Inspection Branch of DCRA for legal enforcement action. The Plumbing Inspection Branch of DCRA is responsible for enforcement of illicit connections as violations of the plumbing codes. A discussion of enforcement activities is provided in Section III.F.11.

The District already has legislation that prohibits the discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste into separate storm sewers. The Water Pollution Control Act of 1984 (D.C. Official Code 8-103.07 (e)) provides that no person shall discharge a pollutant to the waters of the District. The Water Pollution Control Act defines "pollutant" as any substance which

may alter or interfere with the restoration or maintenance of the chemical, physical, radiological, and biological integrity of the waters of the District; or any dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemicals, chemical wastes, hazardous wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, oil, gasoline and related petroleum products, and industrial, municipal, and agricultural wastes. Implementing regulations at 21 DCMR § 529 control stormwater runoff for oil, grease, organic animal wastes and other discharges that violate the water quality standards of receiving waters in the District.

FY 2008 Goals: The District will continue detection and elimination of illicit discharges through a targeted enforcement protocol of the Enforcement Plan.

Spill Response Plan

Performance Standard: The District has developed and implements the procedures specified in the WPCCP for spills and chemical releases. The District also provides pollution prevention outreach to managers of facilities and in-house spill training to District agencies.

The Permit discusses implementing procedures to prevent, contain, and respond to spills that may discharge into the MS4, including the training of personnel in spill prevention and response procedures.

The WPCCP provides guidance on timely and effective response to hazardous substance releases that threaten to impact the natural resources of the District. The plan also addresses the pollution and resource assessment, mitigation, cleanup, and follow-up actions resulting from non-permitted discharges. The District continues to operate under the plan developed in 1999. The procedures outlined in the WPCCP are followed for reports of illicit discharges.

Good housekeeping involves using practical, cost-effective methods to identify ways to maintain a clean and orderly facility and keep contaminants out of the separate storm sewer. It includes establishing protocols to reduce the possibility of mishandling chemicals or equipment and training employees in good housekeeping techniques. These protocols must be described in the facility SWM Program and communicated to appropriate facility personnel.

A spill or release episode includes any spillage or leakage of fuel from fuel storage tanks, piping, dispensing equipment, or vehicles. If the spill is less than 25 gallons, then the Fuel Services Supervisor is immediately notified. The Fuel Services Supervisor will then follow established DPW procedures to clean up the spill. If the spill is more than 25 gallons, then notification is given to the District Underground Storage Tank Division, the DC Fire Prevention Division, and the Fleet Services Administration. Response procedures may include tank gauging, vapor monitoring, groundwater monitoring, and secondary containment. The response procedure will also include sample collection of soil and other material that will be analyzed for known and unknown contaminants. A spill assessment chart will be developed with physical and chemical properties clearly outlined in the response plan. Spill response plans will also include lists of materials containing the following: acid neutralizing agents, oil absorbents, biohazard absorbents, approved absorbents rolls, absorbents containers and fuel tank breathers.

FY 2007 Activities: No further developments occurred during FY 2007 concerning revisions to the WPCCP. DDOE began work to update its current outreach program on spill prevention and pollution prevention for facility managers.

FY 2008 Goals: The District will complete an update of its current outreach program on spill prevention and pollution prevention for facility managers as well as continue to provide in-house spill response training to District agencies.

III.F.11 Inspection and Enforcement Plan

Inspection and Maintenance Plan

Facility inspections and visual inspections of the sewer system are integral parts of the plan to detect illicit discharges. Inspectors use outfall monitoring data to identify the problem pollutants and where they are appearing in the sewer system. Literature and professional experience can then be used to determine what kinds of sources or activities are associated with the problem pollutants. Concurrently, inspectors can use their knowledge of the sewer system, maps and other resources to begin tracing back to the geographic origin of the pollutants. If a facility is found to be a contributor or potential contributor of the detected pollutants as a result of an inspection, DDOE will attempt to bring it into compliance with stormwater regulations, which might entail education and/or recommendation for fines or other enforcement actions against the facility. New Notice of Inspection forms were developed and printed for enforcement purposes.

The industrial facilities database (discussed in Section III.F.2) and GIS tools under development will be a powerful resource for completing this task. As more facility information (on location and wastes generated) is collected through routine compliance inspections, the District will increase its capacity to quickly identify potential sources of illicit discharges in the geographic area of interest through the data integrated in the GIS. These tools would not only be used in response to illicit discharges that have already occurred, but to direct or focus the routine inspections in a manner that would also facilitate proactive interactions with businesses and prevent illicit discharges.

Industrial Facilities

In FY 2007, DDOE inspected industrial facilities for compliance with stormwater regulations. As a result of the compliance inspections, DDOE issued

- Two Notices of Violation
- One Notice of Infraction and
- Five separate Notices of Inspection and Site Directives to facilities deemed responsible for illicit discharges to the MS4.

Construction Site Inspections and Loading Estimates

Performance Standard: The District conducts inspections for the installation and maintenance of SWM and erosion control devices at commercial, residential and road construction projects. The District also conducts inspections at construction sites and their SWM BMPs. Established BMPs are inspected as per their maintenance activities and records.

Inspection procedures are outlined in 21 DCMR § 534 *Water Quality and Pollution Regulations* (provided as an Attachment to the 2007 Annual Report) and the Nonpoint Source Management Plan for the District. The legal basis for conducting inspections related to stormwater management is outlined in 21 DCMR § 545. Procedures for conducting an inspection are detailed in the *Standard Operating Procedure for the Enforcement of Soil Erosion and Sedimentation Control and Storm Water Management Regulations* and the *Standard Operating Procedures for Soil Erosion and Sedimentation Control and Storm Water Management Inspection.* Copies of these two documents were provided as attachments to the 2007 Annual Report.

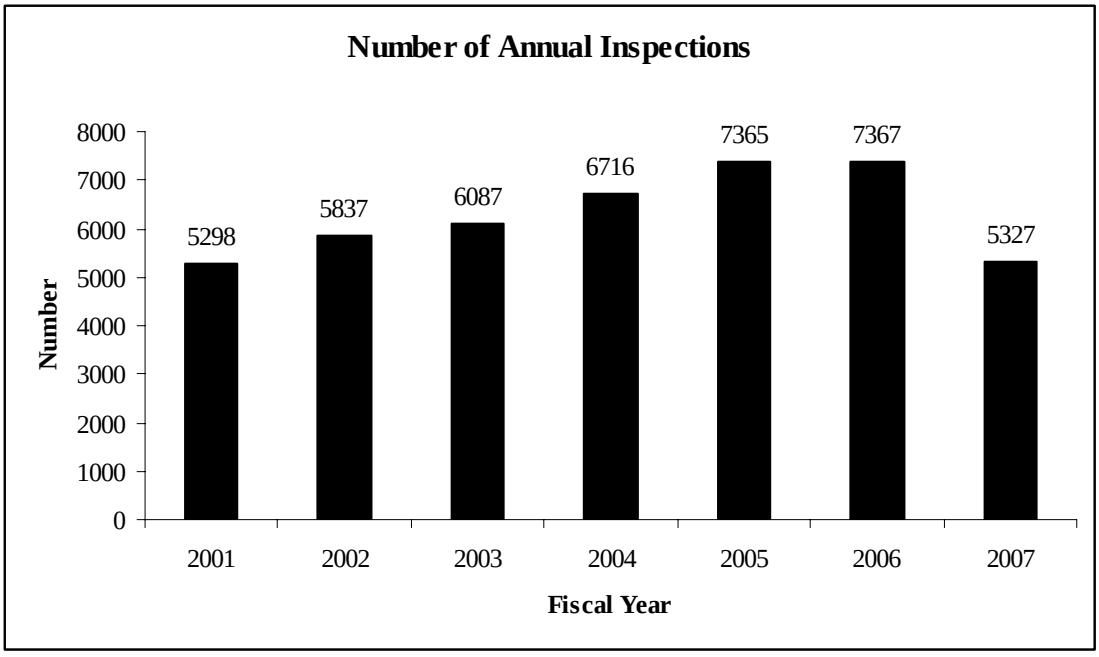
DDOE has refined and updated the District's automated database system for tracking stormwater management facilities inspected for maintenance to include tracking of

construction projects with stormwater management BMPs, "Final Inspection" completion and "Final Inspection Notification Letters" to SWM applicants, as well as monitoring receipt of "As-Built Plans" of completed stormwater projects.

The updated database system contains data for BMPs constructed since the inception of the program in 1988 and has enabled faster and more efficient rescheduling of inspections and retrieval of maintenance records.

FY 2007 Activities: DDOE conducts site inspections and calculates loading estimates from construction sites within the District. In FY 2007, DDOE conducted 5,327 inspections at construction sites and issued 214 enforcement actions. Figure 6 shows the seven-year trend of the construction inspection program. Figure 7 shows the seven-year trend of annual enforcement actions. Two full-time positions were filled within the Inspection and Enforcement Branch of DDOE's Natural Resources Division in FY 2007, which should increase the number of inspections performed in the future.

Figure 6. Seven-Year Trend in the Number of Annual Construction Site Inspections



In FY 2007, 366 citizen complaints relating to soil erosion and drainage problems were investigated and resolved by DDOE.

DDOE also inspected stormwater management facilities within the District in FY 2007. A total of 311 SWM facilities were inspected and 228 post-maintenance inspections occurred to ensure proper maintenance of the facilities.

Figure 8 shows the trend in the number of SWM facilities inspected each year. Over the past six years, the number of SWM facility inspections has remained relatively constant.

Loading estimates are prepared as part of the plan review process as detailed in the *Stormwater Management Guidebook, 2003.* A copy of the current guidebook was provided as an attachment to the 2007 Annual Report. Plan review, site inspection and loading estimates are required for commercial, residential, and road development land uses.

Figure 7. Seven-Year Trend in Annual Enforcement Actions

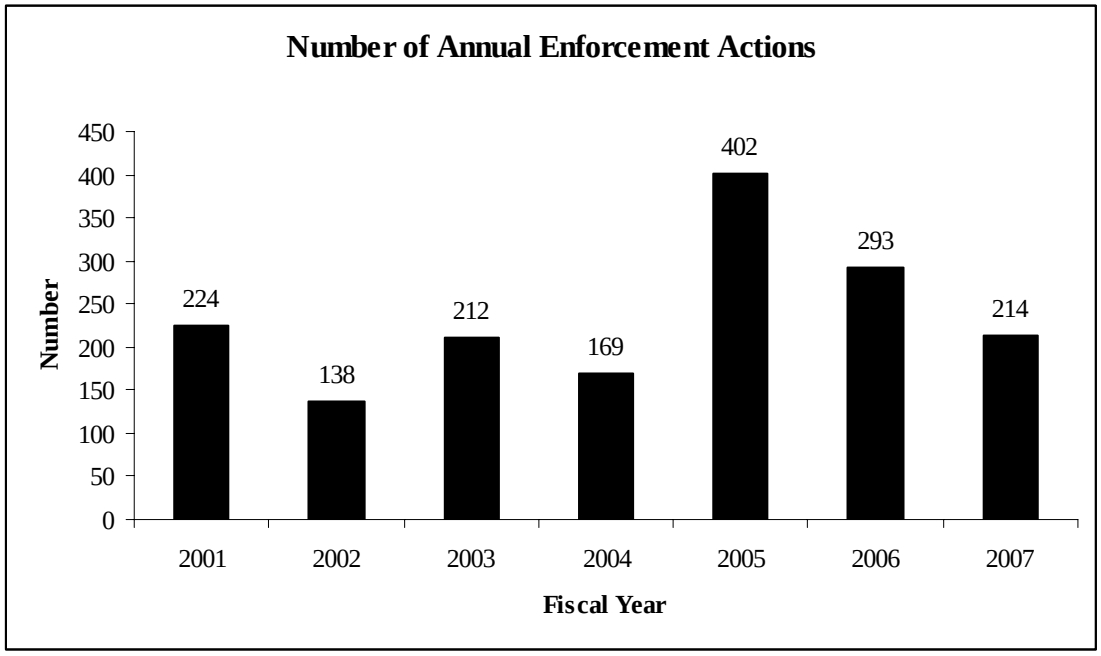
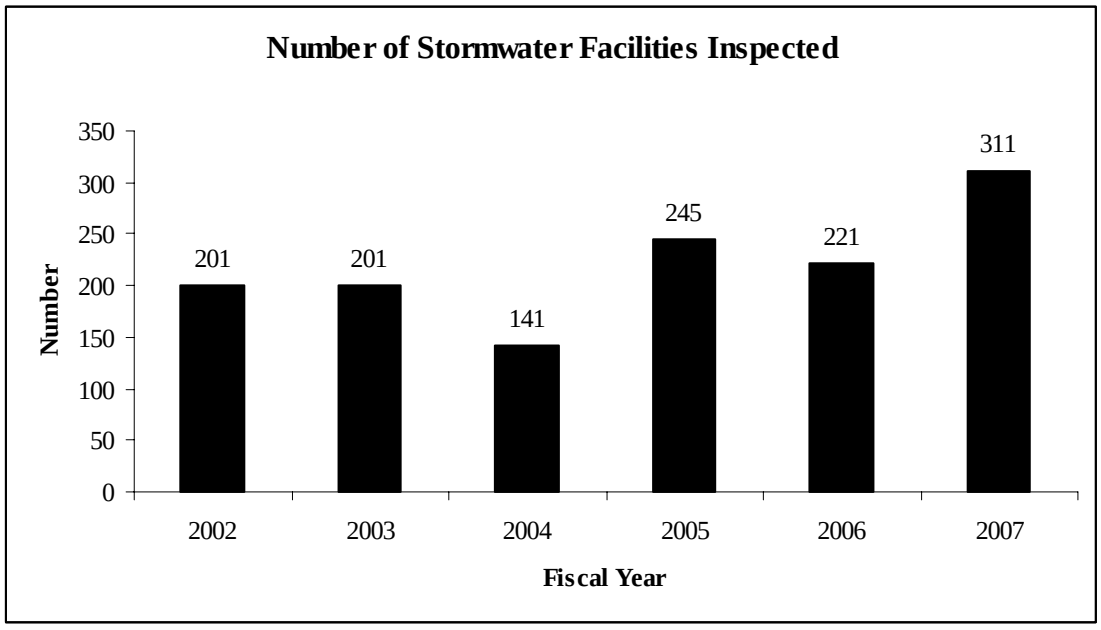


Figure 8. Six-Year Trend for Stormwater Facility Inspections



FY 2008 Goals: The District will continue inspections of commercial, residential, and road construction projects for the maintenance and implementation of erosion control devices and BMPs. DDOE will continue to track SWM facilities inspected and their BMPs through the automated database system.

Preventive Maintenance Inspections for Stormwater Management Facilities

Performance Standard: The District conducts inspections and maintenance of District SWM facilities.

The District continued inspections and necessary maintenance of all District SWM facilities. Coordination between District agencies will continue in conducting inspections, and the District will maintain the database of all SWM facilities and schedules of inspections.

WASA Department of Sewer Services continues to conduct inspections of stormwater control devices, including 15 stormwater pumping stations as part of their routine maintenance program. These maintenance inspections include greasing of bearings, draining condensate, exercising equipment, checking oil levels, visual inspections, and housekeeping.

WASA also performs maintenance on the storm sewer system. These maintenance activities include responding to reports on blockages or defects, the clearing of lateral channels, and ensuring that the outlet structures of the MS4 remain clear.

DCMR §534.2 states that "the owner of the property on which a stormwater management facility has been constructed shall maintain the facility in good condition, and promptly repair and restore whenever necessary all grade surfaces, walls, drains, structures, vegetation, erosion and sediment control measures, and other protective devices." A maintenance schedule for stormwater management facilities is to be developed and submitted as part of the facility's stormwater management plan. The District inspects the preventive maintenance of all infiltration systems, swales, retention, or detention structures. Inspections occur three times per year during the first five years of operation and at least once every two years thereafter.

FY 2007 Activities: During FY 2007, WASA performed inspected stormwater control devices and/or pumping stations on a regular basis as part of a set schedule. The SWM facilities inspected for maintenance are located within all four quadrants of the District.

DDOE maintains a SWM facility maintenance database system for tracking BMPs. The database enables more efficient scheduling and retrieval of maintenance records. Since FY 2006, DDOE has used the MAR geocoder program to provide accurate address data. DDOE will continue to use the MAR tool to verify the existing addresses of stormwater management facilities located in the maintenance database.

DDOE requires the submittal of a Declaration of Covenant for SWM for residential and business property owners as part of the approval process for new construction activities. These covenants state that the owner must provide a schedule of maintenance activities, the stormwater management devices will be inspected periodically, and the owner will be responsible for correcting any deficiencies noted, at the owner's expense. The SWM facilities, where Covenants were enforced, are located in all four quadrants of the District. It is estimated that approximately 57-60 percent of the facilities inspected for Covenants are within the MS4.

FY 2008 Goals: The District will continue inspections and maintenance of SWM facilities. DDOE will continue to require the submittal of a Declaration of Covenant for SWM facilities for residential and business property owners as part of the approval process for new construction activities.

Enforcement Plan

The Permit in Part III.B.11 requires that the Permittee develop and implement an enforcement plan for carrying out the objectives of the SWM Plan.

Performance Standard: The District implements the stormwater pollution control enforcement plan which emphasizes enforcement activities and resources, documentation of violations, and assessment of enforcement effectiveness.

Enforcement Activities and Resources

Performance Standard: The District uses a database system for SWM facilities maintenance inspection to track the use and maintenance of construction projects with SWM BMPs. The *Environmental Enforcement Process in the District of Columbia* details the written enforcement strategy concerning enforcement actions. A copy was provided as an attachment to the 2007 Annual Report.

DDOE has refined and updated the database system for SWM facilities maintenance inspection to include tracking of construction projects with SWM BMPs. The updated database system contains data for BMPs constructed since the inception of the program in 1988 and has enabled faster and more efficient rescheduling of inspection and retrieval of maintenance records.

FY 2007 Activities: As a result of illicit discharge investigations, DDOE personnel issued Notices of Violation, Notice of Infractions, and separate Site Directives for corrective actions last year. Furthermore, DDOE has allocated three environmental engineers and two environmental specialists in support of these activities. These staff members are fully dedicated to stormwater management issues related to implementation of the SWM Plan and the Permit.

FY 2008 Goals: The District will continue to update the SWM facilities maintenance database for tracking inspections and data on constructed BMPs.

Documentation of Violations

Performance Standard: The District maintains a list of violations of the DCMRs pertaining to stormwater and soil erosion. This listing is reviewed by DDOE staff for needed enforcement actions. The listing of violations and enforcement actions is used as a measure of the effectiveness of the Enforcement Program.

DDOE conducted inspections of construction sites for violations of water quality pollution and soil erosion and sediment control regulations.

FY 2008 Goals: The District will continue to provide for the updating and review of violations of the DCMRs pertaining to stormwater and soil erosion.

Assessment of Enforcement Effectiveness

Performance Standard: The District maintains tracking and effectiveness metrics of its inspection and enforcement actions.

Inspection procedures are outlined in the 21 DCMR § 534 *Water Quality and Pollution Regulations* and the *Nonpoint Source Management Plan* for the District (provided as attachments to the 2007 Annual Report). The legal basis for conducting inspections related to stormwater management is outlined in 21 DCMR § 534. Procedures for conducting an inspection are detailed in the *Standard Operating Procedures for Soil Erosion and Sedimentation Control and Storm Water Management Inspection* and the *Standard Operating Procedure for the Enforcement of Soil Erosion and Sedimentation Control and Storm Water Management Regulations* (both provided as attachments to the 2007 Annual Report).

DDOE has refined and updated the District's automated database system for tracking stormwater management facilities inspected for maintenance, including any tracking of construction projects with stormwater management BMPs. As previously discussed earlier in this Section, the updated database system contains data for BMPs constructed since the inception of the program in 1988 and has enabled faster and more efficient rescheduling of inspection and retrieval of maintenance records. Additional refinements to the automatic database system were made in 2005 and include the use of an Excel database to track "Final Inspection" completion and "Final Inspection Notification Letters" to SWM applicants, as well as monitoring the receipt of "As-Built" plans for completed stormwater projects.

FY 2008 Goals: The District will continue inspections and to update the database system.

III.F.12 Public Education Program

The Permit in Part III.B.12 requires that the District develop a public education program to reduce pollutant loading from the MS4 to receiving waters.

The stormwater pollution control public education program entails a mixture of programs:

- Public web site development and update.
- Education and outreach.
- Household hazardous waste collection and disposal.
- Pesticides, fertilizer and pet wastes program.
- Industrial facility education program.
- Construction site operators' education program.
- Agency cooperation program.
- District-wide science fair: Stormwater Awareness Award.
- Library submittals.

Public Web Site Development

Performance Standard: The Stormwater Management Division maintains a public web site which seeks to discuss all pertinent aspects of the MS4.

FY 2007 Activities: With the transfer of the Stormwater Administration from WASA to DDOE in February of 2007, DDOE established a Stormwater Management Division section of its website. This includes several pages of background on the history of the Stormwater Management Division, the District's MS4 system, and the MS4 Permit. There are also links to report documents prepared by DDOE, an overview of each District Agency's stormwater activities, and a Frequently Asked Questions page. A GIS application is also linked which allows residents to determine what watershed and sewershed their address is located in. Finally, links are also included for other stormwater-related topics, such as the recently completed Stormwater Administration Study Report, the DC Council's Stormwater Management Task Force, and the Palisades Neighborhood Drainage Study.

FY 2008 Goals: DDOE will continue to update, add to, and refine the MS4 website to contain all relevant information including reports, accomplishments and fact sheets.

Education and Outreach

Performance Standard: The District provides environment and stormwater awareness outreach programs targeted to teachers, environmental educators and students throughout the District.

FY 2007 Activities: The FY 2007 outreach programs are described in detail below.

Meaningful Watershed Educational Experience

WPD has created two educational videos for teachers, environmental educators and school administrators. They both covered ways to provide students with a "Meaningful Watershed Educational Experience". One was done in a studio talk show format while the other one was shot in the field. These videos continued to be shown throughout the year on the D.C. Public Schools (DCPS) cable station channel 99.

Schoolyard Conservation Sites

DDOE continued to work with the Potomac Conservancy on the Schoolyard Conservation Site Program entitled "Greener Schools, Cleaner Water." The schoolyard sites selected for installation in the previous years were all completed. Five new sites are created annually, while the work on five previously selected sites is being completed. Details of the work on the sites are presented in the Agency Cooperation Program, Nonprofit/Environmental Group Partnerships section below.

Storm Drain Marker Program

DDOE hosted several volunteer efforts to install storm drain markers throughout the District. Through the DC Soil and Water Conservation District's Storm Drain Marker Program, over 2,000 storm drain markers have been installed by students and residents from 16 different organizations. In addition, DDOE has committed to install an additional 1,000 storm drain markers per year beginning in 2008.

Summer Environmental Education Enrichment Program

Six schools and 439 students participated in a Summer Environmental Education Program in the summer of 2007. In this program, DDOE conducted environmental education presentations in coordination with DC Public Schools aftercare program. These presentations included an exploration of soils, watersheds, and point and non-point sources of pollution.

Environmental Education Resource Center

During FY 2007, DDOE's Environmental Education Resource Center continued to provide resources and materials for teachers and other environmental educators to enhance classroom curricula and implement conservation projects.

Conservation Education (Project Learning Tree, Project WET, Project WILD)

These internationally recognized programs are utilized to train educators in innovative techniques for exploring a wide range of environmental concepts with students and teaching critical thinking skills that lead to environmental stewardship (grades K-12). In FY 2007, DDOE provided a minimum of six hours of training to 119 teachers on water, wetlands, schoolyard greening, and Project Learning Tree.

Pollution Prevention

DDOE issued several grants for support of the Clean Marina Program (below) and to implement IPM at schoolyards and community gardens. DPW distributed a monthly calendar that includes information regarding DPW's activities (household hazardous waste collection, leaf collection, block cleanups, etc.) to all District citizens.

Clean Marina Program

DDOE and the NPS-National Capital Region partner with marinas in the District to educate the public on environmentally responsible boating practices. The program encourages marina, boatyard, and boat club operators, as well as the boating public, to reduce pollution through maintenance, operation and storage of recreational vessels. In FY 2007, two new marinas were certified as participants in the Clean Marina Program, and three marinas were re-certified. DDOE and NPS also sponsored a Clean Marinas Workshop in September 2007. At this workshop, marina managers, boat clubs, and District boaters received presentations and demonstrations of oil absorbent materials and dye tabs for detecting leaks from marine sanitation devices.

Schoolyard Habitats Program

DDOE continues to work with DCPS representatives to maintain and utilize schoolyard habitats. To date, DDOE has enrolled 21 schools that are at various stages of constructing schoolyard habitats. In addition, the new schools enrolled with the Greener Schools, Cleaner Water Program are enrolled to plan and construct schoolyard habitats.

Greener Schools, Cleaner Water Program

In FY 2007, DDOE work with five new schools selected for the Greener Schools, Cleaner Water Program. DDOE obtained 17 proposals from DCPS from which five

schools will be selected to receive funding for the implementation of their proposed projects.

RiverSmart Homes

In FY 2007, DDOE began planning the RiverSmart Homes Program that will offer incentives to homeowners for implementing various practices (installation of rain barrels and rain gardens, planting large trees, replacing impervious surfaces with pervious surfaces, etc.) in their yards that will reduce stormwater runoff. Efforts to date on this program are described in more detail in Section III.F.1. DDOE is currently planning a pilot-phase implementation of the program in Pope Branch. DDOE intends to offer the program city-wide at a future date, based on lessons learned from the pilot phase.

Household Hazardous Waste Collection and Disposal

Performance Standard: The District maintains a household hazardous waste collection and disposal program.

The District now maintains a permanent household hazardous waste collection facility. The District promoted the collection and disposal of household hazardous waste through collection days previously discussed in Section III.F.10. These activities are promoted through the use of a public education pamphlet and press releases discussing solid and household hazardous waste.

FY 2008 Goals: The District will continue to provide educational opportunities to District residents to properly dispose of and ultimately reduce the amount of household hazardous waste and to operate a permanent household hazardous waste facility.

Pesticides, Fertilizer, and Pet Wastes Education Program

Performance Standard: The District continues to provide educational materials as part of its IPM/Nutrient Management Program.

Pesticides: DDOE has developed an education and outreach program entitled “Integrated Pest Management/Nutrient Management.” The purpose of the program is to better inform the public on the proper use and disposal of pesticides and on safer alternatives to pesticides. The programs provide education and outreach activities designed to educate citizens about environmentally sound practices with regard to the use of pesticides in the yard or garden and the introduction of “good” pests into the garden.

District residents are educated on the proper application of pesticides through the IPM. This program gives residents guidance on how to choose an appropriate pesticide, how to choose a pest control company, and what regulatory requirements exist regarding commercial companies applying pesticides. This pamphlet also informs residents that there is a water quality impact associated with the application of too much pesticide.

In FY 2007, DDOE developed an IPM campaign to inform gardeners within the District about Integrated Pest Management and its role in reducing non-point source pollution. As part of this campaign, presentations were delivered to audiences at community gardens and master gardening classes. In addition, DDOE developed "Green Gardening Tool Kits" containing gardening tools, a District-produced DVD on pest management, a soil test kit, online resource guide, and a folder of IPM materials. In FY 2007, 108 Green Gardening Tool Kits were distributed to attendees of IPM workshops.

Fertilizers: Through DDOE's nutrient management program, the public is educated about the proper amount of fertilizer to use on a lawn. In addition to fertilizer use, this program addresses the proper way to mow, the use of mulches and the effects of applying too much mulch.

In FY 2007, DDOE distributed educational materials such as Nonpoint Source brochures and videos that provide suggestions on proper lawn fertilization, disposal of household waste, and application of pesticides and herbicides. The materials were primarily distributed through the Environmental Resource Center at environmental events where the target audience is teachers and District residents.

Pet Wastes: DDOE has developed an education and outreach program entitled "Scoop Your Pet's Poop." This program is designed to inform citizens of their legal obligation to manage their pet's waste and to explain the reasons why it is important to do so. Currently there are laws in the District requiring pet owners to remove animal wastes. A brochure outlining the requirement of the law is available to registered pet owners to inform them that runoff from animal waste is a source of nutrient pollution in the waters of the District.

In FY 2007, DDOE continued to distribute Pooper Scooper brochures concerning pet wastes to DPR, the DC Animal Shelter, veterinarian offices, Martin Luther King, Jr. Public Library, public events, and teacher training workshops.

FY 2008 Goals: The District will continue to educate District residents on the proper use and disposal of pesticides and fertilizers as well as the proper disposal of pet wastes through the "Pooper Scooper" Program. The IPM program will also involve presentations to staff members at DC Parks and Recreation facilities in FY 2008.

Industrial Facilities Education Program

Performance Standard: The District provides industrial facilities with educational materials, seminars and conferences regarding the proper handling and storage of chemicals.

FY 2007 Activities: The District continued the industrial facility outreach program including the distribution of pamphlets on preventing discharges to Hickey Run. DDOE personnel used inspections to promote awareness of the proper methods of chemical storage. Based on what they observe on-site, inspectors can make facility-specific recommendations to improve their compliance with stormwater regulations.

FY 2008 Goals: The District will continue to disseminate educational materials and information through seminars and workshops to the industrial facilities within the MS4 drainage area.

Construction Site Operators' Education Program

Performance Standard: The District provides educational materials to construction site operators.

Educational training for construction site operators is conducted during the site inspection process. This training includes distribution of the District's *Stormwater Management Guidebook*s and the *Erosion & Sediment Control Handbook* (provided as attachments to the 2007 Annual Report), and addresses particular needs and questions of the operators. These books outline the regulatory requirements of the District for construction activity.

FY 2007 Activities: In FY 2007, DDOE continued to distribute guidance manuals demonstrating the proper maintenance of sand filter water quality structures and copies of a video that illustrates the proper maintenance of the sand filter, which is a commonly used BMP on construction sites. The videos were distributed to property management companies, SWM facility maintenance service providers, and individual building engineers and property managers.

DDOE maintained a list of qualified stormwater management facility maintenance contractors registered to do business in the District. The list is made available to all persons responsible for the maintenance of individually owned private stormwater management facilities. To ensure proper maintenance of stormwater management facilities, DDOE established inspection procedure guidelines as required by 21 DCMR § 534.1. DDOE policy requires the submission and approval of a work plan before restorative maintenance of the filter bed of any District sand filter facility can proceed.

FY 2008 Goals: The District will continue to provide educational materials to construction site operators and to enforce the inspection procedure guidelines set forth in 21 DCMR § 534.1.

Agency Cooperation Education Program

Performance Standard: District agencies work with local, regional, and federal government agencies, non-governmental agencies, and universities to prepare, promote, and distribute public educational materials.

The District conducted public education programs to address 40 CFR 122.26 topics. The District developed public education materials in coordination with other agencies.

The District continues to maintain partnership arrangements with regional and local organizations. A thorough discussion of partnerships and cooperative efforts, including public education, between the DDOE and other federal, regional, and local agencies and organizations appears in the *Nonpoint Source Management Plan II*. These partnerships help promote stormwater pollution control issues.

Regional Organizations: District agencies are currently working with the Interstate Commission on the Potomac River Basin (ICPRB), the Metropolitan Washington Council of Governments, and the Anacostia Watershed Restoration Committee (AWRC). These agencies meet regularly.

District agencies and the ICPRB have identified and developed information on toxic substances problems, and in FY 2007 they completed and submitted to EPA for approval a TMDL for polychlorinated biphenyls (PCBs). DDOE continues working with the AWRC and other agencies to reduce trash and improve water quality, wetlands, forest cover, and ecological integrity of fish habitat in the Anacostia watershed. DDOE is monitoring restored wetlands for vegetation type and coverage. This data is being collected twice per year by DDOE and U.S. Geological Survey (USGS) and is analyzed

by USGS. DDOE also continued working with the State of Maryland, Prince George's and Montgomery Counties, and EPA Region III to develop a trash management plan.

Local and Federal Government Agencies: EPA is providing technical and program support to the Nonpoint Source programs of the District.

Watts Branch Stream Restoration: DDOE continued to work with the USFWS on the stream restoration plans for Watts Branch. In FY 2007, the 90 percent design was completed by USFWS. DDOE received a Corps of Engineers nationwide permit and an associated water quality certification during this reporting period. In addition, WASA agreed to perform sanitary sewer line repairs in the vicinity of the restoration project. When combined with the stream restoration work, this will result in significantly improved water quality.

Pope Branch Stream Restoration: Work continued on the Pope Branch stream restoration project in FY 2007. A contract was awarded for the design of the restoration project. As of the end of FY 2007, the 30 percent design had been completed. Design work will be finalized and construction will begin in subsequent Fiscal Years. DDOE and other partners (WASA and DPR) continued to attend regular meetings with community representatives to keep them apprised of the status of the work.

Other Agencies

DDOE works with NPS to maintain federal land holdings that border District waterways. In FY 2007, NPS and DDOE coordinated to monitor previously completed restoration work at the Kingman Lake Wetland, Kenilworth Marsh, Anacostia Fringe Wetlands, and Lower Anacostia Park. NPS also conducted invasive plant removal at these sites. In addition, work on the Fort DuPont BMP installations was completed in FY 2007.

USACE was involved in the restoration activities at the Kingman Lake Wetland, Kenilworth Marsh, Anacostia Fringe Wetlands, lower Anacostia Park Habitat Restoration, and debris removal from the Anacostia River.

USGS maintained gauging stations along Rock Creek and Watts Branch that provide data for the discharge monitoring program described in Section III.D of this report.

Universities

Universities in the District provided research and support services to the MS4 programs of the District government. These services included assessment of petroleum and hydrocarbons in groundwater, groundwater hydrology and wetlands, toxic organic compounds, educational videos and projects on nonpoint sources and pollution prevention. In addition, they provided interns for public educational and biological monitoring programs.

Nonprofit/Environmental Group Partnerships

Community Resources/DC Greenworks

In FY 2007, a grant was awarded to DC Greenworks for a green roof incentive program. This program will operate as a subsidy, providing $3 per square foot to defray the costs of installing green roofs on selected projects.

The Potomac Conservancy

In partnership with the Potomac Conservancy and using federal funds, DDOE continued installing schoolyard conservation sites at schools throughout the District. Teachers at each school were trained in watershed education, LID, conservation landscaping, and procedures for effectively implementing environmental curricula. DDOE worked with the Potomac Conservancy to install conservation sites at District schools during FY 2007. The teachers received training and curricula on nonpoint source pollution and its effects on the Chesapeake Bay, as well as information on how to design and install garden habitats and utilize them for teaching purposes.

In FY 2007, schools in the District had participated in the Schoolyard Conservation Site program through a two-year grant: LaSalle Elementary School, Cesar Chavez Public Charter High School, Kamit Charter High School, and Amidon Elementary School.

LaSalle Elementary School installed a butterfly garden in the front of the school building using plants native to the Chesapeake Bay region. A memorial garden space was created on the side of the school to provide shade and space for outdoor classes. A French drain system was constructed allowing stormwater runoff from the sidewalks' impervious surface to be treated naturally by a constructed wetland. LaSalle is working to become one of the most environmentally friendly schools in the District and has received an LID grant to install a green roof.

Cesar Chavez Public Charter School provides a good example of what can be done to transform an outdoor learning space at a new or renovated school. A number of small trees, shrubs, and perennials to attract birds and butterflies were planted. A stone trail was developed from the walkways to the garden, while benches and picnic tables have encouraged students and staff to use the space for observation and journaling. Future plans include trees for shade, a composting program, and a small wetland area.

Students at Kamit Charter High School held a community action day on September 21. At this event, students removed English Ivy, trash and weeds in preparation for creating a courtyard conservation site.

At Amidon Elementary School, an area surrounding a large maple tree was rehabilitated and planted with shade tolerant grass to create a new reading circle. Small trees and shrubs were planted in front of the school. A rain garden was installed in the conservation site paddock and planted with native species. A butterfly garden and a sensory garden of plants that appeal to the senses of touch and smell were planted, as well. Future plans call for the installation of benches, tables, and an earth box garden.

Anacostia Watershed Society

DDOE worked with AWS to provide extensive public outreach on LID and Anacostia River water quality in the Anacostia Gateway neighborhood.

Following a FY 2005 grant award to the AWS by DDOE to educate the Anacostia community about LIDs and install a rain garden, the plans for the rain garden have been postponed. AWS, NPS, WASA and DDOT worked together to design a rain garden at the entrance to Anacostia National Park. The installation has been delayed while DDOT realigns a road overpass in the immediate vicinity of the initial chosen location. A new location for the rain garden will be determined after the realignment is complete.

Keep Washington Beautiful

DPW participates as a member of the Board of Keep Washington Beautiful providing planning and support of major events. Through their Helping Hands Program, DPW also acts as a year-round resource distributing kits for neighborhood groups committed to keeping their communities clean through block-party cleanup events. DPW provides packers and sweepers in support of community cleanups.

Pope Branch Citizens Group

The Pope Branch Citizens Group continued to work with District government agencies on the Pope Branch stream and sewer line restoration project. They organized regular meetings and took an active interest in DDOE funded bioretention retrofits in the watershed. The group also agreed to maintain these facilities for DPR. The Pope Branch Citizens Group worked to improve water quality along Pope Branch by participating in cleanup events organized by other local non-profit organizations such as Earth Conservation Corps.

District-Wide Science Fair: Stormwater Awareness Award

In 2005, the MS4 Task Force established a Stormwater Awareness Award as part of an ongoing effort to educate citizens about stormwater issues facing the District. The intent of the award was to stimulate interest among students and teachers in stormwater issues. The award is given to one student each from the middle school and high school levels whose science project best demonstrates stormwater-related issues such as water quality degradation, sediment transport, and biological/ecological impacts in the District.

The 61st Annual D.C. Math, Science and Technology Fair was held on March 17, 2007 at McKinley Technology High School. The D.C. Science Fair showcases some of the best works by students of public, private, parochial, and charter schools in the District. Members of the MS4 Task Force and DDOE staff participated in judging student projects and presenting cash awards to each of the winners.

From the Junior Division, the award was presented to a student from Bridges Academy who studied the connections between soil erosion and stormwater runoff. From the Senior Division, a student from School Without Walls was selected for a study entitled "Waste in Water." The Junior and Senior Division award winners received cash prizes of $100 and $200, respectively, along with certificates of achievement.

Library Submittals

Performance Standard: The District places all Permit records and documents on file with the public library for use by the general public.

The Permittee has established a system to ensure that Permit records and documents are available for public review in a single location at the Martin Luther King, Jr. Public Library.

FY 2007 Activities: Submittals included:

- All annual and semi-annual reports.
- Annual Implementation Plans and the specific TMDL Implementation Plans for the Anacostia and Rock Creek Watersheds.
- Annual Discharge Monitoring Report.
- A copy of all IPM and nutrient management information on file.

FY 2008 Goals: DDOE will maintain the same level of submittals to the Martin Luther King, Jr. Public Library. In addition, all documents will be available on DDOE's Stormwater Management Division website.

III.G Total Maximum Daily Load Waste Load Allocation Implementation Plans

Part IX.B of the Permit requires the District to submit implementation plans to reduce discharges consistent with any applicable EPA-approved WLA component of any established TMDL.

The Permit specified that TMDL WLA Implementation Plans be submitted to EPA for the Anacostia and Rock Creek watersheds. These Plans were completed in 2005.

The Annual Implementation Plans summarize the tasks conducted by the District to control pollutants in stormwater discharged from the MS4. The 2007 Implementation Plan, which was completed in FY 2007, includes budgetary analysis and planned activities for two fiscal years: FY 2008 and FY 2009, which cover the period October 01, 2007 through September 30, 2009.

During FY 2007, TMDL WLA Implementation Plan activities were underway as listed below:

Street Sweeping

- DPW continued its street sweeping activities, and added six new high-efficiency road sweepers to the fleet.

Catch Basin Cleaning

- WASA continued ongoing activities at their current level; no new activities were planned.

Household Hazardous Waste

- DPW managed the collection and disposal of 274 55-gallon barrels of household hazardous waste and 65 tons of unwanted electronics for recycling.

Inspection and Enforcement

- DDOE continued searching for illicit discharges in the field in response to complaints, performing visual inspections of selected outfalls, and working with WASA and/or other responsible parties to ensure the correction of illicit discharges.

- DDOE continued to prevent illicit discharges by providing on-site recommendations to facilities and participating in public education and outreach events, such as the Annual Anacostia Environmental Fair and Earth Day.

- DDOE continued:

  - Incorporating updated mapping layers into the GIS,
  - Incorporating the MS4 outfall/infrastructure verification data into the GIS,
  - Combining updated industrial facility location data into the GIS (based on field verification for 60 facilities within the MS4 service area that are part of NPDES, CERCLA, and/or RCRA databases), and
  - Generating maps to support field investigations.

Constructed LIDs and BMPs

- DDOT continued to strengthen its erosion and sediment control program, and conducted training for construction staff and inspectors.

- DDOT continued the Anacostia Riverwalk Trail construction project. As part of the project, DDOT will install six bioretention cells and approximately 900 feet of bioswales.

- DDOT completed design and installation of the Brine Manufacture facility.

- DDOT completed the design and installation of a vegetated swale on I-295 near the Malcolm X overpass to remove roadway pollutants.

- DDOT initiated construction on the Watts Branch Bicycle Trail, a portion of which will remove paved surfaces and install BMPs and LID stormwater controls.

III.H Program Funding

The District's Stormwater Permit Compliance Amendment Act of 2000 established the Stormwater Permit Compliance Enterprise Fund to finance the Stormwater Administration's MS4 Permit implementation activities. To capitalize the Enterprise Fund, the Act authorized WASA to collect a stormwater fee of $7.00 per year from single-family water and sewer customers, 1.4 percent of the water rate from multi-family residential water and sewer customers, and 2.0 percent of the water rate charged to commercial, industrial, federal, and municipal customers.

WASA began charging the stormwater fee with the billing cycle that started July 1, 2001. Annual income from the fee is approximately $3.1 million per year. Income from the Enterprise Fund is available to any District agency for costs incurred to comply with the terms of the Permit, including administration, operations and capital projects over and above the costs incurred in April 2000.

The 2004 Permit requires significant new activities, with its emphasis shifting from planning (in the first NPDES permit) to implementation of plans submitted by the District. Furthermore, the 2007 Permit Enhancement Agreement increases the detail and specificity of permit conditions, providing for greater accountability and the implementation of additional activities. The cost estimate to implement the 2004 Permit was approximately $7.2 million per year. As modified by the Permit Enhancement Agreement, it is currently estimated that approximately $13 million per year will be required beginning in FY 2009. The Enterprise Fund budget for FY 2007 was $6.7 million. The current revenue from the stormwater user fee (approximately $3.1 million per year) will no longer sustain these activities.

Accordingly, DDOE has been working with the DC Council and DC WASA to enact the necessary legislative and regulatory changes required to ensure adequate funding of the MS4 Program. A stakeholder Task Force convened by the Council was tasked with making legislative recommendations on a number of stormwater-related topics, including the adequacy of funding mechanisms for stormwater programs. Among their recommendations were to base the District's stormwater fee on impervious cover, and to provide the DDOE Director with authority to adjust stormwater fees as necessary. These recommendations are currently working their way through the legislative process, but

should ensure that DDOE has adequate funding to implement the MS4 Permit beginning in FY 2009.

A cost benefit analysis of current and planned MS4 permit activities is included in the 2008 Implementation Plan submitted together with this report. The Implementation Plan explains the activities and anticipated budgets planned for FY 2009. Implementation of the budgeted activities outlined in the 2008 Implementation Plan will substantively fulfill the requirements of the current Permit. The plan will continue current activities to manage stormwater pollution and encourage improved stormwater management techniques, while providing the organization, legal framework, technical evaluation, and specific data necessary to ensure progress and track improvement in the quality of stormwater discharged from the MS4. Table 16 provides a summary of the Enterprise Fund expenditures by agency for FY 2001-FY 2007 for Permit-required programs.

Table 16. Summary of Enterprise Fund Expenditures for FY 2001- FY 2006 for Permit-required Programs.

Agency	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Total
DOH/ DDOE	0	0	$27,656	$210,331	$748,371	$263,643	$1,049,248	$2,299,249
DDOT	-	-	0	0	$91,732	$350,240	$1,016,050	$1,458,022
DPW	$191,148	$550,379	$567,297	$674,213	$490,715	$922,089	$1,373,723	$4,769,564
WASA	$135,320	$526,118	$843,945	$654,475	$1,253,434	$1,120,603	$1,477,686	$6,011,581
Total	$326,468	$1,076,497	$1,438,898	$1,539,019	$2,584,252	2,656,575	$4,916,707	$14,538,416

III.I Assessment of Controls

Assessing the effects of the SWM program in reducing pollution and achieving the requirements of the CWA involves a variety of measurement metrics and processes. According to EPA's *Guidance Manual For The Preparation Of Part 2 Of The NPDES Permit Applications For Discharges From Municipal Separate Storm Sewer Systems* (Attachment A-8 on the CD), there are two ways to assess the SWM program. They are:

1. Direct Measurement, which includes the number of BMPs installed, removal efficiencies, stormwater volume reduction, event mean concentration reduction, and estimated pollutant loading reduction; and

2. Indirect Measurement, which includes but is not limited to, the amount of household hazardous waste collected, number of public hearings and attendance at

these hearings, number of spill cleanups, number of sewer inlet stencils, number of educational brochures distributed, and number of erosion and sediment control permits issued.

In order to help provide direct assessment of the SWM program impact on water quality, the District is continuing its long-term monitoring program. The program rotates stormwater sampling from the Potomac watershed to the Anacostia watershed to the Rock Creek watershed on an annual rotation. By focusing monitoring in one watershed during a given year, a more complete measure of pollutant loading from that watershed is obtained.

Within each watershed, DDOE has selected outfalls that are representative of the MS4 for inclusion in the discharge monitoring program. By monitoring representative outfalls, an economy of time, effort, and resources can be made in assessing the impacts of the SWM program on pollutant discharge from the MS4 as a whole. Programs such as removing illicit connections, improved erosion and sediment controls for construction sites, and refurbishment of municipal waste transfer and salt storage areas will result in immediate and predictable reductions to pollutant loading to stormwater runoff in a known sewershed. Such measures require monitoring data and runoff modeling to quantify results.

Monitoring provides measurement of the pollutant levels in a watershed so as to evaluate the removal of pollutants by structural BMPs. These BMPs may include LID techniques, catch basin filters and/or inserts, oil and grease traps and flow reduction devices incorporated by new construction and redevelopment throughout the District. These structures are placed on individual sites by residents, businesses, and federal facilities and are designed to control the water flow and pollutants from the land area of that specific site. A reduction of pollutants at a monitoring site cannot be expected until after a significant amount of the monitored watershed area is controlled by BMPs.

The pollutant removal efficiency of a BMP is typically expressed as a percentage reduction in the concentration of a particular pollutant. In order to evaluate the effect of a BMP, knowledge of the pollutant level (in the water flowing from the site) prior to BMP construction is required. After construction, monitoring data should provide a new measure of the level of the pollutant so that a percentage reduction can be estimated. Examples of this may be a 70 percent reduction of oil and grease in a BMP installed near an automotive repair shop, or 80 percent reduction of floatable trash (total suspended solids) in a BMP near a public park area.

Progress of the SWM program under the SWM plan can also be assessed indirectly utilizing statistics regarding stormwater management activities reported by District agencies. While these measures are qualitative and not quantitative, the level of effort, equipment and manpower for each SWM activity under the SWM plan help to provide indirect measurement of pollution reduction achieved. Programs such as public education and contractor and equipment operator training produce effects that are dispersed over time and location. Impacts to the pollutant levels of the MS4 are usually indirectly measured by tracking the number of persons trained or through testing of comprehension.

Some SWM plan measures, such as long-term traffic and transit planning, and programs implemented by consumers like rain leader disconnection or other small-scale residential BMP installations, require significant time in planning and implementation. Thus, effects of today's work may not be measurable within the term of the current permit, or even the following one. Such measures, while quantifiable, require extended time intervals of measurement, or estimates of future implementation rates and efficiencies.

Methodologies for assessing the effects of the SWM program in reducing pollution and achieving the requirements of the Clean Water Act will continue to be developed and refined to provide a consistent measure of progress and success in the MS4 program.

III.J How This Program Meets Requirements of the Clean Water Act

Full implementation of this program is critical with respect to the CWA. The primary method by which the CWA imposes limitations on pollutant discharges is the permit program established under Section 402 and the NPDES program. Under the NPDES program, any person responsible for the discharge of a pollutant or pollutants into any waters of the United States from any point source must apply for and obtain a permit.

The District has developed watershed-specific implementation plans for two of the District's major watersheds, Anacostia River and Rock Creek. The implementation plans discuss the level of effort needed to meet the TMDL WLA determined for the watershed. These plans are being used as management tools to both direct future stormwater efforts and estimate the anticipated costs of the activities. In this manner, the implementation plans help to meet the requirements of the CWA.

III.J.1 Electronic Mapping and GIS Modeling

The District's stormwater model provides an important management tool for the coordination and evaluation of the stormwater pollution control effort. As the model

continues to develop, the geographic data coupled with the monitoring data will provide information regarding the District area of greatest need. In this manner, as a management tool, the stormwater model helps to meet the requirements of the CWA.

III.J.2 Commercial, Residential, and Federal and District Government Areas

The District is involved in a number of activities which promote stormwater control and quality in commercial, residential, federal and District government areas. These activities include the following:

- Legal and regulatory activities which encourage citizens to use stormwater BMPs on their properties.

- Routine cleaning and maintenance activities related to the property, streets, stormwater catch basins and MS4 system within the District. Focus is on maintaining a beautiful city that is both clean and capable of controlling inputs that might contribute to stormwater pollution.

- Promotion of BMPs such as functional landscaping, LIDs, and rain leader disconnects which property owners can use to further impact their stormwater runoff.

Together these activities seek to control potential pollutants before they enter the MS4 system (through sweeping and catch basin maintenance) and by promoting BMPs that reduce stormwater runoff at the point of entrance to the MS4 system.

III.J.3 Industrial Facilities

The District's management program for controlling stormwater pollution from industrial facilities seeks to encourage DC industries to control pollutants in their waste. Through routine inspections of industries with individual NPDES stormwater permits and monitoring and inspections throughout the District, the District enforces effluent restrictions to the MS4 to meet CWA requirements.

III.J.4 Construction Sites

The District seeks to control stormwater runoff from construction sites through the review of construction plans and the inspection of construction sites.

In the review process, the District is able to work with designers, promote stormwater BMPs, and encourage the use of stormwater quality controls on new and rebuild

construction sites. In the long term, the cumulative effect of maintained or decreased levels of impervious land use and installation of stormwater BMPs on a large number of sites will help to decrease the peak runoff rates and pollutants discharged to the District's waterways. In the short term, the use of erosion and sedimentation controls on construction sites will decrease the levels of soils exiting a construction site. Through inspections the District is able to enforce the use of erosion and sedimentation controls so as to better ensure the water quality of runoff from construction sites and monitor the location of increases or decreases of impervious area due to construction.

III.J.5 Flood Control Projects

The District's flood control program acts to maintain existing flood controls on its waterways (Watts Branch and the Potomac River Tidal Basin) and ongoing flood impact programs with FEMA. These activities seek to minimize flooding impacts due to large storm events.

III.J.6 Control of Pollutants from Municipal Landfills or Other Municipal Waste Facilities

There are no municipal landfills within the District. District municipal waste transfer facilities are managed to minimize stormwater impacts and keep up with increasing waste and recyclable loads. By removing the waste materials handled by the facilities, the amount of stormwater runoff pollutants potentially originating from these materials is reduced. In addition, stormwater BMPs (improved paving and drainage systems) installed in the transfer stations minimize pollutants in the runoff from the transfer facilities.

III.J.7 Pesticides, Herbicides, and Fertilizer Applications

The District's SWM program emphasizes control of specific pollutants found typically in herbicides, pesticides and fertilizers. The most effective program activity is proper application of the materials, which is taught through the IPM program. When the materials are properly applied, the levels of pollutant constituents in the stormwater runoff are reduced.

III.J.8 Deicing Activities

In implementing its deicing program, the District is reducing the amount of salt that is applied to the roadways in order to provide a safe passage for its citizens. These activities

directly impact the amount of salt in melted stormwater runoff entering into the MS4 and thereby help to meet the stormwater quality requirements of the CWA.

III.J.9 Snow Removal

In implementing its snow removal program, the District provides a safe passage for its citizens while using deicing materials that provide the minimum impact practicable to the melted stormwater runoff that enters the MS4. These activities directly impact the pollutant constituents in stormwater runoff entering into the MS4 and thereby help to meet the stormwater quality requirements of the CWA.

III.J.10 Illicit Discharges

The District's stormwater pollution control management program for the detection and removal of illicit discharges acts to eliminate illicit discharges of stormwater pollutants. The reduction of stormwater pollutants to the District's waterways helps to meet the water quality standards of the CWA.

III.J.11 Public Education

In urban areas, water pollution occurs when water, moving over land, picks up pollutants such as sediment, bacteria, nutrients, and toxicants and carries them to nearby waters. A cost-effective way to reduce water pollution from this stormwater runoff is by preventing the pollution at the onset. Pollution prevention is more cost effective than remediation. DDOE accepts the premise that most citizens would protect their environment given the correct information. DDOE considers effective environmental education a natural complement to its regulatory functions. Realizing that habits formed early in life are more enduring, the outreach program has a major youth component.

DDOE has raised awareness of point and nonpoint pollution sources in the community and pollution prevention methods through its outreach to educational and community groups. These educational efforts begin with teacher training days, community outreach, and various fairs and festivals in the District. This methodology exposes children at an early age to their impacts on stormwater surface runoff and discharges to the MS4 and District waterways. This effort seeks to develop a pollution prevention mindset and is more cost effective than developing ways of mitigating runoff.

Who to Call if You Have a Watershed or Water Quality Question:

District Agencies

District Department of the Environment (DDOE) 202-673-6700
- Stormwater Management Division 202-535-1722
- Watershed Protection Division
  - Sediment and Stormwater Technical Services Branch 202-535-2240
  - Inspection and Enforcement 202-535-2240
  - Non Point Source Management 202-535-2241
- Water Quality Division 202-535-2190

District Department of Public Works (DPW) 202-673-6833
- Bulk Trash Collection 202-727-1000
- Residential Trash Collection 202-727-1000
- Office of Recycling 202-645-7190

Natural Resources Administration 202-535-1660

District Department of Transportation 202-673-6813

Inter-District Agencies

Water and Sewer Authority (WASA) 202-787-2000
- Water and Sewer Emergency Hotline 202-612-3400
- Water Quality Division 202-612-3440
- Documents and Permits (for Waterlines) 202-787-2057

APPENDIX A

Memorandum of Understanding (MOU) with WASA, DDOT and DPW

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DISTRICT DEPARTMENT OF THE ENVIRONMENT
AND
THE DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

I. INTRODUCTION

This Memorandum of Understanding ("MOU") is entered into between the District of Columbia Department of the Environment, the buyer agency ("DDOE") and the District of Columbia Water and Sewer Authority (WASA), the seller agency ("WASA"), collectively referred to herein as the "Parties."

DDOE has requested the services of WASA to conduct activities to reduce pollutants to the District of Columbia, under the municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) Permit (MS4 Permit).

II. PROGRAM GOALS AND OBJECTIVES

MS4:	Municipal Separate Storm Sewer System
NPDES:	National Pollutant Discharge Elimination System
MS4 Permit:	Municipal Separate Storm Sewer System Permit
EPA:	Environmental Protection Agency

This MOU is entered into by and between DDOE and WASA to administer finances and reimbursements from the Storm Water Permit Compliance Enterprise Fund for activities conducted to reduce pollutants to the District of Columbia, under the municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) Permit (MS4 Permit):

WHEREAS, storm water discharges from the municipal separate storm sewer system (MS4) are authorized by the National Pollutant Discharge Elimination System (NPDES) Permit Number: DC0000221 issued to the District of Columbia as Permittee; and

WHEREAS, on August 19, 2004, the Environmental Protection Agency (EPA) re-issued the District's MS4 Permit Number: DC0000221 to authorize storm water discharges to the District of Columbia as Permittee, for a five-year term; and

WHEREAS, the MS4 Permit contains a compliance schedule which requires the District of Columbia to compile and submit information on pollution sources, significant changes in the identification of storm sewer system outfalls, and changes affecting the separate storm sewer system due to land use activities, population estimates, runoff characteristics, structural controls, reporting requirements and other matters as outlined in the MS4 Permit Implementation Plan, in order to reduce storm water pollution; and

WHEREAS, the District Department of Environment (DDOE), District Department of Transportation (DDOT), District Department of Public Works (DPW) and District of Columbia Water and Sewer Authority (WASA) have been assigned activities in the MS4 Implementation Plan; and

WHEREAS, the MS4 Task Force has been established with representatives from DDOE, DDOT, DPW and WASA to manage the activities required in the MS4 Permit, pursuant to the "Storm Water Permit Compliance Amendment Act of 2000"; D.C. Official Code § 34-2202.06a; and

WHEREAS, the Director of DDOE, or his designee, was made the Storm Water Administrator with primary responsibility for heading the Storm Water Administration, pursuant to the Establishment of the District Department of the Environment Act of 2005, D.C. Official Code § 8-151.03(b)(2); and

WHEREAS, the storm water management activities in the Implementation Plan are supported by fees collected by WASA in a Storm Water Compliance Enterprise Fund and provided to DDOE for the Storm Water Administrator to certify the sufficiency of the MS4 Permit budget requests; and

WHEREAS, DDOE and WASA acknowledge that it may be necessary for some or all parties in the MS4 Task Force to take action to amend, program, reprogram or supplement their respective budgets in order to lawfully undertake activities required by the MS4 permit and wish to set forth how these actions will be taken; and

WHEREAS, in the event that not all the projects can be funded, priority will be given to the projects that provide the most benefit in reducing storm water pollution and can be implemented most expeditiously as determined by DDOE and WASA ;and

Whereas, the Parties agree that this MOU does not supercede, modify. or amend any other agreements, MOUs, and/or Memoranda of Agreement (MOA) s previously entered into between the Parties;

NOW THEREFORE, in consideration of the promises mutually exchanged, the receipt and sufficiency of which are acknowledged by DDOE and WASA both agree to administer the Storm Water Permit Compliance Enterprise Fund (Storm Water Fund) as follows:

III. SCOPE OF SERVICES

III. SCOPE OF SERVICES

Pursuant to the applicable authorities and in the furtherance of the shared goals of the Parties to carry out the purposes of this MOU expeditiously and economically, the Parties do hereby agree:

A. RESPONSIBILITIES OF WASA:

1. WASA shall submit a proposed budget request based on the revised MS4 Permit for the following fiscal year to the Storm Water Administrator when requested. The Storm Water Administrator will use this information to transfer funds from the Storm Water Fund to WASA. Acceptance of this summary by the Storm Water Administrator does not constitute approval of the expenditure, but rather general agreement that activities of this type may be paid for through use of the Enterprise Fund.

2. For each activity included in the budget request WASA will detail:

   (a) A description of the activity to be funded;

   (b) MS4 Implementation Plan reference for the activity;

   (c) Explanation that this activity is above and beyond storm water activities carried out by the agency prior to April 19, 2000;

B. RESPONSIBILITIES OF DDOE:

1. The Storm Water Administrator may request additional information from WASA to justify the project or activity. Approval of the detailed budget request referenced in section A above by the Storm Water Administrator is pre-approval for transfer funds from DDOE to WASA for the expenditures conducted by WASA for the approved project or activity.

2. The Storm Water Administrator shall review and approve all programmatic changes or modifications that might affect the estimated quantity of pollutants removed or the cost-benefit analysis of the project or activity.

3. For FY 2008, the Storm Water Administrator shall administer the Storm Water Permit Compliance Enterprise Fund as follows:

   WASA.....$ 435,000

4. Payments for invoices shall be made by check, within 30 days of receipt of invoice and for up to amount stated above. The amount to be reimbursed will vary every fiscal year depending upon availability of funds. An addendum will be prepared at the beginning of each fiscal year to indicate the new amount for that fiscal year. WASA shall submit invoices to the storm water administrator explaining the amounts charged for that period. Advances to WASA shall not exceed the amount stated in the MOU. The invoices shall include:

   (a) Description of the activity performed;

   (b) Certification that all expenditures submitted for reimbursement are for direct MS4 permit compliance activities above and beyond storm water activities carried out by the agency prior to April 19, 2000;

   (c) Description of which pollutants were targeted for reduction by the project/activity; and

   (d) Copies of invoices and other applicable documentation demonstrating MS4 relevant work. Documentation to include invoices outlining storm water-related tasks completed, including description of task, hours incurred including date and time.

5. The Storm Water Administrator may request additional supporting documentation, if necessary, to evaluate the reconciliation or to detail how the activity addresses the overall Implementation Plan.

6. Transfer of funds is subject to total approved budget limits as well as cash or revenues available in fund.

7. Budget Authority approved by the Storm Water Administrator will be submitted within five business days of approval.

8. Any funds remaining in the MS4 Storm Water Compliance Enterprise Fund at the end of the fiscal year are to be redistributed to the member agencies of the MS4 Task Force based on need and projects that are ready to implement.

IV. DURATION OF MOU

A. The period of this MOU shall be retroactive from March 15, 2008, through September 30, 2009 unless terminated in writing by the Parties prior to the expiration.

B. The Parties may extend the term of this MOU by exercising a maximum of a one-year option period. Option periods may consist of a year, a fraction thereof, or multiple successive fractions of a year. DDOE shall

provide notice of its intent to renew an option period prior to the expiration of the MOU.

C. The exercise of an option period is subject to the availability of funds at the time of the exercise of the option.

V. AUTHORITY FOR MOU

DDOE is authorized to enter into this MOU pursuant to D.C. Official Code § 1-301.01(k).

VI. FUNDING PROVISIONS

A. COST OF SERVICES

1. Total cost for services under this MOU shall not exceed $435,000 for Fiscal Year 2008. This amount includes the collection of fees for FY 2008 as specified in the FY 2008 MS4 budget Funding for the services shall not exceed the actual cost of the goods or services, based on the actual cost spent by WASA and as reported in the bi-annual reconciliations.

2. In the event of termination of the MOU, payment to WASA shall be held in abeyance until all required fiscal reconciliation, but not longer than September 30 of the current fiscal year.

B. PAYMENT

1. Payment for all of the goods and services shall be made by check based on itemized invoices, within 30 days of receipt of invoice.

2. WASA shall submit itemized invoices for each completed service request, or monthly/quarterly reconciliations which shall explain the amounts billed for that period. The invoices shall include: (1) List of materials and their costs; (2) Labor costs including hourly rates for all laborers and (3) reasonable overhead OR Itemized monthly claims for reimbursement on actual counts taken daily at the point of service by the reimbursement category. DDOE shall formally notify WASA CFO or designee of any disallowed charges, with explanation or reason for disallowance.

3. Payments to WASA for the services to be performed/goods to be provided shall not exceed the amount of this MOU.

4. The Parties' Directors or their designees shall resolve all adjustments and disputes arising from services performed under this MOU. The Parties may mutually agree upon a third party employee of the District or an independent agency or authority of the District to resolve disputes in the event the Directors cannot resolve them.

C. ANTI-DEFICIENCY CONSIDERATIONS

The Parties acknowledge and agree that their respective obligations to fulfill financial obligations of any kind pursuant to any and all provisions of this MOU, or any subsequent agreement entered into by the parties pursuant to this MOU, are and shall remain subject to the provisions of (i) the federal Anti-Deficiency Act, 31 U.S.C. §§1341, 1342, 1349, 1351, (ii) the District of Columbia Anti-Deficiency Act, D.C. Official Code §§ 47-355.01-355.08 (2001), (iii) D.C. Official Code § 47-105 (2001), and (iv) D.C. Official Code § 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time, regardless of whether a particular obligation has been expressly so conditioned. WASA is required to provide services to the level at which funding is provided.

VII. COMPLIANCE AND MONITORING

As this MOU is funded by District of Columbia funds, WASA will be subject to scheduled and unscheduled monitoring reviews to ensure compliance with all applicable requirements.

VIII. RECORDS AND REPORTS

WASA shall maintain records and receipts for the expenditure of all funds provided for a period of no less than three years from the date of expiration or termination of the MOU and, upon the District of Columbia's request, make these documents available for inspection by duly authorized representatives of the buyer agency and other officials as may be specified by the District of Columbia at its sole discretion.

IX. CONFIDENTIAL INFORMATION

The Parties to this MOU will use, restrict, safeguard and dispose of all information related to services provided by this MOU, in accordance with all relevant federal and local statutes, regulations, policies. Information received by either Party in the performance of responsibilities associated with the performance of this MOU shall remain the property of the buyer agency.

X. TERMINATION

DDOE and WASA may terminate this MOU on the following grounds:

A. Lack of local funding,
B. Lack of a Congressionally approved budget,
C. Changes in applicable law
D. Changes in District or federal policy affecting these services, or
E. Changes in the structure or nature of this program or service

XI. NOTICE

The following individual is the DDOE contact point for this MOU and for submittal of invoices for reimbursement:

Julia Evans
Environmental Engineer
District Department of the Environment
51 N Street NE, 5th Floor
Room 5001-J
Washington, DC 20002
Phone 202-724-5348
Fax 202- 535-1364

The following individual is the WASA contact point for this MOU:

Olu Adebo
Acting Chief Financial Officer
DC Water and Sewer Authority
5000 Overlook Avenue, SW
Washington, DC 20032
Phone 202-787-2259
Fax 202- 787-2191
Oadebo@dcwasa.com

XI. MODIFICATIONS

The terms and conditions of this MOU may be modified only upon prior written agreement by the Parties.

XII. MISCELLANEOUS

The Parties shall comply with all applicable laws, rules and regulations whether now in force or hereafter enacted or promulgated.

IN WITNESS WHEREOF, the Parties hereto have executed this MOU as follows:

DISTRICT DEPARTMENT OF THE ENVIRONMENT

Date: 6/24/08

George S. Hawkins
Director

Date 6/20/08

Bicky Corman, Esq.
General Counsel

Date 6/23/08

Robert Jose
DDOE AFO

WATER AND SEWER AUTHORITY

Date: 7/16/08

Jerry Johnson
General Manager

Date: 7/15/08

Olu Adebo
Acting Chief Financial Officer

OFFICE OF CONTRACTING AND PROCUREMENT

Date: 7/25/08

David P. Gragan, CPPO
Chief Procurement Officer

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DISTRICT DEPARTMENT OF THE ENVIRONMENT
AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION

I. INTRODUCTION

This Memorandum of Understanding ("MOU") is entered into between the District of Columbia Department of the Environment, the buyer agency ("DDOE") and the Department of Transportation, the seller agency ("DDOT"), collectively referred to herein as the "Parties."

DDOE has requested the services of DDOT to conduct activities to reduce pollutants to the District of Columbia, under the municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) Permit (MS4 Permit).

II. PROGRAM GOALS AND OBJECTIVES

MS4:	Municipal Separate Storm Sewer System
NPDES:	National Pollutant Discharge Elimination System
MS4 Permit:	Municipal Separate Storm Sewer System Permit
EPA:	Environmental Protection Agency

This MOU is entered into by and between DDOE and DDOT to administer finances and reimbursements from the Storm Water Permit Compliance Enterprise Fund for activities conducted to reduce pollutants to the District of Columbia, under the municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) Permit (MS4 Permit) pursuant to D.C Official Code § 1-301.01 (k) and D.C Official Code § 34-220.06a;

WHEREAS, storm water discharges from the municipal separate storm sewer system (MS4) are authorized by the National Pollutant Discharge Elimination System (NPDES) Permit Number: DC0000221 issued to the District of Columbia as Permittee;

WHEREAS, on August 19, 2004, the Environmental Protection Agency (EPA) re-issued the District's MS4 Permit Number: DC0000221 to authorize storm water discharges to the District of Columbia as Permittee, for a five-year term;

WHEREAS, the MS4 Permit contains a compliance schedule which requires the District of Columbia to compile and submit information on pollution sources, significant changes in the identification of storm sewer system outfalls, and changes affecting the separate storm sewer system due to land use activities, population estimates, runoff characteristics, structural controls, reporting requirements and other matters as outlined in the MS4 Permit Implementation Plan, in order to reduce storm water pollution;

WHEREAS, the MS4 Permit outlines additional activities to be undertaken by the District;

WHEREAS, the District Department of Environment (DDOE), District Department of Transportation (DDOT), District Department of Public Works (DPW) and District of Columbia Water and Sewer Authority (WASA) have been assigned activities in the MS4 Implementation Plan;

WHEREAS, the MS4 Task Force has been established with representatives from DDOE, DDOT, DPW and WASA to manage the activities required in the MS4 Permit, pursuant to the "Storm Water Permit Compliance Amendment Act of 2000"; D.C. Official Code § 34-2202.06a;

WHEREAS, the Director of DDOE, or his designee, was made the Storm Water Administrator with primary responsibility for heading the Storm Water Administration, pursuant to the Establishment of the District Department of the Environment Act of 2005, D.C. Official Code § 8-151.03(b)(2);

WHEREAS, the storm water management activities in the Implementation Plan are supported by fees collected by WASA in a Storm Water Compliance Enterprise Fund and provided to DDOE for the Storm Water Administrator to certify the sufficiency of the MS4 Permit budget requests;

WHEREAS, DDOE and DDOT acknowledge that it may be necessary for some or all parties in the MS4 Task Force to take action to amend, program, reprogram or supplement their respective budgets in order to lawfully undertake activities required by the MS4 permit and wish to set forth how these actions will be taken; and

WHEREAS, in the event that not all the projects can be funded, priority will be given to the projects that provide the most benefit in reducing storm water pollution and can be implemented most expeditiously as determined by DDOE and DDOT.

NOW THEREFORE, in consideration of the promises mutually exchanged, the receipt and sufficiency of which are acknowledged by DDOE and DDOT both agree to administer the Storm Water Permit Compliance Enterprise Fund (Storm Water Fund) as follows:

III. SCOPE OF SERVICES

Pursuant to the applicable authorities and in the furtherance of the shared goals of the Parties to carry out the purposes of this MOU expeditiously and economically, the Parties do hereby agree:

A. RESPONSIBILITIES OF DDOT:

1. DDOT shall submit a proposed budget for the following fiscal year to the Storm Water Administrator by October 1 of each calendar year. Accordingly, as of this signing, DDOT submitted their proposed 2009 Fiscal Year Budget Request to the Storm Water Administrator by October 1, 2007. The Storm Water Administrator will use this information to program budget authority from the Storm Water Fund. Acceptance of this summary by the Storm Water Administrator does not constitute approval of the expenditure, but rather general agreement that activities of this type may be paid for through use of the Enterprise Fund.

2. DDOT shall submit a detailed Storm Water Fund budget report to the Storm Water Administrator no later than six-months prior to the beginning of the fiscal year covered by that request. The Storm Water Administrator will review and approve budget requests prior to transferring budget authority from DDOE's annual budget for the expected expenditures. For each activity included in the budget request DDOT will detail:

   (a) A description of the activity to be funded;

   (b) MS4 Implementation Plan reference for the activity;

   (c) MS4 Permit section reference for the activity;

   (d) Explanation that this activity is above and beyond storm water activities carried out by the agency prior to April 19, 2000;

   (e) Cost-benefit discussion including which pollutants are targeted for reduction by this project/activity, estimated reduction per year to be achieved, and estimated cost/pound of pollutant removed over the life of the project/activity; and a statement of whether the agency's proposed budget contains sufficient funds expressly dedicated to all MS4 Permit compliance activities.

B. RESPONSIBILITIES OF DDOE:

1. The Storm Water Administrator may request additional information from DDOT to justify the project or activity. Approval of the detailed budget request referenced in section A above by the Storm Water Administrator is pre-approval for transfer of budget authority from DDOE to DDOT for the expenditures conducted by DDOT for the approved project or activity.

2. The Storm Water Administrator shall review and approve all programmatic changes or modifications that might affect the estimated quantity of pollutants removed or the cost-benefit analysis of the project or activity.

3. In the event of a budget shortfall, the Storm Water Administrator shall allocate remaining funds giving priority to the projects that he or she determines would provide the most benefit in reducing storm water pollution. In the event that the Storm Water Administrator determines that the projected fiscal years revenues from the Storm Water Fund will be less than the anticipated costs of the Storm Water Administration, the Storm Water Administrator may request that DDOT make up the difference.

4. For FY 2008, the Storm Water Administrator shall administer the Storm Water Permit Compliance Enterprise Fund as follows:

   District Department of Transportation ..... $ 2,322,860

5. Payment for the MS4 agreement shall be made through an Intra-District advance by DDOE to DDOT in the amount stated above, $2,322,860. DDOT shall submit bi-annual reconciliations which shall explain the amounts charged for that period. Advances to DDOT shall not exceed the amount stated in the MOU. The reconciliations shall include:

   (a) Description of the activity performed;

   (b) Certification that all expenditures submitted for reimbursement are for direct MS4 permit compliance activities above and beyond storm water activities carried out by the agency prior to April 19, 2000;

   (c) Citation of the MS4 Permit section(s) reference for the activity;

   (d) Description of which pollutants were targeted for reduction by the project/activity; and

   (e) Copies of invoices and other applicable documentation demonstrating MS4 relevant work. Documentation to include invoices outlining storm water-related tasks completed, including description of task, hours incurred including date and time.

6. The Storm Water Administrator may request additional supporting documentation, if necessary, to evaluate the reconciliation or to detail how the activity addresses the overall Implementation Plan.

7. Budget Authority transmittal is subject to total approved budget limits as well as cash or revenues available in fund.

8. Budget Authority approved by the Storm Water Administrator will be submitted within five business days of approval.

9. Any funds remaining in the MS4 Storm Water Compliance Enterprise Fund at the end of the fiscal year are to be redistributed to the member agencies of the MS4 Task Force based on need and projects that are ready to implement.

IV. DURATION OF MOU

A. The period of this MOU shall be from February 1, 2008, through September 30, 2008, unless terminated in writing by the Parties prior to the expiration.

B. The Parties may extend the term of this MOU by exercising a maximum of a one-year option period. Option periods may consist of a year, a fraction thereof, or multiple successive fractions of a year. DDOE shall provide notice of its intent to renew an option period prior to the expiration of the MOU.

C. The exercise of an option period is subject to the availability of funds at the time of the exercise of the option.

V. AUTHORITY FOR MOU

The Parties are authorized to enter into this MOU pursuant to D.C. Official Code § 1-301.01(k).

VI. FUNDING PROVISIONS

A. COST OF SERVICES

1. Total cost for services under this MOU shall not exceed $2,322,860 for Fiscal Year 2008. Funding for the services shall not exceed the actual cost of the goods or services, **based on the actual cost spent by DDOT and as reported in the bi-annual reconciliations.**

2. In the event of termination of the MOU, payment to DDOT shall be held in abeyance until all required fiscal reconciliation, but not longer than September 30 of the current fiscal year.

B. PAYMENT

1. Payment for all of the goods and services shall be made through an Intra-District advance by DDOE to DDOT based on the total amount of this MOU.

2. DDOT shall submit itemized invoices for each completed service request, or monthly/quarterly reconciliations which shall explain the amounts billed for that period. The invoices shall include: (1) List of materials and their costs; (2) Labor costs including hourly rates for all laborers and (3) reasonable overhead OR Itemized monthly claims for reimbursement on actual counts taken daily at the point of service by the reimbursement category.

3. Advances to DDOT for the services to be performed/goods to be provided shall not exceed the amount of this MOU.

4. DDOT will relieve the advance and bill DDOE through the Intra-District process only for those goods or services actually provided pursuant to the terms of this MOU. DDOT will return any excess advance to DDOE by September 30 of the current fiscal year.

5. The Parties' Directors or their designees shall resolve all adjustments and disputes arising from services performed under this MOU. In the event that the Parties are unable to resolve a financial issue, the matter shall be referred to the D.C. Office of Financial Operations and Systems.

C. ANTI-DEFICIENCY CONSIDERATIONS

The Parties acknowledge and agree that their respective obligations to fulfill financial obligations of any kind pursuant to any and all provisions of this MOU, or any subsequent agreement entered into by the parties pursuant to this MOU, are and shall remain subject to the provisions of (i) the federal Anti-Deficiency Act, 31 U.S.C. §§1341, 1342, 1349, 1351, (ii) the District of Columbia Anti-Deficiency Act, D.C. Official Code §§ 47-355.01-355.08 (2001), (iii) D.C. Official Code § 47-105 (2001), and (iv) D.C. Official Code § 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time, regardless of whether a particular obligation has been expressly so conditioned.

VII. COMPLIANCE AND MONITORING

As this MOU is funded by District of Columbia funds, DDOT will be subject to scheduled and unscheduled monitoring reviews to ensure compliance with all applicable requirements.

VIII. RECORDS AND REPORTS

DDOT shall maintain records and receipts for the expenditure of all funds provided for a period of no less than three years from the date of expiration or termination of the MOU and, upon the District of Columbia's request, make these documents available for inspection by duly authorized representatives of the buyer agency and other officials as may be specified by the District of Columbia at its sole discretion.

IX. CONFIDENTIAL INFORMATION

The Parties to this MOU will use, restrict, safeguard and dispose of all information related to services provided by this MOU, in accordance with all relevant federal and local statutes, regulations, policies. Information received by either Party in the performance of responsibilities associated with the performance of this MOU shall remain the property of the buyer agency.

X. TERMINATION

Either Party may terminate this MOU in whole or in part by giving 30 calendar days advance written notice to the other Party.

XI. NOTICE

The following individuals are the contact points for each Party under this MOU:

Julia Evans
Environmental Engineer
District Department of the Environment
51 N Street NE, 5th Floor
Room 5001-J
Washington, DC 20002
Phone 202-724-5348
Fax 202- 535-1364

Jeffrey Seltzer
Supervisory Civil Engineer
District Department of Transportation
64 New York Avenue, NE
Washington, DC 20002
Phone 202-671-4607
Fax 202- 671-4710

XII. MODIFICATIONS

The terms and conditions of this MOU may be modified only upon prior written agreement by the Parties.

XIII. MISCELLANEOUS

The Parties shall comply with all applicable laws, rules and regulations whether now in force or hereafter enacted or promulgated.

IN WITNESS WHEREOF, the Parties hereto have executed this MOU as follows:

DISTRICT DEPARTMENT OF THE ENVIRONMENT

George S. Hawkins
Director

Date: 1/28/08

Bicky Corman, Esq.
General Counsel

Date 1/22/08

Chief Financial Officer

Date 1/29/08

DISTRICT DEPARTMENT OF TRANSPORTATION

Emeka C. Moneme
Director

Date: 2/26/08

Chief Financial Officer

Date: 2/27/2008

OFFICE OF CONTRACTING AND PROCUREMENT

David P. Gragan, CPPO
Chief Procurement Officer

Date 3/11/08

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DISTRICT DEPARTMENT OF THE ENVIRONMENT
THE DISTRICT DEPARTMENT OF PUBLIC WORKS
THE DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
AND
DEPARTMENT OF TRANSPORTATION
REGARDING MS4 STORMWATER PERMIT FISCAL ADMINISTRATION

THIS MEMORANDUM OF UNDERSTANDING (MOU) is entered into this 1st day of August 2007, by and between the District Department of the Environment (DDOE) and the District Department of Transportation (DDOT), the D.C. Water and Sewer Authority (WASA), and the Department of Public Works (DPW) to administer finances and reimbursements from the Storm Water Permit Compliance Enterprise Fund for activities conducted to reduce pollutants to the District of Columbia, under the municipal separate storm sewer system (MS4) National Pollution Discharge Elimination System (NPDES) Permit (MS4 Permit).

WHEREAS, storm water discharges from the municipal separate storm sewer system (MS4) are authorized by the National Pollution Discharge Elimination System (NPDES) Permit Number: DC0000221 issued to the District of Columbia as Permittee;

WHEREAS, on August 19, 2004, the Environmental Protection Agency (EPA) re-issued the District's MS4 Permit Number: DC0000221 to authorize storm water discharges to the District of Columbia as Permittee, for a five-year term;

WHEREAS, the MS4 Permit contains a compliance schedule which requires the District of Columbia to compile and submit information on pollution sources, significant changes in the identification of storm sewer system outfalls, and changes affecting the separate storm sewer system due to land use activities, population estimates, runoff characteristics, structural controls, reporting requirements and other matters as outlined in the MS4 Permit Implementation Plan, in order to reduce storm water pollution;

WHEREAS, the MS4 Permit outlines additional activities to be undertaken by the District;

WHEREAS, the above named agencies have been assigned activities in the MS4 Implementation Plan;

WHEREAS, the MS4 Task Force has been established with representatives from DDOE, DDOT, DPW, WASA to manage the activities required in the MS4 Permit, pursuant to the "Storm Water Permit Compliance Amendment Act of 2000"; D.C. Official Code § 34-2202.06a;

WHEREAS, the Director of DDOE, or his designee, was made the Storm Water Administrator with primary responsibility for heading the Storm Water Administration, pursuant to the Establishment of the District Department of the Environment Act of 2005, D.C. Official Code § 8-151.03(b)(2);

WHEREAS, the storm water management activities in the Implementation Plan are supported by fees collected by WASA in a Storm Water Compliance Enterprise Fund and provided to DDOE for the Storm Water Administrator to certify the sufficiency of the MS4 Permit budget requests;

WHEREAS, the parties acknowledge that it may be necessary for some or all parties to take action to amend, program, reprogram or supplement their respective budgets in order to lawfully undertake activities required by the MS4 permit and wish to set forth how these actions will be taken; and

WHEREAS, in the event that not all the projects can be funded, priority will be given to the projects that provide the most benefit in reducing storm water pollution.

NOW THEREFORE, in consideration of the promises mutually exchanged, the receipt and sufficiency of which are acknowledged by all, the parties agree to administer the Storm Water Permit Compliance Enterprise Fund (Storm Water Fund) as follows:

I. SCOPE OF SERVICES

1. Each agency, including DDOE, shall submit a proposed budget for the following fiscal year to the Storm Water Administrator by October 1 of each calendar year. Accordingly, as of this signing, each agency agrees to submit their proposed 2009 Fiscal Year Budget Request to the Storm Water Administrator by October 1, 2007. The Storm Water Administrator will use this information to program budget authority from the Storm Water Fund. Acceptance of this summary by the Storm Water Administrator does not constitute approval of the expenditure, but rather general agreement that activities of this type may be reimbursable from the Enterprise Fund.

2. Each agency, including DDOE, shall submit a detailed Storm Water Fund budget request to the Storm Water Administrator no later than six-months prior to the beginning of the fiscal year covered by that request. The Storm Water Administrator will review and approve budget requests prior to allocating funds in DDOE's annual budget for the expected reimbursement. For each activity included in the budget request the agency will detail:

   (a) A description of the activity to be funded;

   (b) MS4 Implementation Plan reference for the activity;

   (c) MS4 Permit section reference for the activity;

   (d) Explanation that this activity is above and beyond storm water activities carried out by the agency prior to April 19, 2000;

   (e) Cost-benefit discussion including which pollutants are targeted for reduction by this project/activity, estimated reduction per year to be achieved, and estimated cost/pound of pollutant removed over the life of the project/activity; and

   (f) A statement of whether the agency's proposed budget contains sufficient funds expressly dedicated to all MS4 Permit compliance activities.

3. The Storm Water Administrator may request additional information from the agency to justify the project/activity. Approval of the detailed budget request by the Storm Water Administrator is pre-approval for reimbursement for expenditures conducted by the agency for the approved project or activity.

4. The Storm Water Administrator shall review and approve all programmatic changes or modifications that might affect the estimated quantity of pollutants removed or the cost-benefit analysis of the project or activity.

5. In the event of a budget shortfall, the Storm Water Administrator shall allocate remaining funds giving priority to the projects that he or she determines would provide the most benefit in reducing storm water pollution. In the event that the Storm Water Administrator determines that the projected fiscal years revenues from the Storm Water Fund will be less than the anticipated costs of the Storm Water Administration, the Storm Water Administrator may request that DDOE, WASA, DDOT, and DPW make up the difference.

6. For FY 2007, the Storm Water Administrator shall administer the Storm Water Permit Compliance Enterprise Fund as follows:

Department of Public Works	$ 1,270,000
District Department of Transportation	$ 1,537,000
DC Water & Sewer Authority	$ 292,999
District Department of the Environment	$ 1,950,000

7. Each agency shall request reimbursement quarterly from the Storm Water Administrator for expenditures related only to complying with the MS4 permit. Reimbursement requests shall include:

   (a) Description of the activity performed;

   (b) Certification that all expenditures submitted for reimbursement are for direct MS4 permit compliance activities above and beyond storm water activities carried out by the agency prior to April 19, 2000;

   (c) Citation of the MS4 Permit section(s) reference for the activity;

   (d) Description of which pollutants were targeted for reduction by the project/activity; and

   (e) Copies of invoices and other applicable documentation demonstrating MS4 relevant work. Documentation to include invoices outlining storm water-related tasks completed, including description of task, hours incurred including date and time.

8. The Storm Water Administrator may request additional supporting documentation, as required, to evaluate the reimbursement request or to detail how the reimbursement request will address the overall agency Implementation Plan.

9. Reimbursements are subject to total approved budget limits as well as cash or revenues available in fund.

10. Requests approved by the DDOE will be submitted within five business days of approval by the Storm Water Administrator.

II. RESOLUTION OF DISPUTES

The Chief Financial Officer or the City Administrator shall resolve all disputes arising under this MOU.

III. EFFECTIVE DATE AND SPECIAL PROVISIONS FOR TERMINATION OF MOU

1. This MOU shall be effective as of August 1, 2007 through August 19, 2009, unless terminated in writing by the Parties prior to the expiration.

2. This MOU may be extended by agreement of all signatories.

3. DDOE may terminate this MOU on the following grounds:

    (a) Lack of local funding;

    (b) Changes in applicable law;

    (c) Changes in District or federal policy affecting these services;

    (d) Changes in the structure or nature of the MS4 Permit; and

    (e) Elimination of DDOE as the Storm Water Administrator or Storm Water Administration.

IV. COUNTERPARTS

This MOU may be executed in separate counterparts, each of which when so executed and delivered shall be an original, but all of which together shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have signed this MOU as of the day and year written above.

George S. Hawkins, Acting Director, DDOE — Date: 7/31/07

Emeka C. Moneme, Director, DDOT — Date

William O. Howland, Jr., Director, DPW — Date: 8-27-2007

Jerry N. Johnson, General Manager, DCWASA — Date

ADDENDUM TO THE MOU BETWEEN DPW AND DDOE DATED AUGUST 1, 2007 AND VALID UNTIL AUGUST 19, 2009

This is an addendum to the MOU between DPW and DDOE dated August 1, 2007 is to specify the amount to be reimbursed by DDOE to DPW from the Enterprise Fund (MS4 fund) for FY 2008. The original MOU was signed by Mr. George S. Hawkins, DDOE Director, on July 31, 2007 and is valid until August 19, 2009.

Replace item 6 of page 4 with the following paragraph:

For FY 2008, the Storm Water Administrator shall administer the Storm Water permit compliance fund as follows:

Department of Public Works ..... $ 1,135,800.00

DISTRICT DEPARTMENT OF THE ENVIRONMENT

2/4/08

George S. Hawkins, Director — Date

2/1/08

Robert Jose, AFO — Date

DISTRICT DEPARTMENT OF PUBLIC WORKS

2-3-2008

William O. Howland, Jr., Director — Date

APPENDIX B

Master LID Implementation Plan

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Potomac River					
Completed					
Throughout	Water Quality Catch Basin	22,500	0.52	Five installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width	DDOT
Pedestrian ROW between Galena & Dorsett Pl. NW.	Bioswales	6,000	0.14	Replaced paved ROW between properties with grassed swales.	WASA
3610 Brothers St.SE.	RiverSmart Home	3,000	0.07	Homowner incentive program includes up to five LID practices: Shade Tree planting; Lawn replacement w/Native plantings; Rain Barrels; Rain Gardens; Permeable Pavers.	
In Progress					
Consolidated Forensic Lab: 4th & School Sts. SW.	Green roof; Harvest/Reuse System; Curbside Bioretention/Tree Box; Permeable Paving	351,000	8.06	Environmental Flagship development to include State-Of-The-Art Energy efficiancy as well as on-site stormwater management approaches; going for LEED Gold.	OPM/DDOT
South Capital & Atlantic Sts. SW	Green Roof	12,870	0.30	Affordable Housing Project; new construction going for LEED Silver; Intensive & Extensive g. roofs; some available to residents and community.	DHCD/CDC
Potomac Ave. NW	Bioswales	15,000	0.34	Curbless road using existing grassed are for roadside runoff capture/treatment through soil ammendments and plantings as well as in-road cuts to direct runoff.	DDOT
Exploratory					
Q St.& Q Pl. Alley NW	Bioretention	8,000	0.18	Existing 12 ft alleyway closing to all but pedestrian traffic and converting into raingardens. Adjoining properties have signed support documents and files for permission with DDOT; supporting 501C has submitted grant applications to fund project.	DDOT
3901 Tunlaw Rd. NW.	Green Roof	4,200	0.10	Condominium needs to replace flat roof, Association interested in applying for the green subsidy once it is extended to the MS4 area (contact amendment under consideration)	
4001 Calvert St. NW (Stoddard Elementary)				School will under go complete site renovations; discussions under way to incorporate LID; going for LEED Silver.	OPEFM/ DCPS

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Rock Creek					
Completed					
Throughout	Water Quality Catch Basin	22,500	0.52	Five installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width	DDOT
1375 Missouri Ave. NW.	Green Roof	33,300	0.76	Extensive system installed on new school addition with flat roof	
East Beech Dr. NW.	Bioretention; Bioswales	15,000	0.34	1000 LF roadway runoff directed to roadside right of way (ROW) through curbcuts; western side	DDOT
3820 Van Ness Rd. NW.	RiverSmart Home	3,000	0.07	Homowner incentive program includes up to five LID practices: Shade Tree planting; Lawn replacement w/Native plantings; Rain Barrels; Rain Gardens; Permeable Pavers.	
In Progress					
Broad Branch Rd. NW.	Bioretention; Bioswales	30,000	0.69	5000 LF roadway runoff directed to roadside right of way (ROW) through curbcuts; assumes 20% capture	DDOT
Oregon Ave. NW.	Bioretention; Bioswales	36,000	0.83	6000 LF roadway runoff directed to roadside right of way (ROW) through curbcuts; assumes 20% capture	DDOT
Klingle Rd. NW.	Bioretention; Bioswales; Infiltration Trenches; Permeable Paving; Native & Tree Planting	30,000	0.69	Former road being reconstructed as pedestrian path with LID throughout	DDOT
UDC Van Ness Campus NW. (Connecticut Ave.)	Green roof; Harvest/Reuse System; Curbside Bioretention/Tree Box; Permeable Paving	56,000	1.29	Current brick/concrete plaza over parking garage is leaking and developing structural problems; Scope of Work being defined that includes rebuild of plaza to incorporate Green Roof and other LID technologies to retain on-site 30% more than stormwater permit requires.	OPM/DDOT
1700 Newton St. NW (Bancroft Elementary)	Bioretention; Harvest/Reuse; Permeable Paving	14,200	0.33	Installing cisterns to capture roo runoff and using water to drip irrigate raingardens installed in current lawn area; removing current asphalt, stabilising soils and installing permeable paving. Waiting on contract document signatures. Work to be executed by USDA/NRCS. Abuts NPS land.	OPEFM/DCPS/ NPS/NRCS

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Rock Creek					
Exploratory					
3100 Connecticut Ave. NW.	Green Roof	3,500	0.08	Condominium needs to replace flat roof, Association interested in applying for the green subsidy once it is extended to the MS4 area (contact amendment under consideration)	
Ashley Terrace NW.	Permeable Paving	6600	0.15	Potential Green Alley Site; current errosion and drainage problems investigated based on citizen complant.	DDOT
Klingle Rd. & Cathedral Ave. NW. (Tregaron Site)	Cistern; Bioretention	45,000	1.03	Privately held Historic Gardens open to the public is developing stormwater conservation to capture and reuse ~7000LF roadside runoff for irrigation needs.	DDOT
Tidal Anacostia					
Completed					
4529 Douglas St. NE.	RiverSmart Home	3,000	0.07	Homowner incentive program includes up to five LID practices: Shade Tree planting; Lawn replacement w/Native plantings; Rain Barrels; Rain Gardens; Permeable Pavers.	
Throughout	Water Quality Catch Basin	22,500	0.52	Five installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width	DDOT
In Progress					
Hill East WaterfrontDevelopment SE. (Parcel 13)	WQ catchbasins; Green roof; Bioretention; Curbside Bioretention/Tree Box; Infiltration Trenches; Permeable Paving; Harvest/Reuse Systems	2,918,520	67	Redevelopment of DC General Hospital site for housing and commercial use; extending C St. & Massachusettes Ave down to Anacotia River connecting with River Walk; Development will use LID throughout; must meet Anacostia Environmental Standards Act 2008 requiring on-site retention of first 1"-24 hr event and water quality treatment on all releases.	DDOT
Southwest Waterfront Development	WQ catchbasins; Green roof; Bioretention; Curbside Bioretention/Tree Box; Infiltration Trenches; Permeable Paving; Harvest/Reuse Systems	2,047,320	47	Redevelopment of areas around new Baseball Field and Navy Yard will include LID throughout; must meet Anacostia Environmental Standards Act 2008 requiring on-site retention of first 1"-24 hr event and water quality treatment on all releases.	DDOT
Poplar Point Development	WQ catchbasins; Green roof; Bioretention; Curbside Bioretention/Tree Box; Infiltration Trenches; Permeable Paving; Harvest/Reuse Systems	5,662,800	130	Brown Fields to mixed use development will include LID throughout; must meet Anacostia Environmental Standards Act 2008 requiring on-site retention of first 1"-24 hr event and water quality treatment on all releases.	DDOT

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Tidal Anacostia					
In Progress					
11th St Bridge	Water Quality Catch Basins; Bioretention; Infiltration Trenches	420,000	10	2500 LF construction will meet Anacostia Environmental Standards Act 2008	DDOT
South Capitol Bridge	Water Quality Catch Basins; Bioretention; Infiltration Trenches	90,000	2	1500 LF construction will meet Anacostia Environmental Standards Act 2008	DDOT
Anacostia River Walk Trail	Bioretention; Bioswales	9,300	0.21	Includes 900 LF of bioswales and six bioretention sites	DDOT
Kennilworth Ave. NE.	Trash Removal System: In River Device			Mechanical Pipe Collection/Removal System	DDOT
18th St & Good Hope Rd.	Bioretention; Curbside Bioretention/Tree Box; Infiltration Trenches; Permeable Paving			Rebuild of existing library site going for LEED Silver; To manage the 15 yr event on site with Bioretention	DCPL/DDOT
Exploratory					
3650 Ely Pl. SE (John P. Sousa Middle School)	Green roof; Cistern	9,000	0.21	North of Ft. Dupont Park	DCPS/OPEFM
Ft. Dupont					
Completed					
Throughout	Water Quality Catch Basin	45,000	1.03	Ten installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width	DDOT
Burns St, & Ridge Rd. SE (next to DCP&R Pool)	Bioretention	95,040	2.18	Ecosite design, Gold Leaf Group constructed, DDOE site inspected, 2-yr maintenance contract out for bid. Modifications included curbcuts, ammended soils, & underdrain. DDOT ROW, abuts NPS.	
Burns St. SE -- Alabama Ave. to Ridge Rd.	Bioretention	29,250	0.67	Ecosite design, Gold Leaf Group constructed, DDOE site inspected, 2-yr maintenance contract out for bid. Modifications included curbcuts, ammended soils, & underdrain. DDOT ROW, abuts NPS .	
3779 Ely Pl. SE (Ice Rink)	Bioretention	108,000	2.48	Ecosite design, Gold Leaf Group constructed, DDOE site inspected, 2-yr maintenance contract out for bid. Modifications included curbcuts, ammended soils & flow deflectors. NPS concession. Parking lot islands.	NPS
Ridge Road SE -- Ft. Davis/ Ridge intersection to G St.	Bioretention	15,080	0.35	Ecosite design, Gold Leaf Group constructed, DDOE site inspected, 2-yr maintenance contract out for bid. Modifications included curbcuts, ammended soils & flow deflectors. Treats half the road. DDOT ROW; abuts NPS.	
Ft. Dupont Drive SE -- Activities Center	Bioretention	53,820	1.24	Ecosite design, Gold Leaf Group constructed, DDOE site inspected, 2-yr maintenance contract out for bid. Modifications included curbcuts, ammended soils & flow deflectors. Parking lot island and easement, NPS concession.	NPS

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Ft. Dupont					
Exploratory					
V St. & Park Pl. SE. (alleyway)	Permeable Paving	6600	0.15	Potential Green Alley Site; investigated based on citizen interst in LID projects.	DDOT
Alabama Ave. & Burns St. SE intersection	Bioretention; Bioswales; Infiltration Trenches	19,125	0.44	To direct runoff into triangle Burns Rd. requires flow diversion w/ asphalt ridges. Infiltration into exisitng areas along Alabama w/curb cuts.	DDOT
Alabama Ave SE -- Burns St to Massachusetts Ave.	Bioretention; Infiltration Trenches	53,856	1.24	West road side able to accomadate street runoff; requires curbcuts and minor excavation	DDOT
Massachusetts Ave. SE -- Alabama - Minnesota Aves.	Infiltration Trenches	237,600	5.45	Both roadsides able to accomadate street runoff with curb cuts and minor excavation; storm drains available for overflow	DDOT
Ft. Dupont Drive SE -- Activities Center	Bioretention; Bioswales	95,040	2.18	Remove concrete channel in roadside swale; ammend soil; no road alteration required;	NPS
Ft. Dupont Drive SE --Access Road to Refueling Station (Fleet Maintenance)	Bioswales	25,344	0.58	Curb cuts to divert stormwater to exisitng grassy areas along roadside; amend soil and plant for bioretention.	NPS
Ft. Dupont Drive SE --Parking lot outside of Refueling Station	Bioretention; Bioswales; Infiltration Trenches	11,532	0.26	Curb cuts to divert stormwater to exisitng grassy areas along roadside; amend soil and plant for bioretention.	NPS
Pope Branch					
Completed					
Throughout	Water Quality Catch Basin	90,000	2.07	Ten installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width	DDOT
3030 G St. SE	Bioretention	14,112	0.32	Theraputic Center front parking lot, 2-yr maintenance contract out for bid, DPR will assume maintenance afterwards	DPR
M Place SE -- Fairlawn and Minnesota Aves.	Bioretention	27,601	0.63	Strong resident support. Good landscaping opportunity for park. In Pope Branch Park. Riparian plantings. 2-yr maintenance contract out for bid. DPR will assume maintenance	DPR
M St. and Fairlawn Ave. SE	Bioretention	27,601	0.63	Curb cuts, ammended soil, under-drain into Pope Branch. 2-yr maintenance contract out for bid. DPR will assume maintenance afterwards	DPR
In Progress					
Pennsylvania Ave. SE	Water Quality CB; Bioretention	432,000	9.92	Great Street Reconstruction; two WQ Catchbasins per block (16 blocks); and three LID sites	DDOT
4000 Q St. SE. (intersection of Ft. Dupont; outside Ft. Davis Park)	Streetside Bioretention (Bumpouts)	18,000	0.41	Demonstration of innovative traffic slowing measures by bottle necking the roadway with bioretention areas placed in parking spaces areas; estimate four bumpouts with ~300 LF each	DDOT
Throughout	RiverSmart Home	240,000	5.51	Pilot Launch: Homowner incentive program includes up to five LID practices: Shade Tree planting; Lawn replacement w/Native plantings; Rain Barrels; Rain Gardens; Permeable Pavers. Anticipate completing 80 homes.	

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Pope Branch					
Exploratory					
3985 Massachusetts Ave SE	Downspout disconnect; Bioretention	18,900	0.43	Dupont Park: 7th Day Adventist Church--bioretention siting: side street, alleyway; excavation, soil ammendment and planting	
3942 Alabama Ave. SE	Bioretention	16,122	0.37	Dupont Park: 7th Day Adventist School parking lot--bioretention siting: side street, alleyway; excavation, soil ammendment and planting	
3456 Pennsylvania Ave SE	Bioretention	24,409	0.56	Ft Davis: Church of Jesus Christ--LID in parking lot. Have a current drainage problem Contact: Darenda Downing & Charlene Belton	
Massachusetts Ave. SE -- Alabama to Minnesota Aves.	Bioretention	237,600	5.45	Road has recently been upgraded. Bioretention cells possible along length of street and at stormdrains; curbcuts; soil ammendments and plantings required.	DDOT
Park border of 34th & 35th St. SE	Plant Shade Trees	estimate 20 trees	0.60	Number of existing storm drains precludes LID. Ranks hign for tree planting.	NPS/Casey Tree
Branch Ave. & O St. SE	Bioretention	24,255	0.56	New curbs just installed, 2 existing catchbasins, requires curb cuts, soil ammendments.	DDOT
O St. & Pennsylvania Ave. SE	Bioretention	15,561	0.36	Upper parking lot 2 bioretention sites possible, asphalt removal, soil ammendment; Maybe a site included in the Pennsylvania Ave Great Street Reconstruction.	DDOT/MPDC
3320 Pennsylvania Ave. SE near Branch Ave.	Bioretention; Permeable Pavement; Infiltration Trenches	58,332	1.34	Large municipal parking lot; bioretention; permeable pavement; soak trenches; Could be part of Great Streets Pennsylvania Ave Project	WASA/DDOT
31st St. & Westover Dr. SE (Good Hope Hill near Pennsylvania Ave.)	Bioretention	34,848	0.80	Capture and treat street stormwater roadside areas; Agency discussions on-going: Steep slopes may require check dams.	DDOT
1650 30th St SE (Randal Highlands Elementary)	Bioretention; Native Planting	22,000	0.51	School adjacent to Pope Branch watershed. Renovations completed. Grassed areas adjacent to parking lot available for bioretention. Community interest. School has not been approached.	DCPS-OPEFM
38th St. & Pennsylvania Ave. SE (near Ft Davis Dr.)	Bioretention; Plant Shade Trees	7,362	0.17	Island area and roadside grassed area; requires curb cuts, soil ammendments and plantings.	DDOT/NPS
1639 - 1651 38th St. SE	Bioretention; Plant Shade Trees	8,928	0.20	Roadside grassed area; requires curb cuts, soil ammendments and plantings could include shade trees.	DDOT/NPS
Ft. Davis Dr. (through Ft Dupont)	Bioretention	99,742.61	2.29	Roadside grassed ROW w/ underdrains; oppportunities for water diversion to excavated areas w/ soil amendments and plantings.	DDOT/NPS
3849 Alabama & Pennsylvania Aves.	Bioretention	27,187.50	0.62	Surface Parking Lot. Existing 8 grass/landscape islands with workable drainage areas; will require excavation, curb cuts, plantings.	DCHS
30th & Massachusetts Ave. SE	Bioretention	50,049	1.15	Current runoff drains to grassy area; ammend soil and plant.	DDOT
No longer feasible					
Pennsylvania Baptist Church parking lot, 3000 Pennsylvania Ave.*	LID in parking lot	45,873	1.05	Connect to drain on O & 30th; Installed Baysaver	

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		**sq. ft.**	**acres**		
Watts Branch					
Completed					
Throughout	Water Quality Catch Basin	90,000	2.07	Twenty installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width.	DDOT
In Progress					
Woodson High School NE. & surrounding streets: Arch Drwgs Completed; Demolition started July 2008; Engineering Design In-prog;	Harvest/Reuse system; Green Roof (intensive/extensive); Green Walls; Bioretention; Curbside Bioretention/Tree Box		0.00	Building going for LEED Gold certification; looking for 100 yr event on-site management; innovative demonstartion of harvest reuse for interior low flush tiolets and HVAC systems as well as exterior drip irrigation throughout site; innovative demostration of indoor/outdoor green walls with dedicated harvest reuse irrigation cisterns. Intensive green roof systems with student accesibilty discussing rooftop gardening possiblities.	DCPS/OPEFM
Nannie Helen Burroughs Ave. NE. (NHB): Great Street Reconstruction Project; Water Quality Catchbasins along 7500 LF of roadway; LID where feasible along roadside or in the curbside/treebox area (~13% of drainage area)	Water Quality CB; Bioretention; Curbside Bioretention/Tree Box; Infiltration Trenches; Permeable Paving	370,260	8.50	Great Street Reconstruction Project; Water Quality Catchbasins along 7500 LF of roadway; LID where feasible along roadside or in the curbside/treebox area (~13% of drainage area)	DDOT
56th & Eads Sts. - 56th & Foote Sts. NE. (ROW/Drew Elementary School)	Bioretention	6600	0.15	Dead-end roadway to be retrofitted with LID; Discussions with school to increase drainage area; Curb cuts/ infiltration areas.	OPEFM/DDOT
56th & Clay Sts. NE.	Bioretention	6600	0.15	Dead-end roadway to be retrofitted with LID; Curb cuts/ infiltration areas.	DDOT
44th & Hayes Sts. NE.	Bioetention	6600	0.15	Dead-end roadway to be retrofitted with LID; Curb cuts/ infiltration areas.	DDOT
47th & FooteSts. NE	Bioretention	6600	0.15	LID along curbless section.	DDOT
4200 Grant St. NE. (alleyway between Grant & Gault Sts.)	Bioretention	6,600	0.15	Dead-end roadway to be retrofitted with LID; Curb cuts/ infiltration areas.	DDOT
Exploratory					
Ft. Circle Park: 44th & Hayes & Gault Sts. (alleyway)	Permeable Paving; Infiltration Trench	6,600	0.15	Green Alley site; Existing concrete surface considered for center strip removal and installation of permeable surface; infiltration may help connect existing ravines from disconnected	NPS/DDOT
49th St. & Fitch Pl. NE	Curbside Bioretention/Tree Box; Infiltration Trenches	6,600	0.15	Some trees exist in curb strip, curb strip is narrow, runoff ponds at catchbasin during high rain being considered for curbside bioretention.	WASA/DDOT
55th St. from Dix St. to Clay St. NE	Bioretention (curbside); Infiltration Trenches		0.00	No street trees in curb strips, significant grade on 55th St could direct flow of runoff into curbside treatment area; curbcuts, excavation, soil amendment, plantings required.	UFA/DDOT
58th St. & Blaine St. to 58th St. and Clay St. NE	Bioretention; Infiltration Trenches		0.00	New construction and curbside tree box to the west, open field to east that could be used for raingarden; Agency discussions on-going.	DCHA/DDOT
East Capitol St & Davey St NE (Capitol Heights Metro parking lot)	Bioretention; Infiltration Trenches	65,340	1.50	Good grade, lots of space for infiltration trenches or bioretention	WMATA/DDOT

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		**sq. ft.**	**acres**		
Watts Branch					
Exploratory					
Eastern Ave. & Dix St. NE (Intersection)	Bioretention; Infiltration Trenches		0.00	Vacant land on north side of Dix St. could accomadate significant stormwater from Dix and a portion of Eastern Ave. Investigating land titles.	DCHA/DDOT
60th St. & Dix St. NE	Infiltration area		0.00	Currently no curb. Direct street runoff to roadside area.	DDOT
6200 Dix St. NE	Bioretention; Infiltration Trenches		0.00	Direct street runoff to roadside area.	DDOT
Eastern Ave. & Dix St. NE (Intersection)	Bioretention; Infiltration Trenches		0.00	Direct street runoff to roadside area.	DDOT
61st St.& Dix St. NE	Bioretention; Infiltration Trenches		0.00	Direct street runoff to roadside area.	DDOT
58th St. & Dix St. NE	Bioretention		0.00	Abandoned lot could be utilized for bioretention cell. Investigating land title.	DDOT
59th & Foote Sts. NE	Bioretention; Bioswales		0.00	Lot for sale, good slope, LID could be incorporated	DHCD/DDOT
58th & EadsSts. NE.	Bioretention		0.00	Tree boxes; Adjacent to bus stop	UFA/DDOT
44th & Grant Sts. NE.	Bioetention		0.00	Direct street runoff to roadside area.	DDOT
49th St. & NHB Ave. NE.	Bioetention		0.00	Direct street runoff to roadside area.	DDOT
No longer feasible					
Capitol Gateway Estates; 201 58th St NE	Permeable Pavers; Bioretention		2.00	Hope VI quasi public-private demo-rebuild; LID incorporated into new Senior Facility; did no install permeable paver or bioretention as originally designed; installed sand filters	DCHA
Hickey Run					
Completed					
Throughout	Water Quality Catch Basin	22,500	0.52	Five installed; estimate each catch basin drainage area = 300 LF X 15 ft of roadway width.	DDOT
Exploratory					
22nd & Rand Sts. NE.	Curbside Bioretention/Tree Box		0.00	Two tree boxes, NW and SW corners.	UFA/DDOT
24th St. & Rand Pl. NE.	Curbside Bioretention/Tree Box		0.00	Four tree boxes, NW and SW corners, Two inline on each side	UFA/DDOT
R St & Bladensburg Rd. NE.	Bioetention		0.00	SE corner, Biocell possible to treat Bladensburg runoff	
Montana Ave. & Bladensburg Rd. NE. (U-Haul Facility Parking lot)	Bioetention		0.00	Parking lot runoff	

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Hickey Run					
Exploratory					
Montana Ave. NE. (south of 17th St--in front of Willy's Autobody)	Bioetention		0.00	Direct street runoff to roadside area.	DDOT
17th St. NE. (between West Virginia & Montana Aves.)	Bioswales		0.00	Vegetated swale along both sides of street. NO curbs and lots of parked cars causing lots of erosion and sediment loading.	DDOT
17th St. NE. (between West Virginia & Montana Aves.--Police Repair Facility)	Permeable Pavers		0.00	Heavily used parking lot could be retrofited with permeable pavers.	MDP
West Virginia Ave. NE. (between 15th & 17th--in front of cemetary)	Bioetention; Bioswales		0.00	South side of street could incorporate biocell of swale to treat street runoff from W. Virginia	
16th St. & West Virginia Ave. NE.	Bioetention		0.00	Biocell possibe on NE corner of street to capture runoff from parking lot and 16th street	
16th & Okie St NE. (north side near Hechts Building)	Curbside Bioretention/Tree Box		0.00	Two tree boxes on north side of Okie street near 16th.	UFA/DDOT
16th & Okie Sts. NE. (West side between New York Ave.)	Bioetention		0.00	Biocell possible to treat 16th street street runoff and adjacent UNPAVED parking lot runoff.	
New York Ave. NE. (access road International Limousine)	Bioretention		0.00	Biocell along border of parking lot and access road to treat parking lot	
3600 New York Aves. NE. (Washington Times & Distribution Center Parking lot)			0.00	Could be retrofitted with various types of LID	
33rd & V Sts. NE. (USPS Parking Lot)	Bioretention		0.00	Biocell in parking lot	USPS
33rd & Higdoll Sts. NE. (USPS Facility)	Bioretention		0.00	Large parking lot could incorporate biocell in parking lot; also could incorporate large biocell along access road behind USPS, V Street Annex	USPS
31st & Ames Sts. NE. (Metro Employee Parking Lot)	Bioretention		0.00	2 biocells along northern periphery of parking lot in public space, to treat parking lot.	WMATA
31st & Ames, NE corner	Bioretention		0.00	Large biocell possible in public space to treat 31st and Ames St. runoff.	DDOT
21st St. & Queens Chapel Rd. NE. (Teamsters Union Building)	Bioretention		0.00	Parking lot retrofit	
21st St. & Queens Chapel Rd. NE. (Teamsters Union Building)	Curbside Bioretention/Tree Box		0.00	Direct street runoff to treebox area	DDOT
33rd St. NE. (between Adams & Ames Sts.)	Bioretention		0.00	Large biocell in public space to treat Ft. Myers Construction Co, parking lot runoff and 33rd street runoff	DDOT
33rd & Ames Sts. NE.	Bioretention		0.00	Location has no curbs and parked cars are causing heavy erosion, which must be addressed.	DDOT
33rd & Adams Sts. NE. (corner)	Bioretention		0.00	Raised playfield eroding into street, which must be addressed.	DDOT
31st & Adams Sts. NE. (SW corner)	Curbside Bioretention/Tree Box		0.00	Tree box	UFA/DDOT
30th & Channing Sts. NE. (SW corner)	Curbside Bioretention/Tree Box		0.00	Tree box	UFA/DDOT
31st & Douglas Sts. (NW, NE, SW corners)	Curbside Bioretention/Tree Box		0.00	Tree box	UFA/DDOT
South Dakota Ave. & Bladesburg Rd. NE. (Sammy's Liquors)	Bioretention		0.00	Heavy sediment sources in alleys around Sammy's Liquors, which must be addressed. Biocell in parking lot	
Berry St. NE. (dead end)	Bioretention		0.00	Biocell at end of street	DDOT
Apple Road NE. (dead end)	Bioretention		0.00	Biocell at end of street	DDOT
Ft. Lincoln Park NE. (tennis courts & swimming pool parking lots)	Bioretention		0.00	Biocells at both locations possible to treat parking lots	DPR/DDOT

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Hickey Run					
Exploratory					
30th & Evarts Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on NE corner of street.	UFA/DDOT
Evarts Rd. NE. (Western end)	Bioretention		0.00	Biocell at end of street	DDOT
Douglas St. NE. (Western end)	Bioretention		0.00	Biocell at end of street	DDOT
Adams Rd. NE. (Western end)	Bioretention		0.00	Biocell at end of street	DDOT
Bladensburg and Channing Rd. NE. (east side of Bladensburg along periphery of parking lot)	Bioretention		0.00	Biocell to treat parking lot.	DDOT
Bladensburg Rd. & V St. NE. (USPS corner Parking Lot)	Bioretention		0.00	Biocell to treat parking lot.	USPS
Bladensburg Rd. & V St. NE. (Metro Bus repair facility)	Bioretention		0.00	Parking lot could be retrofitted with biocells all along southern periphery	WMATA
Adams St. & Queens Chapel Rd. NE. (DC Govt. Facility)	Bioretention		0.00	Interior parking lots could be retrofitted with biocells in several locations	
Lawrence & Edwin Sts. NE.			0.00	Huge sediment source from construction materials recylcing plant. Catchbasin at Lawrence and Edwin needs to be modified to catch sediment or more drastic measures need to be taken.	DDOT
19th Street NE. (between Bryant & Adams Sts.)			0.00	This location is a huge sediment source. Needs to be repaved and curbs put in.	DDOT
Bryant St. NE. (Far eastern dead end)	Bioretention		0.00	Large biocell could be put in to catch trash, sediment etc.	DDOT
Bryant St. NE. (between 17th & 18th. Sts.)			0.00	North side of street is major sediment source. Slope needs to be stabilized.	DDOT
18th St. & Channing Rd. NE. (East & West sides of 18th. St.)	Curbside Bioretention/Tree Box		0.00	Tree box on each side.	UFA/DDOT
18th St. NE. (Washington Center Home)	Bioretention		0.00	Parking lot could use biocell to treat runoff at south end.	
17th & Downing Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on NW corner.	UFA/DDOT
Channing Rd. NE. (Dead end; east off of 18th St.)	Bioretention		0.00	Biocell at end of street to treat street runoff.	DDOT
17th & Evarts Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree boxes on NW, SW and SE corner.	UFA/DDOT
24th St & Channing Rd. NE. (along railroad tracks)	Bioretention		0.00	Biocell to collect stormwater at this low corner. Natural springs on this street causing constant seepage.	DDOT/WMATA
Douglas Ave.NE. (eastern end of street near railroad tracks)	Bioretention		0.00	Biocell to collect stormwater at this low corner.	DDOT/WMATA
26th & Evarts Sts. NE.	Bioretention		0.00	Biocell near train tracks to collect street runoff.	DDOT
17th & Franklin Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree boxes on NW, NE and SW corners.	UFA/DDOT
18th & Franklin Sts. NE.	Curbside Bioretention/Tree Box		0.00	3 in-line tree boxes at SW corner of intersection, and 3 on SE corner, and 2 on each side of catch basin on NW corner.	UFA/DDOT
24th & Franklin Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on SE and SW corner.	UFA/DDOT
20th & Franklin Sts. NE. (Langdon School)	Bioretention		0.00	Biocell along northern side of parking lot.	
18th & Girard Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on NW and SW corner.	UFA/DDOT

Facility Address/Site Name	LID Type	Area Treated		Notes	Cooperating Agency
subwatershed		sq. ft.	acres		
Hickey Run					
Exploratory					
18th & Franklin Sts. NE. (Public Park)	Bioretention		0.00	Two biocells inside park property treating runoff from both Franklin and 18th streets.	
20th St. NE. (between Hamlin & Franklin Sts.)	Bioretention		0.00	Biocell inside park property midway down 20th on western side treating runoff from 20th.	
16th & Girard Sts.	Bioretention		0.00	NW corner, green pubic space could accept a biocell to treat street runoff.	
17th & Girard Sts. NE.	Bioretention		0.00	SW corner public green space could accept biocell to treat street runoff.	
South Dakota Ave. & Bladesburg Rd NE. (Sammy's Liquors)	Curbside Bioretention/Tree Box		0.00	SW corner tree box	UFA/DDOT
Brentwood & 17th Sts. NE.	Curbside Bioretention/Tree Box		0.00	NW corner tree box.	UFA/DDOT
Brentwood & Hamlin Sts. NE. (Parking Lot at 17th St. corner)	Bioretention		0.00	Biocell at western corner to accept runoff from p-lot.	
Irving & 18th Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on NW and NE corners.	UFA/DDOT
18th & Hamlin Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on NE corner.	UFA/DDOT
Hamlin & King Sts. NE.	Bioretention		0.00	Large biocell inside park on souther side of Hamlin Street to treat street runoff.	DDOT
Mills & Hamlin Sts. NE (corner of pubic park)	Bioretention		0.00	Large biocell inside park on souther corner to treat street runoff.	DDOT/DPR
24th & Hamlin Sts. NE.	Curbside Bioretention/Tree Box		0.00	Tree box on NE corner.	UFA/DDOT
17th & Bryant Sts. NE.			0.00	Biocell on eastern side of Bryant south of the entrance to development to treat street runoff.	DDOT

APPENDIX C

Draft Model for Estimating Pollutant Reductions

Appendix C - Output from Non-Structural Spreadsheet Model

Non-Structural BMP Pollutant Reductions	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Portland Total (Per Year)						
TSS (lbs)	2174370	2174370	2699780	2699813	2798028	2798061
TP (lbs)	4548	4548	5479	5479	5688	5688
TN (lbs)	113	113	225	234	242	251
Cu (lbs)	444	444	500	500	513	513
Pb (lbs)	829	829	956	956	984	984
Zn (lbs)	1621	1621	1812	1812	1851	1851
Fecal Coliform Reduction (billion colonies)	6541	6541	13082	13082	13082	13082
Single-family residential subtotal (per year)						
TSS (lbs)	134.9	134.9	165.68	198.82	231.96	265.09
TP (lbs)	14.1	14.1	28.2	28.38	28.55	28.72
TN (lbs)	111.76	111.76	223.52	232.13	240.74	249.53
Cu (lbs)	53.76	53.76	55.2	55.2	55.2	55.2
Pb (lbs)	80.64	80.64	82.8	82.8	82.8	82.8
Zn (lbs)	564.48	564.48	579.6	579.6	579.6	579.6
Fecal Coliform Reduction (billion colonies)	6540.8	6540.8	13081.6	13081.6	13081.6	13081.6
Multi-family resdiential subtotal (per year)						
TSS (lbs)	0.00	0.00	0.00	0.00	0.00	0.00
TP (lbs)	0.03	0.03	0.03	0.03	0.03	0.03
TN (lbs)	1.72	1.72	1.72	1.72	1.72	1.72
Cu (lbs)	2.40	2.40	2.40	2.40	2.40	2.40
Pb (lbs)	3.60	3.60	3.60	3.60	3.60	3.60
Zn (lbs)	25.20	25.20	25.20	25.20	25.20	25.20
Fecal Coliform Reduction (billion colonies)	0.00	0.00	0.00	0.00	0.00	0.00
Transportation subtotal (per year)						
TSS (lbs)	2142955	2142955	2668333	2668333	2766515	2766515
TP (lbs)	4532	4532	5448	5448	5657	5657
TN (lbs)	0	0	0	0	0	0
Cu (lbs)	288	288	342	342	356	356
Pb (lbs)	614	614	739	739	767	767

Appendix C - Output from Non-Structural Spreadsheet Model

Non-Structural BMP Pollutant Reductions	**Existing**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Zn (lbs)	851	851	1027	1027	1066	1066
Fecal Coliform Reduction (billion colonies)	0	0	0	0	0	0
City Wide Subtotal (per year)						
TSS (lbs)	0	0	0	0	0	0
TP (lbs)	0	0	0	0	0	0
TN (lbs)	0	0	0	0	0	0
Cu (lbs)	0	0	0	0	0	0
Pb (lbs)	0	0	0	0	0	0
Zn (lbs)	0	0	0	0	0	0
Fecal Coliform Reduction (billion colonies)	0	0	0	0	0	0
Commercial Subtotal (per year)						
TSS (lbs)	750	750	750	750	750	750
TP (lbs)	2	2	2	2	2	2
TN (lbs)	0	0	0	0	0	0
Cu (lbs)	0	0	0	0	0	0
Pb (lbs)	0	0	0	0	0	0
Zn (lbs)	0	0	0	0	0	0
Fecal Coliform Reduction (billion colonies)	0	0	0	0	0	0
Industrial Subtotal (per year)						
TSS (lbs)	30530.5	30530.5	30530.5	30530.5	30530.5	30530.5
TP (lbs)	0	0	0	0	0	0
TN (lbs)	0	0	0	0	0	0
Cu (lbs)	100.1	100.1	100.1	100.1	100.1	100.1
Pb (lbs)	130.13	130.13	130.13	130.13	130.13	130.13
Zn (lbs)	180.18	180.18	180.18	180.18	180.18	180.18
Fecal Coliform Reduction (billion colonies)	0	0	0	0	0	0
Parks/Public Facilities subtotal (per year)						
TSS (lbs)	0	0	0	0	0	0
TP (lbs)	0	0	0	0	0	0
TN (lbs)	0	0	0	0	0	0

Appendix C - Output from Non-Structural Spreadsheet Model

Non-Structural BMP Pollutant Reductions	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Cu (lbs)	0	0	0	0	0	0
Pb (lbs)	0	0	0	0	0	0
Zn (lbs)	0	0	0	0	0	0
Fecal Coliform Reduction (billion colonies)	0	0	0	0	0	0

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Single-family residential						
Lawn Care						
Description						
Fertilization Rate -**Nitrogen** (lbs/acre/year)	150	150	150	150	150	150
Percent of fertilizer lost to runoff and percolation - **Nitrogen**	25%	25%	25%	25%	25%	25%
Fertilization Rate - **Phosphorus** (lbs/acre/year)	15	15	15	15	15	15
Percent of fertilizer lost to runoff and percolation - **Phosphorus**	5%	5%	5%	5%	5%	5%
Fertilizer Reduction – due to educational program	50%	50%	50%	50%	50%	50%
Percent of residents that fertilize their lawn who over-fertilize	50%	50%	50%	50%	50%	50%
Modifiable						
Cumulative number of property owners reached	1000	1000	2000	4000	6000	8000
Lawn area per property owner (acres)	0.00574	0.00574	0.00574	0.00574	0.00574	0.00574
Willingness to change behavior	8%	8%	8%	8%	8%	8%
Pollutant Reduction						
Nitrogen load reduction (lbs/pervious acre/year)	0.75	0.75	0.75	0.75	0.75	0.75
Total nitrogen load reduction (lbs/yr)	4.3	4.3	8.6	17.2	25.8	34.4
Phosphorus Load Reduction (lbs/pervious acre/year)	0.015	0.015	0.015	0.015	0.015	0.015
Total phosphorus load reduction (lbs/yr)	0.09	0.09	0.17	0.34	0.52	0.69
Naturescaping						
TSS load reduction (mg/l)	900	900	900	900	900	900
Average lot size (sf)	5000	5000	5000	5000	5000	5000
Percent of lot with bare soil (area that can be treated)	0.05	0.05	0.05	0.05	0.05	0.05
Area that can be treated per house(sf)	250	250	250	250	250	250
P = annual precipitation depth (inches)	36	36	36	36	36	36
Pj = factor that correct for storms that produce no runoff	0.9	0.9	0.9	0.9	0.9	0.9
Rv = runoff coefficient = 0.05 + 0.009 + * I	0.5	0.5	0.5	0.5	0.5	0.5
I = percent of catchment that is impervious	50	50	50	50	50	50
C = reduction in pollutant EMC (mg/L)	900	900	900	900	900	900
A = contributing area (acres)	0.01	0.01	0.01	0.01	0.01	0.01

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
L (lbs) = 0.23 * P * Pj * Rv * C * A	19	19	19	19	19	19
Modifiable						
Cumulative number of people reached through program	4071	4071	5000	6000	7000	8000
Percent of people reach who implement naturescaping	30%	30%	30%	30%	30%	30%
Pollutant Reduction						
TSS load reduction (lbs/ pervious acre/year)	5.77	5.77	5.77	5.77	5.77	5.77
Total TSS reduction (lbs/yr)	135	135	166	199	232	265
Number of people who will implement naturescaping	1221	1221	1500	1800	2100	2400

Pet Waste

Description						
Waste Production (lbs/dog/day)	0.32	0.32	0.32	0.32	0.32	0.32
Fecal Coliform (billion colonies/lb)	10	10	10	10	10	10
Percent of pollutant delivered to stream **(fecal coliform)**	35%	35%	35%	35%	35%	35%
Nitrogen (lbs/lb)	0.23	0.23	0.23	0.23	0.23	0.23
Percent of pollutant delivered to stream **(nitrogen)**	25%	25%	25%	25%	25%	25%
Phosphorus (lbs/lb)	0.01	0.01	0.01	0.01	0.01	0.01
Percent of pollutant delivered to stream **(phosphorus)**	75%	75%	75%	75%	75%	75%
Conversion Factor (days/year)	365	365	365	365	365	365
Number of single family residential households with dogs	25000	25000	25000	25000	25000	25000
Percent of dog owners who walk and don't clean up after their dog	20%	20%	20%	20%	20%	20%
Modifiable						
Cumulative number of people reached through program	1000	1000	2000	2000	2000	2000
Willingness to change behavior	8%	8%	8%	8%	8%	8%
Pollutant Reduction						
Fecal Coliform Reduction (billion colonies per year)	6540.8	6540.8	13081.6	13081.6	13081.6	13081.6
Phosphorus Reduction (lbs/year)	14.016	14.016	28.032	28.032	28.032	28.032
Nitrogen Reduction (lbs/year)	107.456	107.456	214.912	214.912	214.912	214.912

Downspout Disconnect -Residential

Description						
Building footprint (square feet)	1500	1500	1500	1500	1500	1500

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Rooftop (acres)	0.0344353	0.0344353	0.0344353	0.0344353	0.0344353	0.0344353
Total Cu (lb/impervious acre of roof)	0.11616	0.11616	0.11616	0.11616	0.11616	0.11616
Total Pb (lb/impervious acre of roof)	0.17424	0.17424	0.17424	0.17424	0.17424	0.17424
Total Zn (lb/impervious acre of roof)	1.21968	1.21968	1.21968	1.21968	1.21968	1.21968
Modifiable						
Portion of roof disconnected	60%	60%	60%	60%	60%	60%
Number of households participating	22400	22400	23000	23000	23000	23000
Pollutant Reduction						
Total Cu (lbs/year)	53.76	53.76	55.2	55.2	55.2	55.2
Total Pb (lbs/year)	80.64	80.64	82.8	82.8	82.8	82.8
Total Zn (lbs/year)	564.48	564.48	579.6	579.6	579.6	579.6
SFR TOTALS (LBS/YR)						
TSS	134.9	134.9	165.7	198.8	232	265.1
TP	14.1	14.1	28.2	28.4	28.5	28.7
TN	111.8	111.8	223.5	232.1	240.7	249.3
Cu	53.8	53.8	55.2	55.2	55.2	55.2
Pb	80.6	80.6	82.8	82.8	82.8	82.8
Zn	564.5	564.5	579.6	579.6	579.6	579.6
Fecal Coliform Reduction (billion colonies per year)	6540.8	6540.8	13081.6	13081.6	13081.6	13081.6

Multi-family residential

Lawn Care

Description

Fertilization Rate - **Nitrogen** (lbs/acre/year)	150	150	150	150	150	150
Percent of fertilizer lost to runoff and percolation - **Nitrogen**	25%	25%	25%	25%	25%	25%
Fertilization Rate - **Phosphorus** (lbs/acre/year)	15	15	15	15	15	15
Percent of fertilizer lost to runoff and percolation - **Phosphorus**	5%	5%	5%	5%	5%	5%
Fertilizer Reduction – due to educational program	50%	50%	50%	50%	50%	50%

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Percent of residents that fertilize their lawn who over-fertilize	50%	50%	50%	50%	50%	50%
Modifiable						
Cumulative number of property owners reached	100	100	100	100	100	100
Acres of lawn per property owner (ft2/acre)	0.02296	0.02296	0.02296	0.02296	0.02296	0.02296
Willingness to change behavior	8%	8%	8%	8%	8%	8%
Pollutant Reduction						
Nitrogen load reduction (lbs/pervious acre/year)	0.75	0.75	0.75	0.75	0.75	0.75
Total nitrogen load reduction (lbs/yr)	1.7	1.7	1.7	1.7	1.7	1.7
Phosphorus Load Reduction (lbs/pervious acre/year)	0.015	0.015	0.015	0.015	0.015	0.015
Total phosphorus load reduction (lbs/yr)	0.03	0.03	0.03	0.03	0.03	0.03
Downspout Disconnect -Multi-Family Residential						
Description						
Building footprint (square feet)	15000	15000	15000	15000	15000	15000
Rooftop (acres)	0.3443526	0.3443526	0.3443526	0.3443526	0.3443526	0.3443526
Total Cu (lb/impervious acre of roof)	0.11616	0.11616	0.11616	0.11616	0.11616	0.11616
Total Pb (lb/impervious acre of roof)	0.17424	0.17424	0.17424	0.17424	0.17424	0.17424
Total Zn (lb/impervious acre of roof)	1.21968	1.21968	1.21968	1.21968	1.21968	1.21968
Modifiable						
Portion of roof disconnected	60%	60%	60%	60%	60%	60%
Number of buildings participating	100	100	100	100	100	100
Pollutant Reduction						
Total Cu (lbs/year)	2.4	2.4	2.4	2.4	2.4	2.4
Total Pb (lbs/year)	3.6	3.6	3.6	3.6	3.6	3.6
Total Zn (lbs/year)	25.2	25.2	25.2	25.2	25.2	25.2
MFR TOTALS (LBS/YR)						
TSS						
TP	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**
TN	**1.72**	**1.72**	**1.72**	**1.72**	**1.72**	**1.72**
Cu	**2.4**	**2.4**	**2.4**	**2.4**	**2.4**	**2.4**
Pb	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Zn	**25.2**	**25.2**	**25.2**	**25.2**	**25.2**	**25.2**
Fecal Coliform Reduction (billion colonies per year)						

Transportation

Street Sweeping

Residential

Frequency (times per year)	6	6	6	6	12	12
lane miles swept	10000	10000	10000	10000	10000	10000
acres per lane mile	1.21	1.21	1.21	1.21	1.21	1.21
TSS removal (lbs/acre/year) -see notes on Trans page	20.9	20.9	20.9	20.9	29	29
TSS removal (lbs/lane mile/yr)	25.33	25.33	25.33	25.33	35.15	35.15
Pollutant removal						
TSS removal (lbs/year)	253333	253333	253333	253333	351515	351515
TP removal (lbs/year)	538	538	538	538	747	747
Cu removal (lbs/year)	34	34	34	34	47	47
Pb removal (lbs/year)	73	73	73	73	101	101
Zn removal (lbs/year)	101	101	101	101	140	140

Industrial

Frequency (times per year)	6	6	23	23	23	23
lane miles swept	5000	5000	5000	5000	5000	5000
acres per lane mile	1.21	1.21	1.21	1.21	1.21	1.21
TSS removal (lbs/acre/year) -see notes on Trans page	51.7	51.7	112.4	112.4	112.4	112.4
TSS removal (lbs/lane mile/yr)	62.67	62.67	136.24	136.24	136.24	136.24
Pollutant removal						
TSS removal (lbs/year)	313333	313333	681212	681212	681212	681212
TP removal (lbs/year)	666	666	1448	1448	1448	1448
Cu removal (lbs/year)	42	42	92	92	92	92
Pb removal (lbs/year)	90	90	196	196	196	196

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

		Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Zn removal (lbs/year)		125	125	272	272	272	272
Commercial							
Frequency (times per year)		49	49	49	49	49	49
lane miles swept		10000	10000	10000	10000	10000	10000
acres per lane mile		1.21	1.21	1.21	1.21	1.21	1.21
TSS removal (lbs/acre/year) -see notes on Trans page		128.6	128.6	128.6	128.6	128.6	128.6
TSS removal (lbs/lane mile/yr)		155.88	155.88	155.88	155.88	155.88	155.88
	Pollutant removal						
TSS removal (lbs/year)		1558788	1558788	1558788	1558788	1558788	1558788
TP removal (lbs/year)		3312	3312	3312	3312	3312	3312
Cu removal (lbs/year)		210	210	210	210	210	210
Pb removal (lbs/year)		449	449	449	449	449	449
Zn removal (lbs/year)		622	622	622	622	622	622
Catch Basin Cleaning							
Average frequency (yr)		0.01000	0.01000	0.10000	0.10000	0.10000	0.10000
Number of catch basins in city		50000	50000	50000	50000	50000	50000
Amount of sediment removed per catch basin (lbs)		35	35	35	35	35	35
Sediment Load Reduction (lbs/year/CB)		0.35	0.35	3.5	3.5	3.5	3.5
Phosphorus Load Reduction (lbs/year/CB)		0.0003003	0.0003003	0.0030030	0.0030030	0.0030030	0.0030030
Cu Load Reduction (lbs/year/CB)		0.0000117	0.0000117	0.0001166	0.0001166	0.0001166	0.0001166
Pb Load Reduction (lbs/year/CB)		0.0000420	0.0000420	0.0004200	0.0004200	0.0004200	0.0004200
Zn Load Reduction (lbs/year/CB)		0.0000644	0.0000644	0.0006440	0.0006440	0.0006440	0.0006440
	Pollutant removal						
TSS removal (lbs/year)		17500	17500	175000	175000	175000	175000
TP removal (lbs/year)		15.015	15.015	150.15	150.15	150.15	150.15
Cu removal (lbs/year)		0.58275	0.58275	5.8275	5.8275	5.8275	5.8275
Pb removal (lbs/year)		2.1	2.1	21	21	21	21
Zn removal (lbs/year)		3.22	3.22	32.2	32.2	32.2	32.2

Maintenance and cleaning of MS4 components

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Sumps and manholes cleaned	922	922	922	922	922	922
Feet of culvert cleaned	21232	21232	21232	21232	21232	21232
Feet of ditch cleaned	11727	11727	11727	11727	11727	11727
Ditch (cubic feet of sediment removed)	11727	11727	11727	11727	11727	11727
TSS removed (lbs/yr)	1289970	1289970	1289970	1289970	1289970	1289970
TP removal (lbs/year)	1107	1107	1107	1107	1107	1107
Cu removal (lbs/year)	43	43	43	43	43	43
Pb removal (lbs/year)	155	155	155	155	155	155
Zn removal (lbs/year)	237	237	237	237	237	237
Tree planting along transportation corridors						
Mature tree diameter	30	30	30	30	30	30
Area covered by tree canopy (ft2)	707	707	707	707	707	707
Percent of area that is impervious	50%	50%	50%	50%	50%	50%
Potential impervious area disconnected (acres)	0.008	0.008	0.008	0.008	0.008	0.008
Deciduous interception efficiency	10%	10%	10%	10%	10%	10%
Modifiable						
Cumulative number of trees planted	5000	5500	6000	6500	7000	7500
Pollutant Reduction						
Total area effectively disconnected (acres)	4.06	4.46	4.87	5.27	5.68	6.09
TSS removal (lbs/year)						
TRANSPORTATION TOTALS (LBS/YR)						
TSS	2142955	2142955	2668333	2668333	2766515	2766515
TP	4532	4532	5448	5448	5657	5657
TN						
Cu	288	288	342	342	356	356
Pb	614	614	739	739	767	767
Zn	851	851	1027	1027	1066	1066
Fecal Coliform Reduction (billion colonies per year)						

City Wide Measures

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Erosion from construction sites						
Pre-construction inspections	3660	3660	3660	3660	3660	3660
Interim compliance inspection (during construction)	657	657	657	657	657	657
Permanent erosion control measure inspections (building final)	3539	3539	3539	3539	3539	3539
Final erosion control inspection (5 months after building final)	2489	2489	2489	2489	2489	2489
Effectiveness of soil and erosion control	70%	70%	70%	70%	70%	70%
Fraction of building permits regulated	100%	100%	100%	100%	100%	100%
Fraction of practices installed	70%	70%	70%	70%	70%	70%
Fraction installed/maintained properly	60%	60%	60%	60%	60%	60%
TSS load without erosion control						
Pollutant Reduction						
TSS load reduction (lbs/yr)	0	0	0	0	0	0
New developments and redevelopments						
Illicit discharge						
Number of illicit discharges removed per acre inspected	0.05	0.05	0.05	0.05	0.05	0.05
Spill response program						

CITY WIDE MEASURES TOTALS (LBS/YR) TSS
TP
TN
Cu
Pb
Zn
Fecal Coliform Reduction (billion colonies per year)

Commercial

Education for businesses (P2 program)						
Total number of businesses (per year)	25	25	25	25	25	25
Percent of businesses that implemented practices due to the program	10%	10%	10%	10%	10%	10%

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Number of business involved	2.5	2.5	2.5	2.5	2.5	2.5
Standard number of acres per site	3.5	3.5	3.5	3.5	3.5	3.5
Total acres of land program applied to	8.75	8.75	8.75	8.75	8.75	8.75
TSS load reduction (lbs/yr)	750	750	750	750	750	750
Heavy Metals load reduction (lbs/yr)	2.68	2.68	2.68	2.68	2.68	2.68
Phosphorus load reduction (lbs/yr)	2.46	2.46	2.46	2.46	2.46	2.46
COMMERCIAL MEASURES TOTALS (LBS/YR)						
TSS	750	750	750	750	750	750
TP	2.46	2.46	2.46	2.46	2.46	2.46
TN						
Cu						
Pb						
Zn						
Fecal Coliform Reduction (billion colonies per year)						

Industrial

Industrial Permitting						
Number of sites inspected	143	143	143	143	143	143
Acres per site	3.5	3.5	3.5	3.5	3.5	3.5
Total acres inspected	500.5	500.5	500.5	500.5	500.5	500.5
TSS (lb/ac/yr) load reduction	61	61	61	61	61	61
Cu (lb/ac/yr) load reduction	0.2	0.2	0.2	0.2	0.2	0.2
Pb (lb/ac/yr) load reduction	0.26	0.26	0.26	0.26	0.26	0.26
Zn (lb/ac/yr) load reduction	0.36	0.36	0.36	0.36	0.36	0.36
TSS reduction (lbs/yr)	30530.5	30530.5	30530.5	30530.5	30530.5	30530.5
Cu reduction (lbs/yr)	100.1	100.1	100.1	100.1	100.1	100.1
Pb reduction (lbs/yr)	130.13	130.13	130.13	130.13	130.13	130.13
Zn reduction (lbs/yr)	180.18	180.18	180.18	180.18	180.18	180.18

INDUSTRIAL MEASURES TOTALS (LBS/YR)

POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

	Existing	Year 1	Year 2	Year 3	Year 4	Year 5
TSS	30530.5	30530.5	30530.5	30530.5	30530.5	30530.5
TP						
TN						
Cu	100.1	100.1	100.1	100.1	100.1	100.1
Pb	130.13	130.13	130.13	130.13	130.13	130.13
Zn	180.18	180.18	180.18	180.18	180.18	180.18
Fecal Coliform Reduction (billion colonies per year)						

Parks and Public Facilities

Fertilizer reduction

Description						
Fertilization Rate - **Nitrogen** (lbs/acre/year)						
Percent of fertilizer lost to runoff and percolation - **Nitrogen**	25%	25%	25%	25%	25%	25%
Fertilization Rate - **Phosphorus** (lbs/acre/year)						
Percent of fertilizer lost to runoff and percolation - **Phosphorus**	5%	5%	5%	5%	5%	5%
Fertilizer Reduction – due to educational program						
Park area (acres)						
Percent of park area that program is going to be applied to						
Pollutant Reduction						
Nitrogen load reduction (lbs/year)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Phosphorus load reduction (lbs/year)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Pesticide reduction

Description						
Pesticide Application Rate - (lbs/acre/year)						
Percent of pesticide lost to runoff and percolation						
Pesticide Reduction						
Park area (acres)						
Percent of park area that program is going to be applied to						
Pollutant Reduction						
Pesticide Load Reduction (lbs/year)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

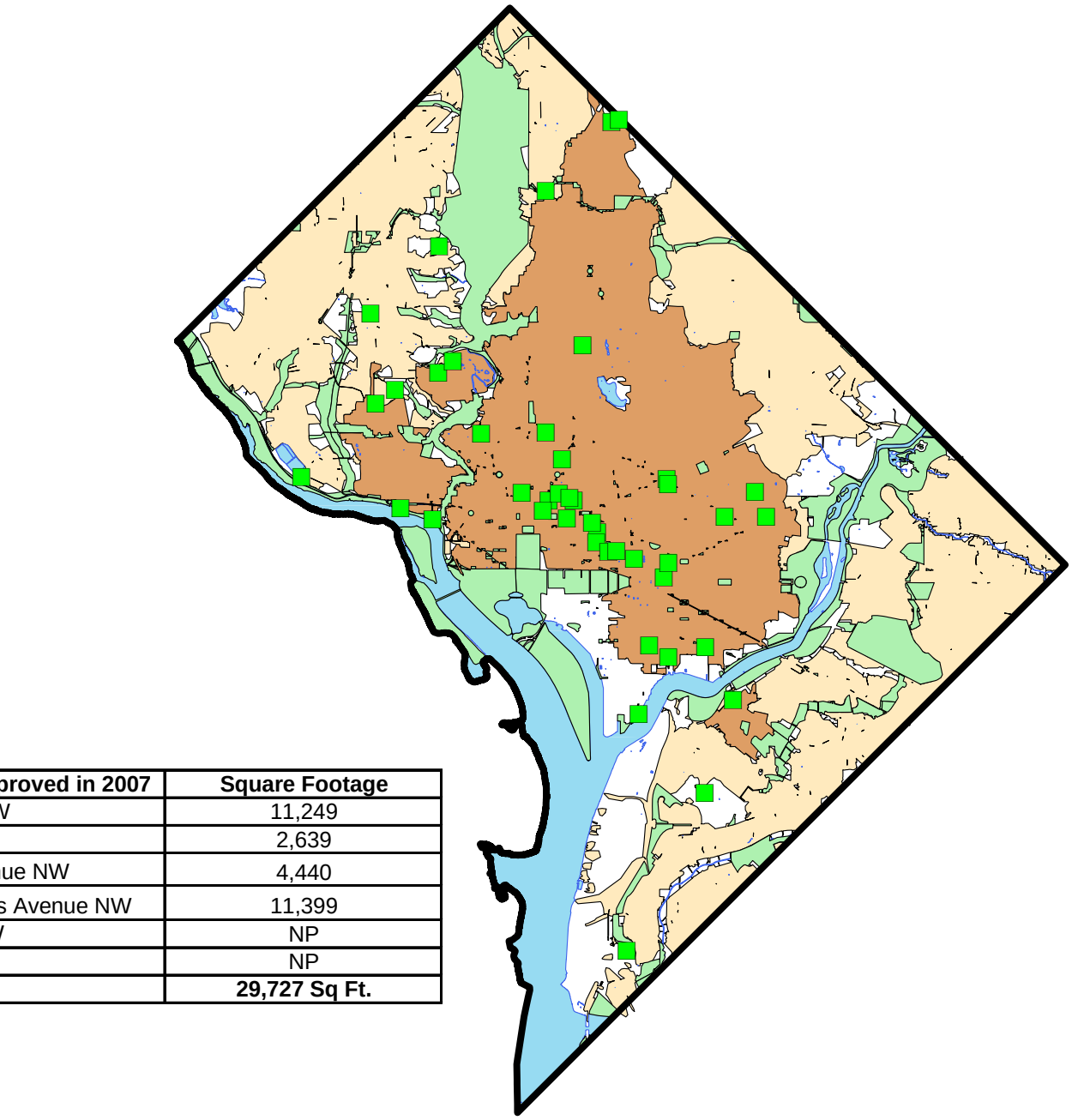
POLLUTANT LOAD REDUCTION CALCULATIONS modifiable rows need additional data

		Existing	Year 1	Year 2	Year 3	Year 4	Year 5
Tree planting (watershed revegetation plan)							
Number of trees planted		99655	99655	105000	110000	115000	120000
Linear feet of streambank		11353	11353	11353	11353	11353	11353
Acres		80.5	80.53	84.85	88.89	92.93	96.97
Rainfall (inches/year)		36	36	36	36	36	36
CN before planting		74	74	74	74	74	74
CN after planting		62	62	62	62	62	62
	Flow Reduction						
Reduced runoff (acre-inches)		2555	2556	2694	2824	2954	3083
Reduced ruoff (acre-feet)		212.9	213	224.5	235.3	246.1	256.9
Education for City Employees							
Green Roofs							
PARKS AND PUBLIC FACILITY TOTALS (LBS/YR)							
TSS							
TP		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TN		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cu							
Pb							
Zn							
Fecal Coliform Reduction (billion colonies per year)							

APPENDIX D

Tracking Quantifiable Stormwater Management Strategies

Location of Green Roofs in the District and Baseline



Green Roofs Approved in 2007	Square Footage
801 17th Street NW	11,249
111 K Street NE	2,639
4100 George Avenue NW	4,440
900 Massachusetts Avenue NW	11,399
1200 19 Street NW	NP
1990 K Street NW	NP
Total	**29,727 Sq Ft.**

*Tracking system developed by the Stormwater Management Division

Legend

- Green Roofs
- Park
- Water
- CSO
- MS4

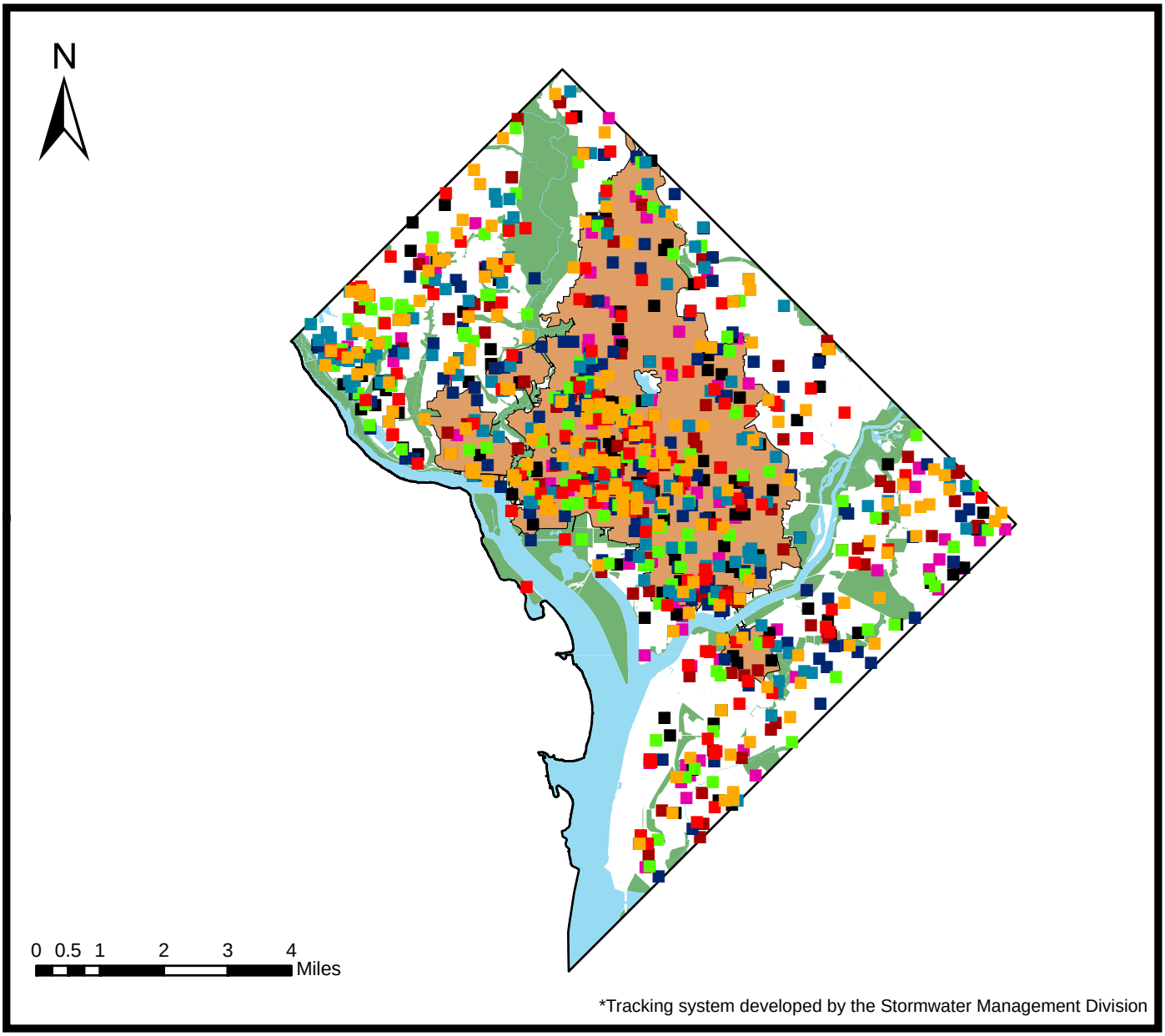
Baseline*	301,751 Sq Ft
2007**	29,727 Sq Ft
Total	331,478 Sq Ft

*Total square footage of green roofs planted in 2006 was 301,751 as reported by Green Roofs for Healthy Cities. The SWMD will use this number as a baseline to track progress.

**Total Square Footage of Green Roofs approved for construction in 2007.

NP= NOT PROVIDED AT THIS TIME

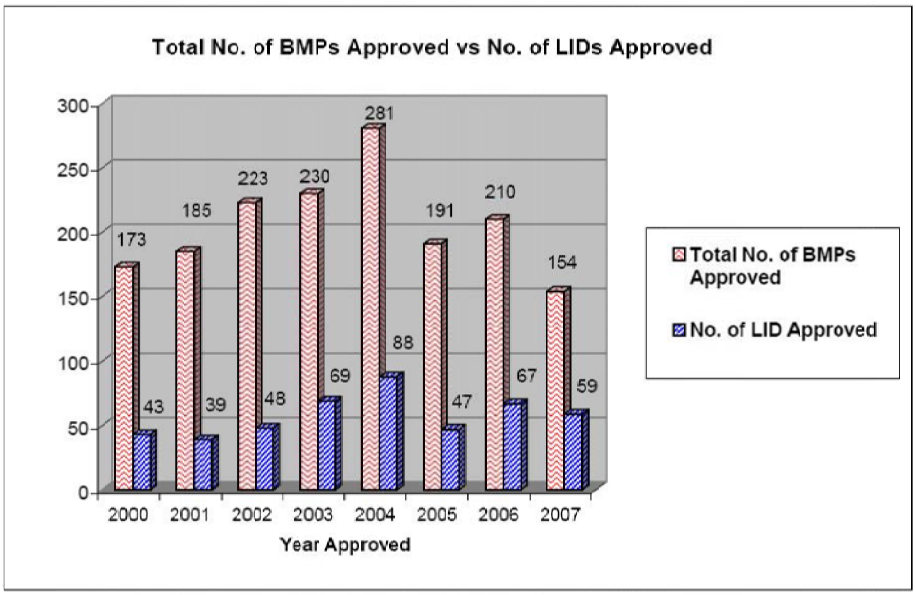
BEST MANANGEMENT PRACTICES (BMPs) STRUCTURES APPROVED FOR STORMWATER MANAGEMENT



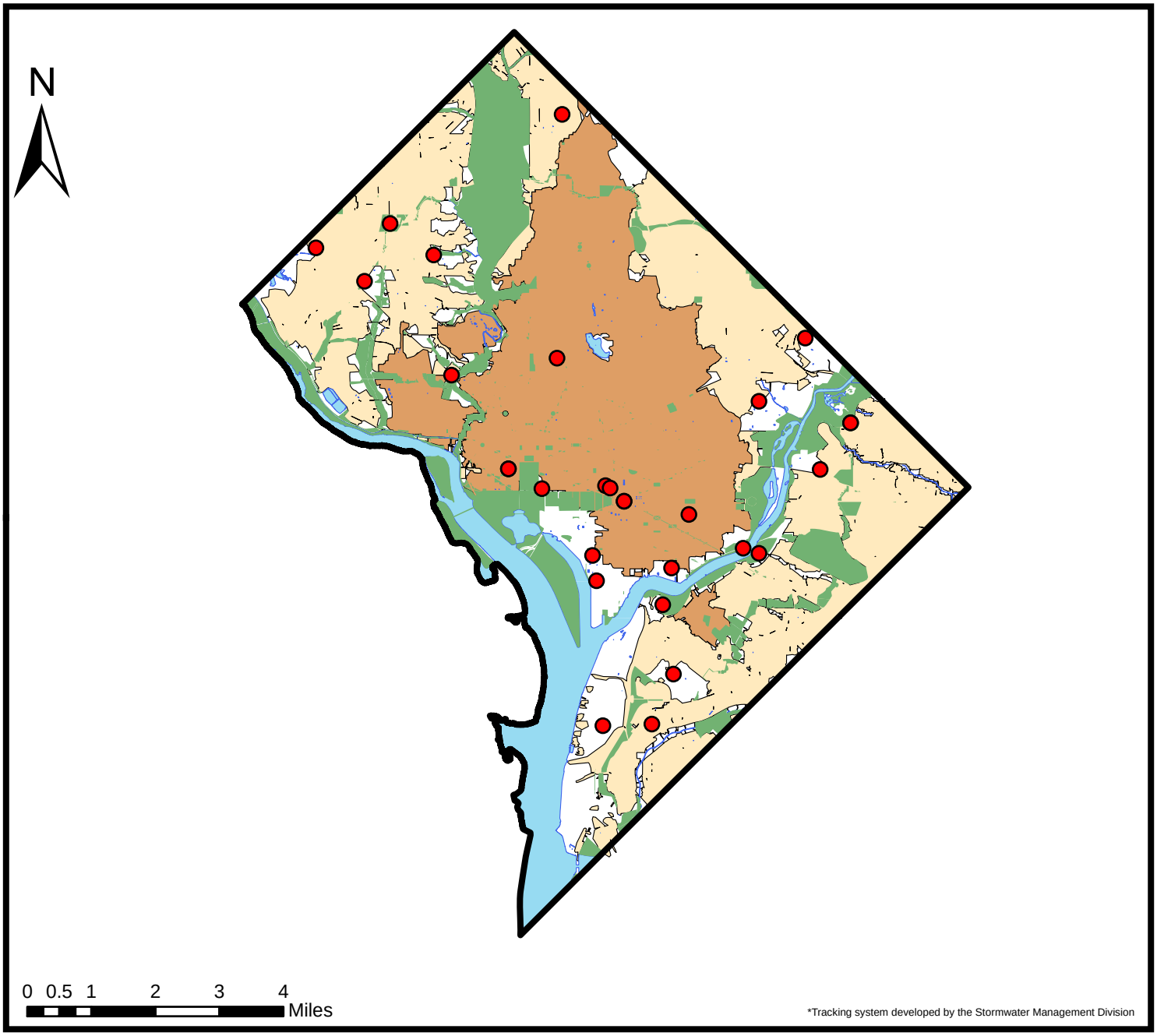
*Tracking system developed by the Stormwater Management Division

Legend

- BMPs Approved in 2000
- BMPs Approved in 2001
- BMPs Approved in2002
- BMPs Approved in 2003
- BMPs Approved in 2004
- BMPs Approved in 2005
- BMPs Approved in 2006
- BMPs Approved in 2007
- CSO
- Water
- Park



Location of CERCLIS sites in the District

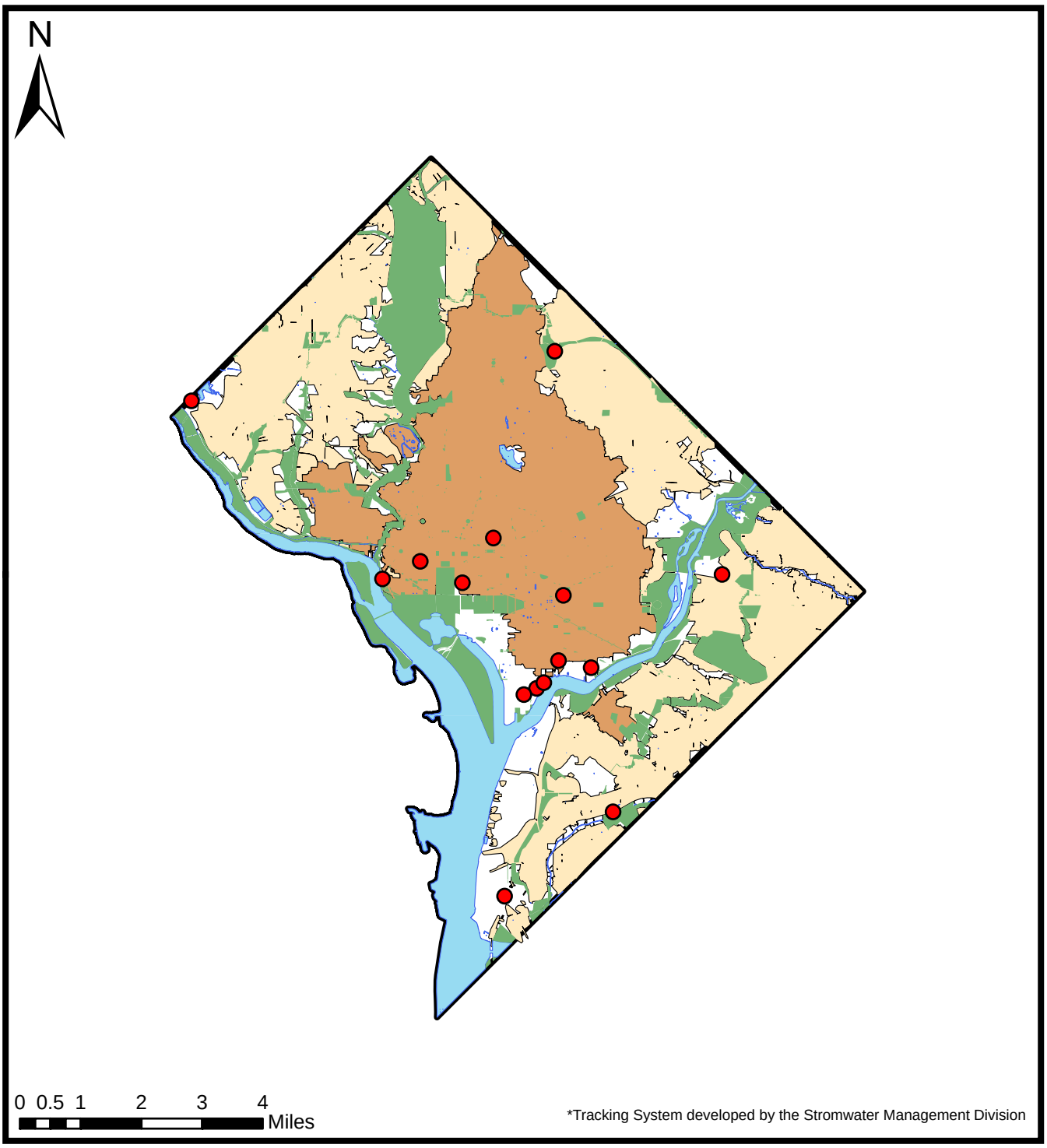


Legend

- CERCLIS SITES
- Park
- Water
- CSO
- MS4

EPA ID	Site Name
DCN000306144	2005 INAUGURAL PRE-DEPLOYMENT SITE
DCN000305703	CAPITOL HILL ANTHRAX SITE
DCN000306094	CAPITOL HILL RICIN SITE
DCN000306151	CARDOZO HIGH SCHOOL MERCURY SITE
DCN000305870	CUSTIS & BROWN BARGE SPILL
DCN000305729	DEPARTMENT OF COMMERCE MAIL RESPONSE
DCN000305704	DIAMOND ORDNANCE FUZE LAB
DCN000305710	EPA MAIL ROOMS
DCN000306550	FORMER PRESIDENT FORD FUNERAL SECURITY DETAIL
DC9470090003	FORT LINCOLN BARREL SITE
DC8210021004	FORT MCNAIR
DCN000306605	FORT RENO
DCN000305916	GENERAL SERVICES ADMINISTRATION BUILDING 410
DCSFN0305524	GLOVER BRIDGE SITE
DCN000305625	HUD PCB SPILL
DCSFN0305462	KENILWORTH PARK LANDFILL SITE
DCD003254273	NPS - ANACOSTIA PARK SECTIONS E & F
DCD983967951	PEPCO BENNING ROAD FACILITY
DCN000305662	POPLAR POINT NURSERY
DC0001401637	SEAFARERS YACHT CLUB ER
DC8470090004	SOUTHEAST FEDERAL CENTER (GSA)
DC9751305997	ST ELIZABETH'S HOSPITAL
DCN000305732	US POSTAL SERVICE - BRENTWOOD
DC5570024443	USAF BOLLING AIR FORCE BASE
DC7120507432	USDA NATIONAL ARBORETUM
DC1170023476	USN NAVAL SECURITY STATION
DC4210021156	WALTER REED ARMY MEDICAL CENTER
DCD983971136	WASHINGTON D.C. CHEMICAL MUNITIONS SITE (SPRING VALLEY)
DCN000306000	WASHINGTON DC MERCURY INCIDENT
DCD077797793	WASHINGTON GAS LIGHT SITE
DC9170024310	WASHINGTON NAVY YARD

Industrial Facilities in the District of Columbia with Individual or Site specific Storm Water NPDES Permits



Legend

- NPDES Permits
- Park
- Water
- MS4
- CSO

APPENDIX E

DISTRICT OF COLUMBIA FACILITIES LISTED UNDER CERCLA OR HAVING AN NPDES PERMIT

APPENDIX E. DISTRICT OF COLUMBIA FACILITIES LISTED UNDER CERCLA OR HAVING AN NPDES PERMIT

Table E-1. List of D.C. Sites Subject to SARA Title III or EPCRA

CERCLIS EPA ID	SITE NAME
DCN000306144	2005 Inaugural Pre-Deployment Site
DC5570024443	Bolling Air Force Base
DCN000305703	Capitol Hill Anthrax Site
DCN000306094	Capitol Hill Ricin Site
DCN000306151	Cardozo High School Mercury Site
DCN000305870	Custis & Brown Barge Spill
DCN000305704	Diamond Ordnance Fuze Lab
DCN000305710	EPA Mail Rooms
DCN000306550	Former President Ford Funeral Security Detail
DC8210021004	Fort Leslie J McNair
DC8470090004	General Services Administration
DCN000305916	General Services Administration Building 410
DCSFN0305524	Glover Bridge Site
DCN000305625	HUD PCP Spill
DCSFN0305462	Kenilworth Park Landfill Site
DC1170023476	Naval Security Station
DCD003254273	NPS - Anacostia Park Sections E & F
DCD983967951	PEPCO Benning Generating Station
DCN000305662	Poplar Point Nursery
DC0001401637	Seafarers Yacht Club ER
DC9751305997	St. Elizabeth Hospital
DC7120507432	US DA National Arboretum
DCN000305729	US Dept Of Commerce
DCN000305732	US Postal Service
DC9170024310	US Washington Navy Yard
DC9470090003	USA Fort Lincoln Barrel Site
DC4210021156	Walter Reed Army Medical Center
DCD983971136	Washington D.C. Chemical Munitions Site (Spring Valley)
DCN000306000	Washington D.C. Mercury Incident
DCD077797793	Washington Gas East Station

Based on data extracted from online EPA CERCLIS database July 2008 (www.epa.gov/enviro).

Table E-2. Industrial Facilities in the District of Columbia with Individual or Site-specific Storm Water NPDES Permits

Facility Name	NPDES Permit Number	Date Issued (Expiration)	Receiving Waters
Amerada Hess Corporation Washington Terminal	DC0000051	15-Nov-00 (14-Nov-05)	Anacostia River
CMDT Naval District Washington DC	DC0000141	27-Feb-01 (26-Feb-06)	Anacostia River
CTIDC	DC0000191	3-Jun-04 (2-Jun-09)	Anacostia River
D.C. WASA (Blue Plains)	DC0021199	25-Feb-03 (24-Feb-08)	Potomac, Anacostia, & Piney Rivers
Government of the District of Columbia	DC0000221	19-Aug-04 (18-Aug-09)	Potomac River, Anacostia River & Tributaries
GSA-National Capital Region (NCR) Heating Operation and Transmission District (HOTD) (Central Heating Plant)	DC0000035	11-Sep-01 (10-Sep-06)	Rock Creek
GSA-Southeast Federal Center	DC0000299	1-Jul-03 (30-Jun-08)	Anacostia River
Hqts. Naval District Washington	DC0000159	25-Nov-92 (24-Nov-97)	Anacostia River
JFK Center for Performing Arts	DC0000248	27-Jul-01 (26-Jul-06)	Potomac River
Maryland Rock Industries, Inc.	DCR05A046	7-Apr-00 (6-Apr-05)	Anacostia River
Mirant Potomac River /Potomac Electric Power Co	DC0022004	20-Apr-00 (19-Apr-05)	Potomac River
National Gallery of Art	DC0000167	14-Dec-01 (13-Dec-06)	Washington Ship Channel
PEPCO-Benning Gen. Sta.	DC0000094	17-Nov-00 (16-Nov-05)	Anacostia River
Super Concrete Corporation	DC0000175	12-May-03 (11-May-08)	Anacostia River
U.S. Army Corps of Engineers Washington Aqueduct Division Dalecarlia WTP	DC0000019	15-Apr-03 (14-Apr-08)	Potomac River
WMATA-Mississippi Avenue DPS	DC0000337	24-Jan-06 (23-Jan-11)	Oxon Run
Walter Reed Army Medical Center	DC0000361	23-Jul-08 (22-Jul-13)	Rock Creek

- Retrieved from online EPA Permit Compliance System (PCS) (www.epa.gov/enviro, July 2008).
- GSA Southeast Federal Center, D.C. Government, Washington Navy Yard, and WMATA hold site-specific storm water permit