GOVERNMENT OF THE DISTRICT OF COLUMBIA
WASHINGTON, DC

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221

2005 ANNUAL REPORT

On Storm Water Pollution Control

AUGUST 19, 2005

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Mayor

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LIST OF ACRONYMS AND ABBREVIATIONS

Act	'Storm Water Permit Compliance Amendment Act of 2000'
ARBC	Anacostia River Business Coalition
ARS	USDA Agricultural Research Service
AWRC	Anacostia Watershed Restoration Committee
AWS	Anacostia Watershed Society
BMP	Best Management Practice
CBF	Chesapeake Bay Foundation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
District	District of Columbia
DCMR	District of Columbia Municipal Regulations
DC DPR	District of Columbia Department of Parks and Recreation
DCRA	Department of Consumer and Regulatory Affairs
DDOT	District Department of Transportation
DMR	Discharge Monitoring Report
DOH	Department of Health
DOT	U.S. Department of Transportation
DPW	Department of Public Works
EE-CARS	Environmental Education for the Compliance of Automotive Repair Shops
EMC	Event Mean Concentration
EPA	U.S. Environmental Protection Agency

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

EPCRA	Emergency Planning and Right-to-Know Act
FEMA	Federal Emergency Management Agency
Fund	Storm Water Enterprise Compliance Fund
FY	Fiscal Year
GIS	Geographic Information System
GPS	Global Positioning System
GSA	US General Services Administration
HWD	Hazardous Waste Division
ICPRB	Interstate Commission on the Potomac River Basin
IPM	Integrated Pest Management
LID	Low Impact Development
mg/L	Milligram(s) Per Liter
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MWCOG	Metropolitan Washington Council of Governments
NA	National Arboretum
NAVFAC	Naval Facilities Engineering Command
NPDES	National Pollutant Discharge Elimination System
NOI	Notice of Infraction
NOV	Notice of Violation
NRCS	Natural Resources Conservation Service
NRDC	Natural Resources Defense Council

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

Permit	National Pollutant Discharge Elimination System Permit
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SCI	Sustainable Community Initiatives
SWEEP	Solid Waste Education and Enforcement Program
SWM	Storm Water Management
TMDL	Total Maximum Daily Load
USDA	U.S. Department of Agriculture
USFWS	United States Fish and Wildlife Service
VMS, Inc.	DDOT subcontractor for federal highway maintenance.
WASA	District of Columbia Water and Sewer Authority
WLA	Waste Load Allocations
WPCCP	Water Pollution Control Contingency Plan
WPD	Department of Health Watershed Protection Division
WQD	Department of Health Water Quality Division

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY
Washington, D.C.

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221
2005 Annual Report
On Storm Water Pollution Control

SUMMARY AND FINDINGS

S.1 GENERAL

The Government of the District of Columbia (District) submits this Annual Report on storm water pollution control in compliance with its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Water System Permit No. DC0000221. This Annual Report is submitted together with the Implementation Plan and Discharge Monitoring Report (DMR) in compliance with the reporting requirements as defined in Parts II, III.A, III.B, III.C, III.D, IV.B, V, and VI of the Permit.

The purpose of the District's MS4 program is to reduce pollutant loading from the MS4 to receiving waters, and contribute towards meeting District water quality standards and the approved Total Maximum Daily Load (TMDL) for those waters. This Annual Report details MS4 permit-related activities conducted by District agencies during calendar year 2004 to reduce and control pollutant discharge from the MS4 to the Potomac and Anacostia Rivers and their tributaries.

S.2 BACKGROUND

The Environmental Protection Agency (EPA) re-issued an MS4 NPDES Permit (Permit) to the District on August 19, 2004: effective for a five-year period. The Permit allows discharges from the MS4 to the Potomac and Anacostia Rivers and tributaries in accordance with the conditions of the Permit.

Aspects of the Permit are based on the upgraded Storm Water Management Plan submitted to EPA on October 19, 2002. This plan describes the District's Storm Water Management Program to control pollutant discharge from the MS4 to the Potomac and Anacostia Rivers and their tributaries.

On June 12, 2001 DC Law #13-311 'Storm Water Permit Compliance Amendment Act of 2000 was made final by the District of Columbia to amend the powers of the Water and Sewer Authority (WASA) to engage in certain MS4 permit compliance activities. The Act created a Storm Water Administration within WASA and established WASA as its lead agency to coordinate actions among other District agencies in connection with permit compliance activities.

To capitalize the District's storm water activities, the Act authorized WASA to collect a flat storm water fee from retail water customers within the District. WASA began charging the storm water fee with the billing cycle that started July 1, 2001. The District is currently investigating a modified fee structure based on the impervious area of a user's property. The storm water fee was established specifically to meet the needs of the MS4 permit issued in 2000.

A Memorandum of Understanding (MOU) was executed on December 11, 2000 with the District, the Chief Financial Officer of the District of Columbia, WASA, the Department of Health (DOH) and the Department of Public Works (DPW). The MOU assigns responsibilities among the foregoing parties for compliance with the Permit. The District Department of Transportation (DDOT) has, since 2002, taken on responsibilities formerly assigned to DPW, concerning the construction and maintenance of streets and roads and the removal of snow and ice. With the issuance of the new Permit in 2004, an updated MOU is currently being developed in order to address additional requirements of the Permit from each of the Agencies.

S.3 ANNUAL REPORT SUMMARY OF FINDINGS

This Annual Report delineates the significant achievements that were made in calendar year 2004 addressing the required provisions of the Permit. The following subsections summarize the activities over the past year

- to reduce pollutant loading from MS4 outfalls,
- to explain progress in the development of programs, systems, and the legal framework to manage activities; and,
- to integrate storm water management responsibility into various agencies within the District of Columbia, including the District government, private industry, and citizen activities.

S.3.1 Highlights

In 2004, the District added or expanded ongoing storm water pollution control compliance activities. A summary of new and expanded activities includes:

- Completion of the *District of Columbia Soil Erosion and Sediment Control Standards and Specifications* and the District's *Storm Water Guidebook.*
- Expansion of the District's LID program through construction demonstration projects, grants to groups demonstrating LID techniques, partnering with DC Public Schools, and establishing a Schoolyard Consortium to promote the construction of schoolyard training habitats that incorporate LID techniques.
- Completion of the refurbishment of the solid waste transfer station on Benning Road, and the installation of storm water controls.
- Development of new educational materials in every agency, including, leaf collection and snow removal pamphlets, Integrated Pest Management and Fertilizer workshops, construction regulation workshops, the EE-CARS program to automotive repair and service businesses, and updates to the DC MS4 web pages.
- Promotion of the Illicit Discharge Enforcement Manual and increased activities in the detection and enforcement of illicit discharge control.
- Expanding the MS4 Graphical Information System (GIS) database to include information gathered from field verification of the MS4 outfalls.

S.3.2 Source Identification

The existing MS4 infrastructure mapping and outfall location data have been combined to develop a database. The District completed verification of 50% of the MS4 outfall locations by the end of 2004 and is on target to meet the goal of completing field verification of 75 percent of the system by the end of 2005. Outfall coordinates obtained by GPS are being recorded in the MS4 Program outfall database. Concurrent with the outfall verification program, illicit discharge inspections are being conducted and a database of outfalls with dry weather flow created.

S.3.3 Management Plan for Commercial, Residential, and Federal and District Government Areas

The specific requirement to develop and implement a program to control storm water discharges from Federal and District-government areas is progressing. DOH works closely with District and Federal agencies in the review and construction of new and re-build projects throughout the district. DOH is active in promoting functional landscaping and LID projects. WASA and DPW continue to clean and maintain the streets and MS4 infrastructure, and DDOT is active in promoting BMPs in its new and rebuild road construction projects.

S.3.4 Management Plan for 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 this program. The implementation of the management plan for industrial facilities will control and reduce storm water pollution from industrial facilities in accordance with the requirements of the Clean Water Act.

S.3.5 Management Plan for Construction Sites

DOH has a strong inspection and enforcement program for commercial and residential areas and is working diligently to strengthen its erosion control program for new construction. DOH has increased its environmental inspection and enforcement activities on federal and District of Columbia government projects, including road construction and rehabilitation projects. In an effort to further strengthen the erosion control program for new construction, DOH WPD has completed the revised *District of Columbia Soil Erosion and Sediment Control Standards and Specifications* and the *Storm Water Management Guidebook.* The revised standards incorporate new and innovative BMPs for erosion and sediment control at construction sites. Both documents were finalized and have been made available to the public.

S.3.6 Flood Control Projects

The feasibility of retrofitting existing flood control devices to provide additional pollutant removal from storm water has not been evaluated. The U.S. Army Corps of Engineers continues to maintain the existing flood control infrastructure to ensure the maximum flood control capabilities from the existing system.

S.3.7 Control of Pollution from Municipal Landfills and Other Municipal Waste Facilities

DPW is currently upgrading SWM systems to control pollutants in storm water discharges from its two existing transfer stations. There are no active landfills within the boundaries of the District.

S.3.8 Control of Pollutants from Hazardous Waste Sites

DOH-WQD continues to investigate facilities that generate or store hazardous waste. General inspections follow protocols developed to govern field investigations. A general plan for hazardous waste monitoring and control, and standard operating procedures for hazardous waste reporting were included as part of the October 2002 Upgraded Storm Water Management Plan. DOH-WQD 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. DOH-WQD continues to update Federal and District facility information as needed.

S.3.9 Pesticides, Herbicides and Fertilizer Application

The DOH "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, workers, and ground water. Control of pesticide, herbicide, and fertilizer applications has also been integrated into the "Public Education Program".

S.3.10 Deicing Activities

The District has implemented the results of the comparison study and uses the corn-based snow and ice-melting product IceBan® as a pre-treatment on selected highways and bridges. DDOT is developing a facility to produce brine as a pre-treatment for snow and ice.

S.3.11 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. At this time no alternate snow removal plan is envisioned. The existing snow removal plan was reviewed as part of the upgraded Storm Water Management Plan submitted in October 2002.

S.3.12 Management Plan to Detect and Remove Illicit Discharges

DOH 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 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 are part of the *Draft Water Quality Division Enforcement and Compliance Manual* under review by the District. This draft was discussed in the upgraded Storm Water Management Plan submitted in October 2002.

S.3.13 Enforcement Plan

DOH updated the "*Draft Water Quality Division Enforcement and Compliance Manual"*, during 2003. The strategies outlined in the manual provide the standard procedures for water quality-related inspections and enforcement activities within the District.

S.3.14 Public Education

Public education activities have been integrated into existing and newly-developed storm water management programs and expanded into new areas such as the WASA public web page. A workshop and trade show was presented to educate the regulated community on the technical and compliance issues relate to the District's erosion control and storm water management program. Public education efforts in the past year have produced a number of new educational programs targeted towards environmental educators, teachers and students throughout the District. The Storm Water Administration presented grants to environmental organizations to conduct pollution minimization assessments, and cash awards to students participating in the District-wide Mathematics, Science and Technology Fair. Public education programs continue to include an environmental education resource center, conservation education, teacher training workshops and grants for promoting pollution prevention.

S.3.15 Monitoring of Storm Water Outfalls

The Discharge Monitoring Report submitted with this Annual Report under separate cover includes data and analysis of the storm event discharge monitoring program, the dry weather monitoring program, and the wet weather screening program.

S.3.16 Storm Water Model

The District maintains and continues to update a storm water model of the district area and its MS4. The model includes GIS information regarding the district land use, runoff characteristics, the MS4 system, outfall inspections, and pollutant estimates.

S.3.17 Hickey Run Total Maximum Daily Load

The District continues to implement a water quality monitoring program for Hickey Run, and has prepared a draft management plan for Hickey Run. As part of the management plan, the District is working with the National Arboretum in planning the installation of a BMP to reduce the amount of oil and grease and floatable debris discharged into Hickey Run. An MOU detailing the construction of the BMP has been signed by WASA, DOH, and the National Arboretum, and a consultant is in the process of finalizing the BMP design.

S.3.18 TMDL Waste Load Allocation Implementation Plan

The District is developing implementation plans for the reduction of the MS4 waste load allocation toward meeting the TMDLs specified for its waterways. In 2004, the District has taken steps to develop an implementation plan for compliance with the TMDL of pollutants originating on land areas in the Anacostia watershed within the District. This plan was submitted to EPA in February 2005. The Rock Creek TMDL Waste Load Allocation Plan is submitted under separate cover on August 19, 2005.

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY
Washington, D.C.

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221
2005 Annual Report
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1.0 INTRODUCTION AND METHODOLOGY

1.1 GENERAL

The Government of the District of Columbia (District) submits this Annual Report on storm water pollution control for the period January through December 2004 in compliance with its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit No. DC0000221. This Annual Report is submitted together with the Implementation Plan and Discharge Monitoring Report (DMR) in compliance with the reporting requirements as defined in Parts II, III.A, IIIB, III.C, III.D, IV.B. V, and VI of the Permit.

The purpose of the District's MS4 program is to reduce pollutant loading from the MS4 to receiving waters, and contribute towards meeting District water quality standards and the approved Total Maximum Daily Load (TMDL) for those waters. This Annual Report details MS4 permit-related activities conducted by District agencies during calendar year 2004 to reduce and control pollutant discharge from the MS4 to the Potomac and Anacostia Rivers and their tributaries. Additional District agencies, federal, regional, and non-profit organizations conduct activities that impact storm water pollutants entering the MS4. A listing of these organizations is included in Appendix 1-A. While not part of the MS4 program, and in many cases explicitly prohibited from being counted towards compliance with the MS4 permit, the effort by these organizations to control storm water runoff contribute directly and indirectly to the reduction of pollutants in discharges from the MS4, and/or result in improved water quality in receiving waters.

1.2 BACKGROUND

The U.S. Environmental Protection Agency (EPA) issued an MS4 NPDES permit (Permit) to the District on April 19, 2000. The Permit allows discharges from the MS4 to the Potomac and Anacostia Rivers and tributaries in accordance with the conditions of the Permit. The 2000 NPDES Permit was effective for a three year term.

On October 19, 2002, the District applied for a new NPDES permit and submitted an upgraded Storm Water Management (SWM) Plan for approval. This plan describes the District's SWM Program to control pollutant discharge from the MS4 to the Potomac and Anacostia Rivers and their tributaries. On August 19, 2004, EPA reissued the District's MS4 NPDES permit for a five-year term. A copy of the 2004 NPDES permit is available at the EPA website (http://www.epa.gov/reg3wapd/npdes/).

In response to EPA comments on the SWM Plan, the District completed an addendum to this Plan in December 2004. The addendum provided clarification and additional appendices describing the activities included in the plan.

1.2.1 Storm Water Act

On June 12, 2001, DC Law #13-311[1] "Storm Water Permit Compliance Amendment Act of 2000" (Act) was made final by the District of Columbia to amend the powers of the Water and Sewer Authority (WASA) to engage in certain MS4 permit compliance activities. The Act created a Storm Water Administration within WASA and established WASA as its lead agency to coordinate actions among other District agencies, including the Department of Health (DOH), Department of Public Works (DPW), and the District Department of Transportation (DDOT), in connection with MS4 permit compliance activities. The General Manager of WASA is empowered to designate a person to lead this new Storm Water Administration and to oversee agency activities that support compliance with the existing MS4 Permit.

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[1] Law 13-311, the "Storm Water Permit Compliance Amendment Act of 2000," was introduced in Council and assigned Bill No. 13-813, which was referred to the Committee on Public Works and the Environment. The Bill was adopted on first and second readings on December 5, 2000, and December 19, 2000, respectively. Signed by the Mayor on January 22, 2001, it was assigned Act No. 13-311 and transmitted to both Houses of Congress for its review. D.C. Law 13-311 became effective on June 13, 2001.

To fund these implementation activities, the Act established a Storm Water Permit Compliance Enterprise Fund (Fund). Monies from the Fund are to be available to the participating agencies for costs incurred because of MS4 Permit mandated activities, including administration, operations, and capital projects.

The Act requires DOH, DPW, and DDOT together with WASA to prepare and transmit a Semi-Annual Report every six months following the effective date of the Act to the Mayor and the Council of the District of Columbia. This report describes the activities undertaken in the previous six months and outlines activities planned for the following six months. These semi-annual reports must include descriptions of storm water related activities, including:

- compliance with MS4 Permit requirements;
- administrative, planning, and regulatory actions;
- operation, maintenance, and capital improvements of storm water facilities;
- expenditures from the Fund, and expenditures on related storm water activities from annual appropriations and federal grants.

A copy of the Semi-Annual Report (June 2005), is provided in Appendix 1-B and is available at the Martin Luther King, Jr. Library.

1.2.2 Memorandum of Understanding

WASA executed a Memorandum of Understanding (MOU) on December 11, 2000, with the District, the Chief Financial Officer of the District, DOH, and DPW. As of October 1, 2002, the newly formed DDOT became party to the MOU as it took on some of the responsibilities formerly assigned to DPW. The MOU assigns responsibilities among the foregoing parties for compliance with the Permit. The MOU continues as a coordination mechanism among the signatories in complying with the Permit. A copy of the current MOU is provided in appendix 1-C.

The MOU mandates the preparation of an Agency Compliance Plan each year. This plan sets forth each agency's proposed budget plan dedicated for MS4 permit compliance activities and a statement of its sufficiency. The Storm Water Administrator, the person designated by the General Manager to head the new Storm Water Administration within

WASA, is responsible under the MOU to review each agency's plan and determine whether it adequately funds MS4 permit compliance activities. In accordance with the MOU, the Storm Water Administrator shall notify the agency, the Mayor and City Council of funding deficiencies found in any agency plan and necessary correction actions. The 2005 Agency Compliance Plan was prepared and submitted to the City Council on November 15, 2004. A copy of the 2005 Agency Compliance Plan is provided in Appendix 1-C or at the Martin Luther King, Jr. Library.

The MOU and Compliance Matrix attached to the MOU are currently being updated to reflect the requirements of the August 2004 permit and changes within the District's SWM program, such as the creation of DDOT as a separate agency. It is expected that the new MOU will be completed and signed in 2005.

1.2.3 Storm Water Permit Compliance Enterprise Fund

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

WASA began charging the storm water 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 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. WASA has established a system to approve and reimburse eligible expenditures from the Fund.

The District is currently investigating a modified storm water rate structure based on the amount of impervious area on a user's property. In April 2003, WASA completed a draft rate study report as part of the Long Term Control Plan to control combined sewer overflows. The draft report was entitled *Feasibility Analysis of a Rate for Cost Recovery for Stormwater and Combined Sewer Overflow Control Programs in the District of Columbia*. The report addressed rate recovery issues for both the combined sewer system, and the MS4. In summary, the report indicates that:

1. An equivalent billing unit method, based on representative shares of impervious surface area, is straightforward and provides an equitable allocation of costs for storm water pollution control activities.

2. The implementation of the equivalent billing unit cost recovery system may be an involved undertaking.

1.2.4 Annual Reporting

The District submitted the 2004 Annual Report, Implementation Plan, and Discharge Monitoring Report to the EPA on April 19, 2004. The Annual Report described MS4 permit-related activities conducted by District agencies during calendar year 2003, while the 2004 Implementation Plan outlined projected activities scheduled for the three fiscal years FY 2004 through FY 2006. The Discharge Monitoring Report included the analytical laboratory results of discharge samples collected during 2003. EPA accepted the 2004 Annual Report on October 6, 2004. A copy of the letter accepting these deliverables is included in Appendix 1-D. The August 2004 permit established August 19th as the due date for annual reporting requirements for the new permit.

1.2.5 Permit Administration

As the lead agency designated by the Storm Water Act, WASA is administrating the MS4 Permit. In December 2001, WASA completed procurement of an MS4 Permit Program Management contract. EA Engineering, Science, and Technology, Inc. will continue to provide engineering consulting and administrative support for the MS4 Permit activities under this contract until September 2005. It is expected that WASA will extend this contract for one year until September 2006 to cover the transition period related to a potential transfer of the MS4 Administration to a District government agency.

1.3 COST BENEFIT ANALYSIS, BUDGET FOR THE FOLLOWING YEAR, AND A SUMMARY OF COMMITMENTS FOR THE FOLLOWING YEAR

A cost benefit analysis of current and planned MS4 permit activities is included in the 2005 Implementation Plan submitted together with this report. The Implementation Plan explains the activities and anticipated budgets planned for the next four fiscal years.

Implementation of the budgeted activities outlined in the 2005 Implementation Plan will substantively fulfill the requirements of the current Permit. The plan will continue current activities to manage storm water pollution and encourage improved storm water management techniques, while providing the organization, legal framework, technical evaluation, and specific data necessary to ensure progress and track improvement in storm water quality discharged from the MS4.

1.4 METHODOLOGY TO ASSESS THE EFFECTS OF THE STORM WATER MANAGEMENT PLAN IN REDUCING POLLUTION AND ACHIEVING THE REQUIREMENTS OF THE CLEAN WATER ACT

Assessing the effects of the SWM program in reducing pollution and achieving the requirements of the Clean Water Act involves a variety of measurement metrics and processes. According to the EPA Guidance Manual entitled "*Guidance Manual for the Preparation for Part 2 of the NPDES Permit Applications from Municipal Separate Storm Sewer Systems*," there are two ways to assess the SWM program. They are:

1. *Direct Measurement, which includes the number of Best Management Practices (BMPs) installed, removal efficiencies, storm water 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 storm water 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, DOH 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 storm water 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 Low Impact Development (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 reduction from a BMP is typically expressed as a percentage reduction (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% reduction of oil and grease in a BMP installed near an automotive repair shop, or 80% 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 storm water management activities reported by District agencies. While these measures are qualitative and not quantitative, the level of effort, equipment and manpower for each storm water management 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 installation, 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.

1.5 ORGANIZATION OF THE ANNUAL REPORT

The report's outline follows the organization of the Permit, and includes the following sections:

1.0 Introduction and Methodology

2.0 Storm Water Pollution Control: Source Identification

3.0 Storm Water Pollution Control: Management Plan for Commercial, Residential, and Federal and District Government Areas

4.0 Storm Water Pollution Control: Management Plan for Industrial Facilities

5.0 Storm Water Pollution Control: Management Plan for Construction Sites

6.0 Storm Water Pollution Control: Flood Control Projects

7.0 Storm Water Pollution Control: Municipal Landfills and Other Municipal Waste Facilities Management

8.0 Monitor and Control of Storm Water Pollutants From Hazardous Waste Sites

9.0 Storm Water Pollutant Control: Pesticides, Herbicides, and Fertilizer Application Management

10.0 Storm Water Pollution Control: Deicing Activities Management

11.0 Storm Water Pollution Control: Snow Removal Management

12.0 Storm Water Pollution Control: Management Plan to Detect and Remove Illicit Discharges

13.0 Storm Water Pollution Control: Enforcement Plan

14.0 Storm Water Pollution Control: Public Education

15.0 Storm Water Pollution Control: Monitoring and Reporting Requirements

16.0 Storm Water Pollution Control: Storm Water Model Using a Geographical Information System

17.0 Hickey Run Storm Water Pollution Control Using The Total Maximum Daily Load

18.0 Total Maximum Daily Load Waste Load Allocation Implementation Plans

Each section begins with a summary of the Permit requirements followed by a brief summary of permit compliance activities conducted in 2004.

Supporting details and complete discussion of activities related to the section subject are then presented. Specific details are presented in order of the requirement listing in the Permit to facilitate review and comparison.

2.0 STORM WATER POLLUTION CONTROL: SOURCE IDENTIFICATION

2.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

2.1.1 Permit Requirements

Part II of the Permit describes the requirements for Source Identification.

2.1.2 Compliance Summary

The source identification program emphasizes the collection of data regarding the population, land use activities and storm water runoff potential in the District. A summary of these compliance activities is as follows.

- Land use activities
- Population estimates
- Runoff characteristics
- Major structural controls
- Landfills
- Publicly owned lands
- Industries

Section 2.2 below provides details of significant changes for these activities.

2.2 SIGNIFICANT CHANGES

Significant changes are defined as, “changes considered to have the potential to be of an important nature that revise, enhance, or otherwise modify the physical, legal, institutional, or administrative condition of land use activities, population estimates, runoff characteristics, major structural controls, landfills, publicly owned lands, and

industries."[1] This definition was incorporated into Part II of the Permit issued on August 19, 2004.

2.2.1 Land Use Activities

The District is highly urbanized, with little available land for further development. All new development and development of existing areas is subject to the District's storm water regulations with a review by DOH. The land use and impervious area must be indicated on all plans submitted to DOH Watershed Protection Division (WPD) 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 over the past year have not resulted in a significant change for the existing land use activities in the portion of the District served by the MS4.

2.2.2 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[2]. According to the 1990 Census there were 606,900 people residing in the City. This is a decrease in population of 34,481 people or 5.7%. A projected population estimate for 2003 indicated that the 2000 census number could decline by 1.5% (563,384). While these population declines over the past 10 years are not considered significant with respect to sources of pollution in storm water, a continued trend in population reduction could result in future changes. A summary of the 2000 U.S. Census for the District was included in the 2004 Annual Report.

2.2.3 Runoff Characteristics

As noted in Section 2.2.1, no significant changes in land use activities were identified during the past year. Therefore, no significant changes in the runoff characteristics were identified in the MS4 drainage area.

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[1] The *2001 Annual Review*, dated April 19, 2001defined this term.

[2] http://quickfacts.census.gov/qfd/states/11000.html

2.2.4 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 system during the past year.

A sample of the minor structural controls being added by the District to the MS4 area include:

- Human Rights Campaign 2000 sq. ft. greenroof;
- Casey Trees foundation green roof, 1500 sq. ft,;
- National Park Service HQ raingarden in SE Anacostia;
- Architect of the Capitol raingarden NE;
- Benning Road Bridge, raingarden, SE;
- PEPCO Power Generation Facility raingarden #2 on Benning Road SE;
- Elevation 314 green roof and raingardens (privately funded);
- Peabody Elementary school, NE, pavers (grass and brick paver systems).

2.2.5 Landfills

There are no active landfills within the District.

2.2.6 Publicly Owned Lands

The National Park Service is the primary public entity holding land within the MS4 area of the District. According to the fiscal year 2001 listing of acreage by Park, the National Park Service owns 4,327 acres within the District. According to the 1997 listing of acreage, there were 4,328 acres under the control of the National Park Service. This is a decrease of 1 acre over the last five years.

The US Department of Agriculture Agricultural Research Service 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 also controls

acreage in the District. According to Parks and Recreation personnel, there are 867 acres of land under its control. The amount of publicly owned lands in the District has been stable over the last year with no significant changes in public land ownership.

2.2.7 Industries

No significant changes in industrial activity were identified over the past year. The Industrial Facilities Database has been updated and is discussed in detail in Section 4 of this report. The database will continue to be used to track changes in industrial activity in the District.

3.0 STORM WATER POLLUTION MANAGEMENT PLAN FOR COMMERCIAL, RESIDENTIAL, AND FEDERAL AND DISTRICT GOVERNMENT AREAS

3.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

3.1.1 Permit Requirements

Part III.B.1 of the Permit requires the District to implement the October 19, 2002 SWM Plan, to reduce the discharge of pollutants from Commercial, federal and District government owned/operated facilities, and residential areas into the District MS4.

3.1.2 Compliance Summary

The District has developed and continues to implement a program to control storm water 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 storm water pollutants from federal lands. However, District of Columbia Municipal Regulations (DCMR) requires 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, DOH has signed agreements with DDOT and the General Services Administration (GSA), which requires federal contractors working on buildings or highway improvements to comply with the District's erosion and sediment control regulations. DOH reviews construction plans submitted by DPW, DDOT and WASA with respect to these requirements.

The management plan for storm water pollution control on commercial, residential and Federal and District government areas entail a mixture of programs emphasizing structural and non-structural BMPs and educational programs. A summary of these compliance activities is as follows.

- District regulatory requirements, such as the *Soil Erosion and Sediment Control Standards and Specifications* and the *District Storm Water Guidebook*.

- 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.
- Mapping of storm water impacts
- Strengthening erosion control for new construction
- Continuing to work with federal and District facilities in order to implement and maintain storm water pollution controls on new and re-build construction.

Section 3.2 below provides details of these activities.

3.2 MANAGEMENT PLAN FOR COMMERCIAL, RESIDENTIAL, AND FEDERAL AND DISTRICT GOVERNMENT AREAS ACTIVITIES

The general requirements of the Permit entail a mix of programs to comply with the Clean Water Act. A coordinated program of activities is included in the management plan for commercial, residential, and Federal and District government areas. The following sections detail progress for each activity over the past year.

3.2.1 DC Storm Water Manual

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

In 2004, DOH WPD completed the revised *District of Columbia Soil Erosion and Sediment Control Standards and Specifications*, and the revised and updated the District's *Storm Water Guidebook.* These standards and specifications are followed by all District builders, whether private, commercial, Federal or District, for all new and rebuild construction sites. The revised *Storm Water Guidebook* details the use of new and innovative BMPs for erosion and sediment control and the control of storm water pollutants at new and rebuild construction sites. Water quality BMPs are required for

new and rebuild construction sites in order to reduce the quantity of pollutants to the MS4.

DOH encourages builders to use storm water BMPs for all new and rebuild construction sites through both the plan review process and the provision of BMP design criteria in the *Storm Water Guidebook*. BMPs discussed in the guidebook include LIDs such as underground sand filters, infiltration and bioretention trenches, roof downspout system design, organic and bioretention filters, and swales, as well as larger BMPs such as wetland and micro-pool ponds and dry ponds. A list of BMPs used in the District's *Storm Water Guidebook* is given in the 2004 Annual Report.

3.2.2 Functional Landscaping

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

DOH WPD will continue to encourage developers to incorporate functional landscaping techniques in their site development plans as part of the requirements to comply with the District's floodplain management, erosion and sediment control, and storm water management regulations. This is accomplished by inviting developers to training sessions where functional landscaping is demonstrated. Developers then use what they learned in training to incorporate functional landscape techniques into their plans, thus assisting storm water management and sediment control regulation compliance.

The DOH WPD continues to develop recommendations of BMP effectiveness based on the most current technologies and makes recommendations for developers and District agencies to improve storm water management aspects of construction and rebuild construction as well as street and highway design and construction. The DOH WPD works with developers through the plan approval process, encouraging them to incorporate functional landscaping techniques in their design work.

The District continues to promote the use of riparian buffer zones along its waterways. The DOH WPD led one volunteer buffer planting event in 2004 adjacent to Kingman Lake in northeast DC. DOH WPD partnered with the Casey Trees Foundation and the Anacostia Watershed Society to plant over 100 small saplings and 10 larger 10 ft. high trees. These trees have increased the width of a narrow 10 ft. buffer to over 100 ft. in an

area that was previously mowed turf. These plantings involved over 200 volunteers working on the weekend.

In December 2000, DOH WPD released a *Draft Riparian Forest Buffer Strategy for the District of Columbia Nonpoint Source Management Program*. The purpose of the strategy is to help manage nonpoint sources of pollution and to educate public groups to manage riparian buffers in the District, using a voluntary approach.

The strategy recommends two zones of buffering. Zone 1 is located at the edge of stream and is a minimum of 35 feet wide. This is the minimum area to maintain a buffer depth of three to five trees. Zone 2 is 20 feet wide and consists of grasses and is designated a "No Mow Zone." The buffer zone allows for slowing down and providing natural treatment of storm water runoff, as well as providing wildlife habitat.

Several citizens and government agencies expressed concerns about riparian forest buffers. Concerns included vandalism of planted vegetation, signage, creation of areas prone to "criminal activity," and increases in the "wild appearance" of areas. To help address these concerns, the strategy was revised to include four additional goals:

- Coordinate the restoration and protection of riparian buffers in the District. This would include the establishment in the subwatershed of a restoration action strategy, a discussion of riparian buffers, and plans for riparian buffers to be maintained or established.

- Meet regularly with government officials and citizens groups, and provide guidance to developers in the use and application of riparian buffers. The meetings with citizens include distribution of educational documents, and the involvement of citizens in the actual development and restoration of riparian buffers.

- Monitor and maintain planting in order to ensure that the plantings have a better survival rate. This can be accomplished by encouraging volunteers and residents of the neighborhood to regularly inspect areas and to report incidents of vandalism or destruction of the buffers, and to report the need for replacement of trees that have been damaged or die.

- Amendments to the Water Pollution Control Act of 1984 to include language that will protect riparian buffers and other critical habitats.

The *Draft Riparian Forest Buffer Strategy for the District of Columbia Nonpoint Source Management Program* is provided in the 2004 Annual Report.

The District continues to examine the effectiveness of functional landscaping for use in its road construction activities. In cooperation with Howard University, DDOT conducted a study of BMPs to determine which can be used most effectively for implementation at road construction and reconstruction projects in the District. The September 2002, Howard University report is titled, *Evaluation of Best Management Practices for Reduction of Transportation-Related Storm Water Pollution in the District of Columbia*. DDOT has contracted with Howard University to prepare specific BMP design standards for inclusion in DDOT's design plans. Completion of this work is expected in FY 2005.

3.2.3 Low Impact Development Practices

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

Through educational programs and the plan approval process, DOH WPD promotes and encourages the use of LID techniques throughout the District. These review activities have included:

- Constructing demonstration projects involving bio-retention ponds, vegetated bio-filters, porous pavers, and a green roof.
- Issuing grants to demonstrate LID techniques,
- Partnering with DC Public Schools to conducted various coordinating meetings to assure consideration of LID retrofits in future school renovation projects.
- Establishing a Schoolyard Consortium to promote the construction of schoolyard training habitats that incorporate LID.

- Developing a cost-share program to provide incentives for developers and residents to retrofit their properties for storm water management using LID techniques.

District LID review and inspection activities in 2004 included the following projects.

- Anacostia Economic Development Corporation – for a 10,000 sq ft green roof installation on a new building at 1800 MLK Ave. SE with a scheduled project completion in late 2005 or early 2006. The building is within the Anacostia Sewershed.

- JBG Companies for two green roof installations totaling 68,000 sq ft on a new Department of Transportation (DOT) building complex, Southeast Federal Center Venture at 1201 4th Street SE. Their schedule calls for completing this installation by late 2006. (These are partially funded by WASA legal ward to Chesapeake Bay Foundation). The DOT complex is located outside of MS4 sewersheds.

- Minnesota Avenue Metro Station, 4000 Minnesota Ave., NE, Rain garden Retrofit: The Minnesota Avenue station MOU has been signed by the DC Office of Property Management, DC OPM, with the guarantee of $16,000 in cost share for the construction of the already permitted rain garden. The MOU has been sent to the head of DOH for final signature. The metro station is located within the Anacostia sewershed.

District LID work with DC schools led to the following projects:

- Ross Elementary School NW, 1730 R St. NW, underground groundwater recharge BMP. However, the school is located outside of MS4 sewersheds

- New Community After-School and Advocacy Program rain garden, 1722 6th Street, NW. The location of the LID is outside of the MS4 sewersheds

- In May - June 2005, Chesapeake Bay Foundation intends to issue a second round of green roof grants to additional qualified building owners.

- Bancroft Elementary School, 1755 Newton St., NW, rain garden; the school is located inside Rock Creek sewershed;

- A MOU has been developed between the DC Department of Parks and Recreation (DC DPR) and DOH for construction of three 2000 sq. ft. green roofs on DC DPR buildings. DC DPR headquarters, 3149 16th St., NW, is located outside of MS4 sewershed.

- A MOU has been developed between DOH and DC Libraries for greenroof construction.

District LID work focused on specific regions and watersheds of the district include:

- Watts Branch watershed: The DOH WPD has issued a grant to the non-profit group Parks and People for the construction of four bioretention LID retrofits in the sub-watershed of Watts Branch. DOH WPD has provided a list of appropriate retrofits sites and is working with the grantee to select the final sites. WPD expected Parks and People to construct these four sites in FY 2005.

- Fort Dupont watershed: The DOH WPD has issued a grant to the non-profit group Sustainable Community Initiatives for the construction of several LID retrofits in the watershed of Ft. Dupont. These retrofits will treat the runoff from 2 large parking lots and the runoff from approximately 400 yards of roadway in the upper watershed. Sustainable Communities Initiatives and DOH WPD will work with the National Park Service to install these retrofits to National Park Service parking area and DDOT to install the retrofits to District public roadways.

- Pope Branch watershed: The goal of the Pope Branch LID project is to install LID technologies within the Pope Branch watershed to further protect and enhance the Pope Branch tributary and the Anacostia. Four sites have been identified by the DOH WPD for LID retrofits. These sites have been selected for their ease in constructing bioretention cells or installing permeable pavers and for their potential impact upon Pope Branch. The grant for this project was awarded to DC Greenworks who is working in partnership with Ecosite. The organizations are currently working on designs for the selected sites.

- DOH is working with Catholic University of America, to install innovative storm water management retrofits to two large parking lots on the Catholic University of America /Basillica parking lots. This project is an EPA funded project that will demonstrate new storm water management techniques and will involve engineering students from Catholic University of America as well as the Basillica.

DDOT has contracted with Howard University to prepare specific BMP design standards for inclusion in DDOT's design plans. While the project will be completed in its entirety in FY 2006, quarterly reports are submitted on the information collected in the monitoring and testing exercises.

DDOT has developed a Snout Catch Basin Program, which seeks to install water quality catch basins throughout the district. This catch basin modification (commonly called a Snout after a similar propriety device of that name) seeks to trap floatables and sediments in specified basins so that maintenance crews can remove them. During the first half of FY 2005, 180 units were installed and 160 more units will be installed by end of FY 2005. DDOT has constructed two water quality bio-retention or rain garden structures, at F Street S.E., between Minnesota Avenue and 33rd. Street and at the west approach on Benning road bridge over Anacostia.

DDOT in FY 2005 set up a monitoring program that will measure effectiveness of these LIDs structure to remove metals, nutrients, hydrocarbon compounds, and sediments from street runoff. The Howard University Engineering School was retained to monitor the bio-retention structures. Sand Filter and United Design Engineers, an area engineering company was retained to monitor Snout catch basin and other water quality catchment structures for the DDOT roadway program.

During the second quarter of FY 2005, construction of a bio-retention garden with storm water monitoring features was completed at Benning Road Bridge by Howard University.

The District continues to examine the effectiveness of BMPs in road construction activities. The Howard University BMP Study, *Evaluation of Best Management Practices for Reduction of Transportation-Related Storm Water Pollution in the District of Columbia,* has been used to refine the selection and design of LID features to be incorporated in future road and street construction and reconstruction within the District.

The District is actively investigating other areas of the District for future pilot projects. In this investigation, DDOT and DOH are evaluating potential sites as per their suitability for testing and monitoring LID projects and assessing the runoff from construction projects. The District will continue to review and approve storm water management plans and encourage developers, both commercial and governmental, to incorporate LID measures in their site developments.

DOH continues to play a key role in the DC Schoolyard Greening Consortium (SGC) founded in May 2003. The SGC's mission is "to increase and improve schoolyard green spaces to promote ecological literacy and environmental stewardship among students, teachers, school staff, parents, and the surrounding community." In March 2005, the SGC hosted a teacher-training workshop and is planning for the 2nd Annual DC School Gardens Tour in June of 2005. These workshops target teachers who are interested in schoolyard projects. In March 2005 an SGC website became functional and can be accessed at http://www.cymballine.org/sgc_development/. In addition, to help further achieve its mission, the SGC was awarded a $10,000 grant in 2004 by the Spring Creek Foundation to create an SGC website that will provide locally-based schoolyard greening information to District teachers and other interested individuals. Additionally, grants will help fund an intern to examine the DC Standards of Teaching and Learning and highlight areas where outdoor environmental education can be utilized to reach the required standards.

The District is also active in promoting LID use through participation in regional seminars. The following paper was presented at the National Conference on LID.

> *Timothy J. KariKari, Hamid Karimi and Abdi Musse. 2004. "Encouraging the Use of Low Impact Development (LID) Techniques for Runoff Control In An Ultra-Urban Environment through the Plan Review and Approval Process." Abstract presented at the national conference on low impact development to be held September 21-23, 2004. UMUC, College Park, MD.*

3.2.4 Catch Basin Cleaning and Street Sweeping Activities

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

3.2.4.1 Coordination of Catch Basin Cleaning and Street Sweeping Activities

DPW is currently responsible for street sweeping activities in the District, while WASA conducts catch basin cleaning as part of its maintenance of the MS4 conveyance infrastructure. DDOT maintains the federal roadways through a contractor. This contract includes street sweeping and catch basin cleaning of federal roadways in the District.

WASA and DPW coordinate street sweeping and the cleaning of catch basins through discussions with the foremen responsible for these activities. Catch basin cleaning and sweeping are coordinated to the extent practicable to minimize floatable discharges into receiving waters.

WASA and DPW both operate their routine cleaning activities on schedules that maximize the use of the District's equipment and manpower. Typically, WASA seeks to clean each catch basin once every six months to a year. This is accomplished through both an annual spring-cleaning emphasis in each of the District's Wards and in response to public requests. DPW intends to sweep each of the District's streets as often as once every week to no less than once each month.

In addition to these routine activities, WASA and DPW cooperate in joint clean-up activities in the District's wards. A clean-up activity typically consists of a week of concentrated effort by WASA and DPW capped off by a day with volunteers working alongside WASA and DPW staff. During these special activities, WASA and DPW personnel and volunteers can be seen working together to clean up the District's wards. The schedule for these cleanup activities is provided in Appendix 3-A.

3.2.4.2 Street Sweeping Activities

Street sweeping of federal highways in the District is provided by DDOT, while the local streets and roads are swept by DPW.

DDOT has entered into a contract with VMS, Inc., to maintain approximately 75 miles of the District's interstate and federal roadway system. This five-year maintenance contract requires that the contractor inspect and maintain the following elements of the infrastructure: pavement surfaces, shoulders, drainage structures, catch basins, drains, inlets, curbs, gutters, sidewalks, medians, grass, trees, shrubs, and on bridges, oil/ grit separators. As part of the VMS, Inc., contract, interstate and federal highway cleaning is

performed for the District. Each federal roadway is mechanically swept a minimum of once every four to six weeks, or more frequently, as need dictates.

DPW provides street sweeping services for the remaining streets and roads in the District. Three basic methods are used to clean and sweep streets: mechanical street sweeping, truck crews, and litter vacuum personnel.

- Mechanical street sweeping is provided by DPW Solid Waste Management staff in commercial and some residential areas of the city. Downtown mechanical street sweeping is provided in the evenings. In congested residential areas, parking regulations require that one side of the street is free of parked cars once a week to facilitate mechanical sweeping activities.

- Truck crews, made up of 3 persons each, collect material from streets and gutters where mechanical sweepers are not used. Most streets receive manual cleaning every four to six weeks.

- Litter vacuums are used by personnel to collect material from the downtown commercial area, Capital Hill, commercial areas east of the Anacostia River, and along major arterials.

- Debris removed under the street sweeping program is handled as standard municipal solid wastes. As such, debris is deposited at one of two municipal waste transfer stations operated by DPW.

In FY 2004, the District spent $17.2 million dollars on street sweeping activities. According to the DPW Performance Measures Score Card for FY 2004, a total of 103,163 miles of streets, freeways, and highways were cleaned mechanically, and 13,654 miles of streets and roadways were cleaned manually. Street sweeping, litter receptacles, and alley cleaning work yielded 11,412 tons of collected debris in FY 2004; to accomplish this task, 339 full-time employees were assigned to the task.

In FY 2004, DPW continued to maintain 30 mechanical street sweepers with a staff of 35 sweeper operators. Litter vacuums are used by personnel to collect material from the downtown commercial area, Capitol Hill, commercial areas east of the Anacostia River, and along major arterials. No additional personnel are anticipated for FY 2005.

As part of Street Sweeping Activities, DPW purchased 300 litter cans using Storm Water Enterprise Fund monies in FY 2004 and has budgeted funds to purchase 300 additional litter cans in FY 2005. With these purchases, DPW has more than 4,050 litter cans placed in strategic areas, including bus stops and high-density commercial areas where pedestrian traffic is heavy. During FY 2004, DPW collected 9,346 tons of trash from these litter cans.

3.2.4.3 Catch Basin Cleaning Activities

WASA currently conducts the operation and maintenance of pipes and conduits carrying storm water flow. There are approximately 25,000 catch basins located within the public right-of-way in the District of Columbia. Approximately two-thirds of these catch basins are in the MS4 area, with the remainder in the combined sewer system area. WASA's cleaning program does not differentiate between the two systems and works to keep all catch basins clean. Catch basins located on the District's federal interstate roadway system are cleaned and maintained by DDOT's contractor, VMS, Inc.

The District is divided into eight wards. Crews operate on a predetermined schedule, cleaning catch basins by ward. The 2004 catch basin cleaning schedule is provided in the 2004 Annual Report. WASA Department of Sewer Services has 21 people assigned to the task of catch basin cleaning. WASA primarily uses clam-bucket vehicles to clean the catch basins, while Jet-Vac® Combination Machines are used to clear clogged catch basin connections, and to clean storm grate inlet structures that are too small for the clam buckets. Each working day, six two-man crews clean approximately 22 catch basins each. In FY 2004 WASA crews cleaned 25,950 basins as part of the basin cleaning program. WASA has assigned 10 people (two crews of five laborers) for catch basin repair. Responsibilities vary from resetting the tops of the catch basins to redesigning the catch basin to avoid damage, to rebuilding the entire structure. In FY 2004 WASA crews repaired 299 basins as part of the basin repair program.

3.2.5 Coordination of Leaf Collection

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

DPW conducts curbside vacuum collection of leaves from the residences in the District. The City's eight wards are divided into districts, and twice during the collection season

leaves are collected from each district on specified days. District residents are mailed a flyer prior to leaf collections. The flyer discusses the benefits of the leaf collection program, and gives residents several options for collection. This flyer is included as part of the 2004 Annual Report and can be found on the web at http://www.dpw.dc.gov/dpw/cwp/. Residents may rake leaves into piles, which are vacuumed by one of the District's leaf vacuum trucks, place leaves into a pile in a treebox space in the front of their property, or bag leaves and place them in the treebox.

Leaf collection activities for the past year were conducted from November 1, 2004 through January 8, 2005. The Clean City Initiative report prepared by DPW indicates that 9,546 tons of leaves were collected through the end of 2004. These tonnages represent leaves collected by the vacuum trucks, and do not include bagged leaves, which are collected separately.

3.2.6 Preventive Maintenance Inspections for Storm Water Management Facilities

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

WASA Department of Sewer Services continues to conduct inspection of SWM facilities as part of their routine maintenance program, including the inspection of 15 storm water pumping stations, and 9 wastewater/combined pumping stations. These maintenance inspections include greasing of bearings, draining condensate, exercising equipment, checking oil levels, visual inspections, and housekeeping. These inspections were conducted on a daily, weekly, or monthly basis according to an established inspection schedule. WASA Department of Maintenance Services performs corrective maintenance on pumping stations in response to work order requests from the operational staff.

WASA also performs maintenance on the storm sewer system. These maintenance activities include responding to reports on blockages or defects, the clearing of 326 lateral channels, and ensuring that the outlet structures of the MS4 remain clear. Approximately 1,000 tons of debris is removed each year during these activities. This program utilizes four workers, 1 crane truck, 1 crew cab dump truck, and 1 pickup truck.

DCMR §534.2 states that "the owner of the property on which a storm water 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 storm water management facilities is to be developed and submitted as part of the facility's storm water 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.

DOH has intensified its enforcement of requirements for the submittal of the Declaration of Covenants for Storm Water Management for residential and business property owners. The declaration has been incorporated into the approval process for new construction activities. These covenants state that the owner must provide a schedule of maintenance activities; and that the storm water management devices will be inspected periodically, and, the owner will be responsible for correcting any deficiencies noted, at the owner's expense. The Declaration of Covenants extends in perpetuity and will transfer with the property to a new owner.

In calendar year 2004, DOH WPD worked to minimize the release of pollutants in storm water runoff to the Anacostia and Potomac Rivers and their tributaries by inspecting 71 storm water management facilities to ensure proper maintenance of these facilities. Storm water management facilities were restored on an as-needed basis and appropriate enforcement actions were taken to ensure compliance.

DOH has promoted the use of permitting, inspections and enforcement activities related to preventive maintenance activities including the presentation of the following technical papers

- *Massoud Massoumi. 2004. "Erosion and Sediment Control and Storm Water Management Plan Review and ApprovalProcess." A Power Point Presentation. District of Columbia Department of Health Erosion and Storm Water Management Workshop and Trade Show. University of the District of Columbia. April 28-29, 2004.*

- *Timothy J. KariKari, P.E., CPESC, Hamid Karimi, PhD, and Collin R. Burrell, CPESC. 2004. "Implementation of A Storm Water Management Permitting Program for NPDES Phase II Compliance in Washington,*

DC." Paper accepted for presentation at the StormCon-North American Surface Water Quality Conference and Exposition. July 26-29, 2004. California.

A coordinated effort is being made by all District agencies to conduct inspections of storm water management facilities on a regular basis. This coordination began in FY 2002. A database of all storm water management facilities is maintained by DOH, and schedules of inspections are coordinated through this database.

3.2.7 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.

According to the District of Columbia Construction Codes Supplement, all roof drainage must flow into the separate storm sewer or combined sewer. In new construction activities, this regulation is currently enforced during the plan review prior to construction, and during the site inspection process. For existing buildings these regulations are enforceable as a result of the discovery of illegal connections to the sanitary sewer system in the separate sewer system area.

DOH is presently requesting changes to Section 1101.2 of the District Plumbing Code to eliminate perceived obstacles to programs such as rain leader disconnection for new developments, through which all runoff would be channeled to grassed areas for infiltration instead of direct conveyance to the sewer system. The Committee on Consumer and Regulatory Affairs of the District of Columbia Council conducted a public hearing on the District Construction Codes of 2003 on October 22, 2003. On November 13, 2003 the Committee recommended the approval of the proposed resolution to adopt the 2003 Construction Codes to full Council, where it is awaiting final approval. These codes included changes to the International Plumbing Code and the International Existing Building Code that will facilitate the Rain Leader Disconnection Program. Changes to Section 1101.2 of the District Plumbing Code were proposed in order to eliminate perceived obstacles to the voluntary use of LID techniques. Programs such as rain leader disconnection for new developments, which would allow runoff to be channeled to grassed areas for infiltration instead of direct conveyance to the sewer system, could then be encouraged

Changes to the Plumbing Section of Chapter 7 of the International Existing Building Code were proposed to allow the disconnection of downspouts in existing buildings that are undergoing alterations and repairs, provided the estimated cost of such repairs equals or exceeds the assessed value of the property before the start of the alterations and repairs, and provided the existing downspouts are connected to a sanitary or a combined sewer system.

3.2.8 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.

Section 14.0 of this report contains a complete discussion of educational initiatives taken by WASA and other agencies of the District to educate the public on the proper disposal of pet waste, use of fertilizers, pesticides, and herbicides, and the proper use of landscaping to control storm water runoff.

DOH WPD continued to promote an educational 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.

DOH WPD continued to provide users with the Nonpoint Source video that provides suggestions on proper lawn fertilization, disposal of household waste, and the application of pesticides and herbicides. The video also was shown at teacher training workshops conducted in the city. DOH WPD has also developed an Integrated Pest Management video. This video gives residents guidance on how to choose an appropriate pesticide, how to choose a pest control company, and what regulatory requirements there are regarding commercial companies applying pesticides.

3.2.9 Mapping and Computer Modeling of Storm Water Impacts

Performance Standard: The District maintains a database of the MS4 system and upgrades the database as pertinent data is developed.

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. Figure 3-1 illustrates the MS4 infrastructure and outfall locations. The conveyance system is currently being field verified using the GPS equipment to provide GIS input to the District's infrastructure database. In FY 2004, 50% of the outfalls were field verified. In FY 2005, it is expected that 75% of the field verification will be completed. Field work includes verification of the outfall location, size, and status, in conjunction with dry-weather flow, and illicit discharge inspections. Work continues in a phased process with the Anacostia, Rock Creek, and Potomac watersheds respectively.

Plans are to complete the field verification and quality assurance/quality control (QA/QC) of the database in FY 2006. Additional information (such as the industrial facility database, location of structural improvements, etc.) will be added to the database providing an integrated planning and management tool for the MS4.

DOH WPD has refined and updated the DC automated database system for tracking storm water management facilities inspected for maintenance to include tracking of construction projects with storm water management BMPs. The database system now contains data for BMPs developed since the inception of the program in 1988 and has enabled faster and more efficient rescheduling of inspection and retrieval of maintenance records.

3.2.10 Methods of Measuring the Performance of Activities

The District has taken steps to develop a formalized system to measure the performance of storm water 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. Significant progress has been made in this area including:

- the development of measurement tools such as the discharge monitoring program,
- the verification of the MS4 database system,
- estimating pollutant loading using the Simple Method equation for constituent seasonal and annual load levels

- enhancing regulatory and promotional programs with respect to the use of BMPs
- developing a financial tracking system to better define storm water related expenses

Refining these tools will provide the necessary performance metrics for establishing a simple method to measure the performance of MS4 activities.

3.2.11 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.

DOH WPD inspects sediment and erosion control compliance at construction sites as part of the sediment and erosion control program. DOH WPD has increased inspections of federal and District projects including road construction and rehabilitation efforts.

During 2004, 2,067 project construction plans were reviewed and 1,953 were approved for compliance with erosion and sediment control and storm water management regulations. In the same time period, 7,015 construction site inspections were performed of all approved plans, and 198 enforcement actions were taken for violations of soil erosion and sediment control and storm water regulations.

Efforts are being made by DOH to reduce storm water impacts from new construction in the District. DOH WPD has completed the revised (2204) *District of Columbia Soil Erosion and Sediment Control Standards and Specifications*, and *Storm Water Guidebook.* Both documents have made available to the public since April 2004.

3.2.12 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.

The DCMR specifies that all builders, including federal contactors, must follow the sediment and erosion controls detailed in Chapter 5 of the DCMR. This includes sediment and erosion controls on new and re-build construction sites. The District

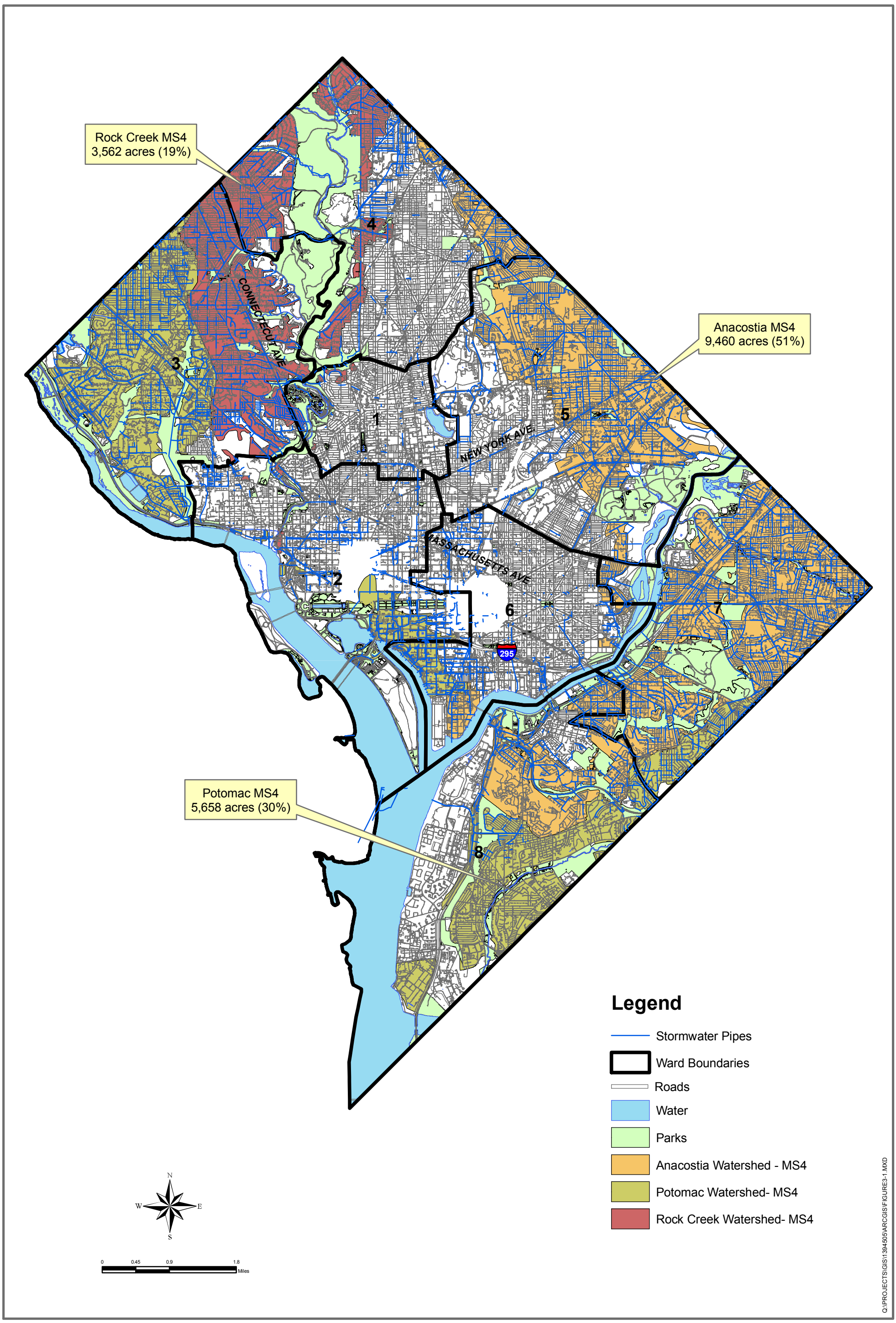

Figure 3-1. District of Columbia
Municipal Separate Sewer System.

maintains a good relationship with the federal government in the application of these regulations to federal properties.

The US General Services Administration (GSA) and DOH signed a consent agreement in FY 2000 that requires work under contracts through the 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. DOH and GSA continue to work under this agreement, and a number of federal facilities with NPDES permits for storm water discharges were inspected during FY 2004. A discussion of these inspections is provided in Section 5. This program will meet the requirements of the Clean Water Act by applying appropriate provisions of the Storm Water Management Plan to federal facilities.

DOH WPD reviewed 58 storm water BMP plans for proposed projects on federal facilities in 2004. These projects included wetlands, oil and grease separators, sand filters, brick pavers, infiltration trenches, bioretention systems and more efficient inlets.

3.2.13 District Facilities Program

DDOT has assigned two Transportation Project Engineers to focus on the development of new storm water pollution control design standards, review sediment and erosion control plans, coordinate with DOH and develop standard drawings for DDOT planned projects and repair operations.

3.2.14 Continuance of Current Programs

DDOT will continue maintaining the highway and street systems within the District of Columbia. DDOT has signed a multi-year contract for highway maintenance and inspections. A copy of a sample scope of work for highway maintenance activities including storm water management requirements is provided in the 2004 Annual Report.

3.2.15 Maintenance of Legal Authority to Control Discharges

Performance Standard: The District maintains the legal authority to control MS4 discharges through the application of the regulations provided in the DCMR.

Through Chapter 5 of the DCMR, and the D.C. Law #13-311 "*Storm Water Permit Compliance Amendment Act of 2000,*" the District of Columbia has maintained the legal authority to control all discharges into waters of the District.

District of Columbia Law # 2-23, "*The Soil Erosion and Sedimentation Control Act of 1977,"* requires the establishment and subsequent revision of a soil erosion and sedimentation control standard and specifications. During FY 2004, the DOH WPD completed the revised *District of Columbia Soil Erosion and Sediment Control Standards and Specifications*, and the revised and updated District's *Storm Water Guidebook.* Both documents have now been finalized and are being distributed.

3.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

The District is involved in a number of activities, which promote storm water 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 storm water BMPs on their properties,
- Routine cleaning and maintenance activities related to the property, streets, storm water catch basins, MS4 piping system within the District. Focus is on maintaining a beautiful city that is both clean and capable of controlling inputs that might contribute to storm water pollution.
- Promotion of BMPs such as functional landscaping, LIDs, rain leader disconnects which property owners can use to further impact their storm water 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 storm water runoff at the point of entrance to the MS4 system.

4.0 STORM WATER POLLUTION CONTROL: MANAGEMENT PLAN FOR INDUSTRIAL FACILITIES

4.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

4.1.1 Permit Requirements

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

4.1.2 Compliance Summary

The management plan of storm water 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 areas.

- Industrial facilities database
- Private solid waste transfer stations
- Hazardous waste treatment, disposal and/or recovery plants
- Industrial facilities subject to the Superfund Amendments and Reauthorization Act (SARA) Title III, or the Emergency Planning and Right-to-Know Act (EPCRA)
- Industrial facilities with NPDES permits
- Industrial facilities with a discharge to the MS4
- Monitoring and inspections
- Wet-weather screening program
- Spill prevention, containment and response program

Section 4.2 below provides details regarding these activities.

4.2 MANAGEMENT PLAN FOR INDUSTRIAL FACILITIES ACTIVITIES

The following sections detail how the District has met each of the permit requirements for industrial facilities management over the past year. These activities control and reduce storm water pollution from industrial facilities in accordance with the Clean Water Act.

4.2.1 Industrial Facilities Database

Performance Standard: The District maintains a database of industrial facilities with standard discharge and storm water 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.

Based on data the DOH Hazardous Waste Division (HWD) submitted to EPA, there were 1,090 such facilities in the District at year-end 2003. Of these, 15 facilities have individual or site specific storm water NPDES permits. A sixteenth permitted facility is located in Virginia but is included in the District's permit universe because pipes from the facility extend into District's tidal zone. The District will continue to update the industrial facilities database to reflect closures and facilities that have been brought under or released from Federal or District regulation.

From October 2004 to March 2005, the DOH began targeted surveys of the Gallatin Run sub-watershed and verified the locations of several businesses. This particular action was in response to a report from Anacostia Watershed Society of floatables from a District MS4 outfall entering a portion of Northwest Branch across the border into Maryland.

4.2.1.1 Private 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 one of two municipal waste transfer stations (4900 Bates Road, NE or 3200 Benning Road, NE), and then transferred out of the District for disposal at licensed facilities. In addition, a total of four private solid waste transfer facilities including two private construction and demolition facilities are in operation within the District. Pollution from storm water

runoff at these facilities is being managed under the Solid Waste Facility Permit Act. The Department of Consumer and Regulatory Affairs (DCRA), DOH, and DPW enforce these regulations as part of their responsibility to manage pollution from storm water runoff at municipal waste facilities within the District.

4.2.1.2 Hazardous Waste Treatment, Disposal, and/or Recovery Plants

Presently, the U.S. Navy's Naval Research Laboratory in Southwest D.C. is the District's only active regulated Resource Conservation and Recovery Act (RCRA) Treatment Storage and Disposal Facility. There are 22 RCRA Large Quantity Generators, and 76 RCRA Small Quantity Generators (not including 497 conditionally exempt generators). RCRA regulations outline handling, storage, and spill control requirements at those facilities.

Inspection and monitoring of hazardous waste facilities is the responsibility of DOH HWD who has procedures in place to investigate sites and spills. These procedures include notification and coordination with DOH WQD of any incidents that impact the city's water resources.

4.2.1.3 Industrial Facilities Subject to Superfund Amendments and Reauthorization Act Title III

In accordance with the permit, the District tracks industrial facilities within the District that are subject to regulation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. Six years after CERCLA was enacted, SARA amended it. SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act (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 CERLA information system database. The District continued to update its industrial facilities database to include the current universe of CERCLA-regulated sites. There are currently 32 of these sites registered with federal and state regulators within the District. The list includes private and federally owned sites. Of the 32 sites, only Washington Navy Yard is on the final National Priorities List. A list of facilities is provided in Appendix 4-A.

4.2.1.4 Industrial Facilities With NPDES Permits

Sixteen District facilities have individual or site-specific storm water NPDES permits. While the Mirant Potomac River facility is located in Virginia, it was also issued a permit by EPA because the piping from the facility extends into the District tidal waters. The facilities are listed in Appendix 4-A of this report.

4.2.2 Industrial Facilities With a Discharge to the MS4

DOH WQD staff reviewed a list of industrial facilities in the District in preparation for an intensive field study to verify NPDES permit holders. Four of the 16 industrial facilities with individual or site-specific storm water permits discharge to the MS4. The remaining 12 facilities discharge to the combined sewer system. Staff identified at least 22 other facilities that have coverage under the multi-sector general permit whose managers or operators were able to produce documentation at the time of the site visit. (Additional investigation will be conducted to verify the permit status at several facilities where managers could not provide information.)

4.2.3 Monitoring and Inspections

In 2004, DOH WQD inspected industrial facilities for compliance with storm water regulations. As a result of the compliance inspections, DOH WQD issued 8 Notices of Violation (NOV) and gave 3 separate Site Directives to facilities deemed responsible for illicit discharges to the MS4. Section 12 of this report includes more information on the program for the detection and elimination of illicit discharges.

DOH WQD and the Office of Enforcement, Compliance, and Environmental Justice (OECEJ) continued in 2004 to address Ward 5 automotive repair and autobody shops through the Environmental Education for the Compliance of Auto Repair Shops (EE-CARS) project. EE-CARS completed its environmental outreach and education to shops in Ward 5 during the summer of 2004, reaching the conclusion that the project was successful in gaining environmental compliance of that industry. In the last phase of the project, teams of EPA and District Government inspectors performed multimedia inspections of 43 randomly selected shops from May to June 2004. These inspections were compared with the baseline inspections conducted in May of 2002. EE-CARS found a 36 percent increase in the compliance of automotive repair and autobody shops with District licensing requirements and obtaining certificates of occupancy. The

program also observed an increase in the cleanliness and professionalism of the shops' appearances (both inside and out) and an increase in the number of shops presenting evidence that they disposed of used oil and hazardous wastes through used oil recyclers and hazardous waste disposal companies. In addition to the inspections, the shop owners were allowed to voluntarily self-certify their compliance. Too few Self-Certification Forms were returned to draw any conclusions from the self-certifications. The District is evaluating whether to further develop the project for implementation in other wards of the city.

4.2.4 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. Screening procedures were developed and included in the Quality Assurance Project Plan (QAPP) discussed in Section 14.

DOH WQD initiated the storm water outfall monitoring program in 2001 beginning with the Anacostia River subwatershed. In 2004, DOH continued to direct wet-weather monitoring at sites identified by the Permit in Rock Creek subwatershed. These included sites at Fort Stevens Drive, NW and the intersection of Military Road and Beach Drive, NW. Additionally, monitoring was conducted at an extra DOH-selected site at Portal Drive and 16th Street, NW. Each of the three sites was sampled once in November 2004. The number of wet weather samples collected this fiscal year was again hindered by weather patterns (that sometimes produced rain during inconvenient hours) and the practice of rotating the few available automatic samplers between sites.

A contract laboratory analyzed water samples for both wet and dry weather screenings. Complete results of the sample analysis for 2004 were stored in the screening program comprehensive database. Results available from the Rock Creek sample analysis are included summarized in Section 15 of this report, and presented in detail in the 2005 Discharge Monitoring Report submitted together with this Annual Report.

4.2.5 Spill Prevention, Containment and Response Program

In January 1999 the District implemented 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. DOH continues to perform compliance and enforcement activities in accordance with Federal (i.e., EPA) regulations under the Clean Water Act and state regulations under the District of Columbia Water Pollution Control Act that address illegal discharge of potentially hazardous materials.

The District began to review and revise the WPCCP in 2003. The District is in the process of securing funding to complete updates to the WPCCP in light of the emergency response system for the city established since the WPCCP was first implemented in January 1999. The effort would include training staff members in new emergency response procedures.

4.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

The District management program for controlling storm water pollution from industrial facilities seeks to encourage DC industries to control pollutants in their waste. Through routine inspections of industries with individual NPDES storm water permits and monitoring and inspections throughout the district, the District enforces effluent restrictions to the MS4 so as to meet Clean Water Act (CWA) requirements.

5.0 STORM WATER POLLUTION CONTROL: MANAGEMENT PLAN FOR CONSTRUCTION SITES

5.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

5.1.1 Permit Requirements

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

5.1.2 Compliance Summary

The management plan for storm water 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 strategies, and air pollution compliance activities. A summary of these compliance activities includes:

- Review and approval process
- Inspection and enforcement procedures
- Site inspections and loading estimates
- Educational measures
- Public roads and traffic pollution strategies

Section 5.2 below provides details regarding these activities.

5.2 MANAGEMENT OF CONSTRUCTION SITE ACTIVITIES

5.2.1 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 DOH WPD enforcement staff and the DCRA to ensure that deficiencies in the permit process are corrected when they are encountered.

District agencies continue to provide a "One-Stop Permitting and Business Center" for the approval of construction plans. Since its inception in January 1999, the center has provided better 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 DOH WPD main office.

Each year technical review staff members are given a refresher training to improve their efficiency in plan review and the provision of technical assistance to developers and contractors. DOH WPD technical review staff coordinates their review and approval activities with DCRA and DOH WPD's enforcement staff to ensure that deficiencies in the permit process are corrected when they are encountered.

5.2.2 Inspection and Enforcement Procedures

Performance Standard: The District conducts inspections of construction sites and their SWM BMPs. Established BMPs are inspected as per their maintenance activities and records.

Inspection procedures are outlined in the DCMR Water Quality and Pollution Regulations and the Nonpoint Source Management Plan for the District. The Nonpoint Source Management Plan is provided in the 2004 Annual Report. The legal basis for conducting inspections related to storm water management is outlined in Chapter 5 of the DCMR. The regulations require that facilities generating storm water runoff must install a best management practice to control the discharge of oil and grease concentrations exceeding 10 mg/L. Facilities with storage for animals must prevent the waste runoff from reaching the waters of the District. Measures to control storm water runoff include infiltration of runoff, attenuation by open vegetated swales and natural depressions, retention structures, and detention structures.

Copies of the Standard Operating Procedures for Soil Erosion and Sedimentation Control and Storm Water Management Inspection, and the Standard Operating Procedures for the Enforcement of Soil Erosion and Sedimentation Control and Storm Water Management Regulations are provided in the 2004 Annual Report. There are three mechanisms to trigger an inspection: Targeted Inspections, Inspection Audits, and Citizens Complaints.

> Targeted Inspection: The goal of the inspection program is to inspect 100% of permitted construction projects. The permittees are required to notify DOH

before construction begin and request a pre-construction meeting/initial inspection, and after the project is completed for a final inspection. DOH WPD also conducts periodic inspections to ensure compliance. Currently, DOH WPD inspects 100% of permitted projects for which a call is received for a pre-construction meeting/initial inspection.

Inspection Audit: DOH WPD inspectors are provided with a list of permitted projects on a monthly basis. Inspectors are required to stop at any construction site observed in their designated areas not on that list, and conduct a compliance inspection.

Citizens Complaints: DOH WPD investigates and inspects 100% of construction sites for which it receives a complaint, and takes the appropriate action to obtain compliance.

Enforcement activities and rulings regarding violations of the erosion and sediment control and storm water management regulations continued as DOH WPD conducted 7,015 inspections at construction sites and issued 198 enforcement actions (132 Notice of Infractions (NOI)s and 66 Notice of Violations (NOV)s) that were violations of the District erosion and sediment control and storm water regulations. The DOH WPD database of the Office of Adjudication and Hearings docket is provided in Appendix 5-A of this report.

DOH WPD has refined and updated the District automated database system for tracking storm water management facilities inspected for maintenance to include tracking of construction projects with storm water management 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.

DOH WPD has also minimized the release of pollutants in storm water runoff to the Anacostia and Potomac Rivers and their tributaries by inspecting 141 storm water management facilities to ensure proper maintenance of these facilities. Storm water management facilities were restored on an as-needed basis and appropriate enforcement actions were taken to ensure compliance.

5.2.3 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.

DOH WPD conducts site inspections and calculates loading estimates from construction sites within the District. Loading estimates are prepared as part of the plan review process as detailed in the *Storm Water Management Guidebook.* Plan review, site inspection and loading estimates are required for commercial, residential, and road development land uses.

5.2.4 Educational Measures

Performance Standard: The District provides educational materials and training for construction site operators.

Educational training for construction site operators is conducted during the site inspection process. This training includes distribution of the District's *Storm Water Management Guidebook*, and the *Erosion & Sediment Control Handbook*, and addresses particular needs and questions of the operators. These books outline the regulatory requirements of the District for construction activity.

In addition to these handbooks, DOH WPD continues to:

- distribute a video that illustrates the proper maintenance of the Sand Filter Water Quality Structure, which is a commonly used BMP on construction sites in the District;
- maintain a list of qualified storm water management facilities 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 storm water management facilities;
- conduct workshops on low impact development, provide presentations at trade shows;

- establish guidelines for inspection procedures as required by the DCMR, Title 21, Section 534.1 These guidelines ensure the proper maintenance of storm water management facilities, as the regulations require the submission and approval of a work plan before restorative maintenance activity of any sand filter bed can proceed. And;

- publish articles in trade journals informing construction site operators of the requirements of the District's storm water regulations prior to submitting site plans.

Future planned educational materials include the development of LID materials by the Low Impact Development Center for the DOH WPD to distribute to contractors and District residents, and further updates to the DOH WPD's *Storm Water Guidebook*.

5.2.5 Public Roads and Traffic Pollution Strategies

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

DDOT continues to maintain streets and roads in the District through the use of its own personnel and equipment, and through private contractors. DDOT maintains a contract with VMS, Inc., to maintain approximately 75 miles of the District's federal roadway system. A copy of a typical Request For Proposal including requirements for storm water management is provided in the 2004 Annual Report.

Through Howard University, DDOT conducted a study of BMPs to determine which can be used most effectively in commercial, residential, or governmental areas and operations. The study report, completed in 2002, is titled, *Evaluation of Best Practices for Reduction of Transportation-Related Storm Water Pollution in the District of Columbia.* This study outlines which practices are most cost-effective, and are recommended for implementation at road construction and reconstruction projects in the District. Specific design standards are currently being prepared by Howard University for inclusion in DDOT's design plans in FY2005.

5.3 HOW THIS PROGRAM MEETS THE REQUIREMENTS OF THE CLEAN WATER ACT

The District seeks to control the land use within its boundaries through the review of construction plans and the inspection of construction sites.

In the review process the District is able to work with designers, to promote storm water BMPs, encourage the use of storm water quality controls on new and rebuild construction sites. In the long term the accumulative effect of maintained or decreased levels of impervious land use, and installation of storm water BMPs on a large number of sites will help to decrease the peak runoff rates and pollutant levels 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.

6.0 STORM WATER POLLUTION CONTROL: FLOOD CONTROL PROJECTS

6.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

6.1.1 Permit Requirements

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

6.1.2 Compliance Summary

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

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

Section 6.2 below provides details of these activities.

6.2 FLOOD CONTROL ACTIVITIES

Performance Standard: The District operates and maintains flood control devices including BMPs, pump stations, floodgates, weirs, canals and storm water collection and conveyance systems. The District of Columbia operates and maintains District flood control devices and storm water collection and conveyance systems under the governing regulations for structural storm and flood mitigation.

6.2.1 Water Quality Impact and Beneficial Use Assessment

The maintenance of the flood control and mitigation measures is aimed at controlling the impact of flooding on water quality in the receiving water bodies. A Discharge

Monitoring Program has been developed to monitor the discharge from the MS4 in compliance with the MS4 Permit. Construction plans for proposed development projects in the floodplain are reviewed and assessed for their water quality impacts by DOH WPD.

6.2.2 Existing Flood Control Devices Retrofit Assessment

The District of Columbia operates and maintains flood control devices including BMPs, pump stations, floodgates, weirs, canals, and storm water collection and conveyance systems. The District has developed procedures for these facilities so that they are operated and maintained to ensure proper functioning.

The District has three primary flood control devices that help to control flooding on the waters of the District. The first device is a levee and gate system located on Washington Harbor, at the Georgetown Waterfront Development. The gate is raised under high water conditions in the Potomac River to control flooding in the harbor area. No retrofitting of the levee is envisioned. The second and third devices are two weir dams located on Watts Branch (a tributary to the Anacostia River). The weir dams were originally designed to control both the peak flows and sediment movement in Watts Branch so that downstream properties were not subjected to repetitive flooding. Physical inspection of the two trapezoidal weirs indicated that the structures continue to function effectively in curtailing flooding and stream bank erosion and sedimentation, and require no need for retrofitting since their intended purpose along with the ancillary benefit of water quality is being achieved.

6.2.3 Flood Plain Mapping

Performance Standard: The District will continue to coordinate with FEMA in identifying District areas prone to flooding.

Flood hazard mitigation and floodwater pollutant removal requires identification of at-risk areas through flood plain mapping. Through the nation's flood insurance policy, the Federal Emergency Management Agency (FEMA) has developed flood plain maps for all areas of the United States. Supplemented by DPW, the 1985 FEMA Flood Insurance Study 100-year and 500-year flood plain maps of the District of Columbia comprehensively fulfill the MS4 Permit flood plain mapping requirement.

6.2.4 Flood Plain Development Procedures and Reviews

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

The MS4 Permit requirements for flood plain development procedures and review are met through the promulgation of Title 20 (Chapter 31- Flood Hazard Rules) of the DCMR , and the Department of Health Nonpoint Source Management Plan II. These regulations describe in detail how projects proposed in flood plains 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.

6.2.5 Impervious Surfaces Evaluation

Performance Standard: The District regularly 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 flood plain 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 DCMR, Title 20. DOH WPD has initiated a program to collect data to evaluate impervious surfaces for both proposed and existing development in floodplains.

6.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

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

7.0 STORM WATER POLLUTION CONTROL: MUNICIPAL LANDFILLS AND OTHER MUNICIPAL WASTE FACILITIES MANAGEMENT

7.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

7.1.1 Permit Requirements

Part III.B.5 of the Permit pertains to the Control of Pollution from Municipal Landfills and Other Municipal Waste Facilities.

7.1.2 Compliance Summary

The management plan for storm water pollution control with respect to municipal landfills and municipal waste facilities emphasizes:

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

Section 7.2 below provides details of these activities.

7.2 MUNICIPAL LANDFILLS AND OTHER MUNICIPAL WASTE FACILITIES POLLUTION CONTROL ACTIVITIES

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

7.2.1 Municipal Waste Reduction Program

The District is entirely urban with a large percentage of its land surface paved and/or highly developed. Similarly, the land use within the waste handling facilities is predominantly paved and/or highly developed. The management program for the municipal facilities targets the nonpoint source runoff from the facility, with particular

focus on the control of pollutants that build up on the paved and/or developed portions of the facility site.

Regulatory programs directly supporting the District's nonpoint source storm water protection and waste reduction efforts include the DOH's Nonpoint Source Management Plan II, which cites the Solid Waste Management and Multi-Material Recycling Act of 1988. This Recycling Act requires the recycling of certain wastes, thereby materially reducing the activities at waste handling facilities, further reducing resulting storm water pollution. The District provides recycling service to residential and multi-family residences of three (3) or fewer dwelling units and requires commercial businesses and government offices to have a private recycling contractor.

In FY 2004, The District collected an estimated 126,268 tons of solid waste plus another 21,835 tons of recyclables from the residential population it services. 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 sector landfills in Virginia.

The District has refurbished the municipal solid waste transfer station at Benning Road, including improvements in the paving and drainage systems. Fort Totten has had necessary repairs to the structure, but it is awaiting a complete renovation. The District government solid waste handling sites are mechanically swept several times per week.

DPW's evening street cleaning and other night operations are managed through a single facility at New Jersey and "K" Streets, SE. This site has undergone approximately $240,000 worth of operating and infrastructure improvements since FY 2001.

The District has 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. DPW is developing a program to provide water quality control for the District's municipal waste facilities including waste transfer stations and equipment storage and maintenance facilities.

7.2.2 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.

7.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

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

8.0 MONITOR AND CONTROL OF STORM WATER POLLUTANTS FROM HAZARDOUS WASTE SITES

8.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

8.1.1 Permit Requirements

Part III.B.6 of the Permit pertains to the Monitoring and Control of Pollutants from Hazardous Waste Sites.

8.1.2 Compliance Summary

The management program for storm water pollution control from hazardous waste sites emphasizes:

- Identification and mapping of facilities, and
- The monitoring of storm water discharge

Section 8.2 below describes these activities.

8.2 MONITORING AND CONTROL OF POLLUTANTS FROM HAZARDOUS WASTE SITES ACTIVITIES

8.2.1 Monitoring of Pollutants From Hazardous Waste Sites

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

The formal procedures DOH HWD follows to control the impact and extent of hazardous waste on the MS4 are presented in the following three documents.

- "Hazardous Waste Management" – describes the procedures for proper identification, handling, and reporting of hazardous materials required of waste facility operators.
- "Strategic Plan for Enhancement of Environmental Health Administration Hazardous Waste Division" – details a general plan for hazardous waste monitoring and control.

- "Standard Operating Procedures" – provides the standard operating procedures for hazardous waste reporting.

DOH WQD developed inspection protocols to govern field investigations, including the investigation of facilities that generate or store hazardous waste. Compliance and enforcement officers wrote a plan to prevent, detect, and remove illicit discharges. The document identifies several source categories that are relevant to the District of Columbia and generally describes the actions the Division could take to address these sources. For example, sanitary wastewater, car wash wastewater, automotive sources, and laundry wastewaters are among the potential sources of pollutants. While regular inspections and recommendations to use recycle/reuse programs might be preferred approaches for the automotive industry, public outreach might be more appropriate for controlling materials like grass clippings, leaf litter and pet waste.

In 2004, DOH continued the discharge monitoring program initiated in January 2001. Samples collected in both dry weather and wet weather conditions are analyzed for a full suite of hazardous components. This data will provide information for screening hazardous materials released in storm water runoff from hazardous waste sites.

Illicit discharge detection is another component of the program to identify facilities that are contributing a substantial pollutant loading to the MS4. Identifying and sampling discharge from connections provides information that may identify hazardous waste facilities with illicit connections.

8.2.2 Industrial Facilities Database

Performance Standard: The District maintains an industrial facilities database as part of its inspection and enforcement program.

DOH WQD 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. DOH WQD will continue to update federal and District facilities information as needed based on the MS4 monitoring effort.

As noted in Section 4.0, the following facilities located in the District are included:

- **Hazardous Waste Treatment, Disposal, and/or Recovery Plants -** The District contains 1 RCRA Treatment and Storage Disposal Facility, 22 RCRA Large Quantity Generators, and 76 RCRA Small Quantity Generators.

- **Industrial Facilities Subject to SARA Title III -** The Industrial Facility Database includes 32 sites within the District that are subject to regulation under SARA Title III. Two facilities that release toxic chemicals to the air, water, and land in reportable quantities are under SARA Title III, Section 313.

8.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

Full implementation of this program is critical with respect to the Clean Water Act. The primary method by which the Act imposes limitations on pollutant discharges is the nationwide 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.

DOH HWD conducts inspections of RCRA hazardous waste facilities to determine compliance with hazardous waste regulations. Records compiled by HWD show that on-site compliance evaluation inspections were conducted between October 1, 2003 and September 30, 2004. While HWD inspections do not directly address water quality, inspectors report spills that could pose a water quality threat to DOH or WASA for further water quality investigation.

9.0 STORM WATER POLLUTION CONTROL: PESTICIDES, HERBICIDES, AND FERTILIZER APPLICATION MANAGEMENT

9.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

9.1.1 Permit Requirements

Part III.B.7 of the Permit outlines the requirements for pesticide, herbicide, and fertilizer applications.

9.1.2 Compliance Summary

The management plan for storm water 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 includes:

- Control programs for pesticide, herbicide and fertilizer application on District and private property
- Public education programs, and
- Discharge monitoring programs

Section 9.2 below provides details of these activities.

9.2 PESTICIDE, HERBICIDE, AND FERTILIZER APPLICATION ACTIVITIES

Performance Standard: The District Integrated Pest Management (IPM) Program is active in educating and training the public, and enforcing misapplications of pesticides and herbicides.

9.2.1 Control Program on District Property

DOH continues to implement the District's IPM Program. The DOH IPM 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, workers, and groundwater.

9.2.2 Control Program on Private Property

DOH also provides educational programs to private property owners through pamphlets distributed to residents. The pamphlets address lawn care service, the District Nutrient Management Program, and Integrated Pest Management (IPM). The purpose of the programs is to better inform the public on the proper use and disposal of pesticides, herbicides, and fertilizers, and safer alternative methods. 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. An example of educational pamphlets distributed as part of this program is presented in the 2004 Annual Report. In 2004 DOH WPD distributed its IPM video and 402 brochures at teacher workshops.

In 2004 DOH WPD also distributed 437 brochures through its Environmental Education Resource Center, and provided school teachers nutrient management information regarding the proper use of fertilizer as part of its "Trees for Kids" project.

9.3 SOURCE CHARACTERIZATION SCREENING

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

Pesticides are monitored as part of the overall wet- and dry-weather outfall monitoring program. Pesticides have been detected in some of the samples collected from the outfalls. During calendar year 2004, contractors hired by DOH WQD focused sampling efforts on outfalls in the Rock Creek subwatershed. In June 2004, dry-weather samples were collected once from six outfalls approved for sampling by EPA. Wet-weather samples were collected in July 2004 from one approved outfall at Soapstone Creek and an additional outfall selected by DOH at Oregon Ave. and Pinehurst Cir., N.W. Two approved outfalls were sampled during a wet-weather event in November 2004 along with an additional outfall near the intersection of Portal Dr. and 16th St., N.W. Pesticides were detected in some of the dry-weather samples collected from the Normanstone, Hazen Park, and Klingle Valley outfalls in June. The parameters detected were chlordane, dieldrin, and heptachlor epoxide. Other parameters were detected in samples collected during the July wet-weather sampling event from two outfalls located at Soapstone Creek and Oregon Ave. and Pinehurst Circle, NW. Those parameters were chlordane, 4,4'-DDT, and endrin. DOH WQD has not identified a single source for any of these parameters, but is using available information on land use and chemical use data

to support targeted inspections of industries and other potential sources in the impacted sewersheds.

Additional details of sample set activities are included in Section 15 of this report. Analytical results for pesticides can be found in the 2005 DMR submitted together with this Annual Report.

9.4 HOW THIS PROGRAM MEETS REQUIREMENS OF THE CLEAN WATER ACT

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

10.0 STORM WATER POLLUTION CONTROL: DEICING ACTIVITIES MANAGEMENT

10.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

10.1.1 Permit Requirements

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

10.1.2 Compliance Summary

The management plan for storm water pollution control in deicing activities emphasizes:

- Evaluation of deicer materials
- Application of deicer materials, and
- Storage of deicer materials

Section 10.2 below provides details regarding these activities.

10.2 DEICER EVALUATION

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 has completed a comparison of deicing products, studies of alternative chemicals and deicing techniques. The comparison outlines the results of deicer testing conducted in ten states (including Maryland and Virginia) in comparing the chemical and physical characteristics of deicers, their impacts to soil, water and environment, and a comparison of the cost of sodium chloride salt versus various deicing alternatives. Iceban® was recommended as a viable alternative to sodium chloride salt in each of the studies reviewed. Based upon the comparison of deicing products, the District will continue to use Iceban® on bridge surfaces to reduce pollutant loading to receiving waters from deicing activities.

10.3 APPLICATION OF DEICER MATERIALS

Performance Standard: The District is active in keeping the streets and highways of the District ice free.

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. For most storms with expected precipitation of two (2) inches or less, the snow management plan calls for the use of salt on roadways and a chemical deicing liquid at some bridge locations. For snow events of two (2) inches or greater, snow plowing operations are used in addition to salt and deicing chemicals.

DDOT uses the corn-based snow and ice-melting product IceBan® as a pre-treatment on selected highways and bridges. The manufacturer of IceBan states that it is entirely organic, and reduces the corrosive effects and increases the effective range of salt.

The District continues to use a hydro melt liquid deicer on bridge surfaces to reduce pollutant loadings to receiving waters.

DDOT is developing a facility to produce brine for use as a pre-treatment for snow and ice. The brine solution is a 23 percent sodium concentration and 77 percent water. The use of the brine pre-treatment provides a 77 percent reduction in the amount of salt used during winter months for control of snow and ice. If a storm event misses or changes direction after pre-treatment of roadway surfaces, the water in the brine solution will evaporate and the salt residue will eventually wash off.

The 2004 Annual Report is includes a Comparison of Ice-Ban to Other Deicing Products.

10.4 DEICER MATERIALS STORAGE FACILITIES

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

The District operates a salt storage site at Potomac Avenue and R Street, SW and 1246 "W" Street, NE. A salt storage facility at Fort Drive, NW, just east of the Fort Reno reservoir, and an additional facility at 401 Faragut Street, NE include storm water management facilities to control runoff from the site and minimize pollutants in runoff.

10.5 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

In implementing its deicer program, the District is reducing the amount of salts that is applied to the roadways in order to provide a safe passage for its citizens. These activities directly impact the amount of salts in melted storm water runoff entering into the MS4 and thereby help to meet the storm water quality requirements of the CWA.

11.0 STORM WATER POLLUTION CONTROL: SNOW REMOVAL MANAGEMENT

11.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

11.1.1 Permit Requirements

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.

11.1.2 Compliance Summary

The management plan for storm water pollution control through snow removal emphasizes the snow and deicer control program.

Section 11.2 below provides details regarding these activities.

11.2 SNOW AND DEICER CONTROL PROGRAM

Performance Standard: The District implements its snow removal and deicing program and operating plan so as to ensure safe passage of its roadways using deicing materials that provide the minimum impact practicable to the storm water runoff from snow and ice that enter the MS4.

Information on the District's activities to evaluate the use and application of chemical deicers, salt, sand, and/or sand/deicer mixtures in an effort to minimize the impact of these materials on water quality is provided in Section 10 "Deicing Activities."

DDOT regularly prepares a Performance Measures Report that includes targets and achievements for a number of performance measures, including snow removal. The goal for snow removal is to have 85 percent of the main roads passable within 12 hours of a 4 to 8-inch snow storm. This goal was exceeded during the November 2004 to March 2005 snow season, when the main roadways were passable within the 12-hour timeframe. A total of 11 snow events occurred during this time period.

The DDOT Winter Storm Plan and current performance measures are included in Appendix 11-A of this report.

11.3 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.

11.4 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

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 storm water runoff that enters the MS4. These activities directly impact the pollutant constituents in storm water runoff entering into the MS4 and thereby help to meet the storm water quality requirements of the CWA.

12.0 STORM WATER POLLUTION CONTROL: MANAGEMENT PLAN TO DETECT AND REMOVE ILLICIT DISCHARGES

12.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

12.1.1 Permit Requirements

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

12.1.2 Compliance Summary

The storm water 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
- Illicit discharge prevention
- Floatable reduction
- Waste collection
- Inspection and enforcement, and
- Spill response

Section 12.2 below provides details regarding these activities.

12.2 MANAGEMENT PLAN TO DETECT AND REMOVE ILLICIT DISCHARGES ACTIVITIES

The DPW Solid Waste Education and Enforcement Program (SWEEP) seeks to maintain clean private and public space 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 clean-up effort. This cost will be added to the property owner's next property tax bill. The SWEEP program is authorized for a staff of 32 field investigators.

DOH WQD has implemented an ongoing 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. DOH WQD 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 DOH. DOH WQD personnel collect information about the location and physical characteristics of the discharge in preparation for a site visit. Often DOH WQD is able to respond immediately by sending their personnel into the field. Depending on the characteristics of the discharge described, DOH WQD 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 U.S. EPA, U.S. Coast Guard, or National Park Service may be called upon for assistance with sample analysis, investigation, or containment.

In 2004, DOH MS4 staff responded to 25 complaints about suspicious discharges, which were similar in number to the complaint-driven cases they handled in 2003. Table 12-1 briefly summarizes the complaint-driven illicit discharge investigations DOH conducted during calendar year 2004. Dumbarton Creek, Hickey Run, Klingle Run, Mill Creek, Nash Run, Oxon Run, Watts Branch, Texas Avenue Tributary, the Tidal Basin, the Washington Ship Channel are some of the waterbodies in the portions of Anacostia River and Potomac River watersheds served by the MS4 that were potentially impacted by the discharges.

TABLE 12-1 2004 COMPLAINT-DRIVEN ILLICIT DISCHARGE INVESTIGATIONS AND CORRECTIVE ACTIONS TAKEN

SITE	PROBLEM	CORRECTIVE ACTION
4th Street and Mississippi Avenue, SE (behind Simon Elementary School)	Abandoned car in Oxon Run. [Aug 2003 – ongoing]	Ongoing problem that was discovered in August 2003. DOH submitted requests for removal to DPW and later confirmed that DPW removed the vehicle.
2903 Park Drive, SE	Discharge from private sanitary sewer line onto a neighbor's property. [Oct 2003 – Jan 2004; Apr 2004 – ongoing]	Investigation initiated in October 2003. The case was closed on January 28, 2004 upon repair of the sanitary line, but reopened April 7th due to rat harborage concerns in the area of the original leak. It was pursued as a rodent control issue. DOH WQD provided complainant with DOH Rodent Control's contact information, and reported the issue to DCRA Supervisor, Denvert Boney.

SITE	PROBLEM	CORRECTIVE ACTION
3100 Macomb Street, near the intersection of Ross Place with the south end of Macomb Street, NW Klingle Run	Pool of standing water with an odor on private property. [Jan 2004 – May 2004]	DOH was called to investigate, and they found visual and olfactory evidence of illicit discharge of sanitary waste at the private residence. WQD reported the problem to WASA. It was disclosed that a homeowner had punctured the sewer line, filling it with concrete, during a property expansion. The sanitary line and a piped stream were both redirected appropriately to provide corrective action. Case closed.
1350 Upshur Street, NW	Resident complained of continually standing water and a sinkhole on the property. [Jan 2004]	DOH visually confirmed the presence of standing water reported by a resident. A week later, DOH received another request from the resident regarding a sinkhole on the property. DOH reported the problem to WASA and received confirmation from WASA that the request had been processed.
4410 Massachusetts Avenue, NW	Construction company muddying a stretch of Massachusetts Avenue. [Jan 2004]	Photographic evidence was submitted to DOH concerning muddy deposits that the vehicles of a construction company were leaving along two blocks of Massachusetts Avenue between 45th Street and 47th Street, NW. DOH responded to the complaint, which the company resolved by cleaning the nearest catchment along Massachusetts Avenue and the installing an inlet guard. Case closed.
1900 Anacostia Drive, SE	Vehicle submerged in Anacostia River. [Jan 2004]	DOH confirmed with Park Police recovery of a vehicle that plunged into Anacostia River near the Sousa Bridge on January 12. No water quality enforcement action was taken.
Hunt Place and (north of) 42nd Street, NE	Pedestrian bridge and retaining wall collapsing in Watts Branch area. [Feb 2004]	DOH responded to a request to obtain photographic evidence of a pedestrian bridge crossing and a collapsing retaining wall. An inspector met with employees of DC Parks and Recreation and USGS. An agreement was made to temporarily move a testing gauge to a more stable foundation until the previously planned restoration project begins.
Chain Bridge Road and Sherier Street, NW	A construction site was allegedly pumping dirty water (into public space). [Mar 2004]	DOH WQD received the complaint and referred it to DOH WPD Inspection and Enforcement Branch.
7052 Spring Place, NW Sligo Creek	Company was allegedly discharging caustic soda beads from their property onto public space. [Mar 2004]	DOH WQD as well as DOH Air Quality Division, DC Fire/EMS, Montgomery County Fire Department, WASA, MPD Environmental Crimes Unit, and HAZMAT responded to the scene. The company was issued a Notice of Violation with multiple directives on March 4. The company carried out all corrective actions in compliance with the NOV.
2651 Connecticut Avenue, NW	Alleged dumping of concrete into a catch basin. [Mar 2004]	DOH responded to a complaint from a resident who observed a contractor dumping what looked like concrete into a catch basin. They discovered that a contractor had been washing a work bucket into the street and instructed him to cease discharging the washwater into the street.

SITE	PROBLEM	CORRECTIVE ACTION
713 Lamont Street, NW	Complaint-driven inspection of industrial laundry facility. [Mar 2004]	Upon investigating the complaint, which was originally directed toward the DOH Air Quality Division, DOH WQD did not find any water quality violations. WQD also learned the facility is a pretreatment permit holder. WASA regularly monitors its discharge. No further action was taken by DOH.
3201 S Street, NW	Discharge of Flo-Ash to Dumbarton Creek from the Whiting-Turner Contracting Company construction site at the Dumbarton Oaks Library. Flo-Ash fractionally covered the streambed over an area spanning approximately 150 meters. [Mar 2004 – May 2004]	DOH investigation began on March 5. On April 26, DOH received the final report containing clean-up effort and laboratory analysis. On April 29, DOH returned to the site to visually confirm the improved site conditions described by the report and close the investigation.
3314 Oxon Run Road, SE	Sanitary overflow from a manhole residential property. [Mar 2004, ongoing]	DOH attempted to identify water and sewer lines associated with the residence (part of a planned community that was abandoned by the original builders who filed for bankruptcy). DOH directed the complaint to DCRA to resolve a possible private plumbing issue. While verifying area sewer system, DOH located a backyard in-line manhole at 3322 Oxon Run Road, SE, and an outfall serving Oxon Run Road at 7th Street, SE between Mississippi Avenue and Valley Avenue. Contractors in the area also discovered and charted a public sanitary sewer line that did not appear on available WASA maps. The investigation is ongoing.
58th and East Capitol Streets, NE and north to Clay Street, NE	Possible city main fracture contributing to transport of sediment from construction site to Watts Branch. [Apr 2004]	A complaint was delivered to DOH WPD via email on April 13, 2003. DOH referred the case to WASA on April 21 for corrective action.
34th Street and Nash Place, SE	Referral from DOH WPD staff who observed a murky discharge to Pope's Branch. [May 2004]	DOH WQD found a broken pipe and exposed white PVC pipe in the stream. White foam was present on the surface of the water for several days. WASA joined the investigation, collected two samples, and TV'd the sewer line. The test results revealed high levels of fecal coliform and enterococcus bacteria. A dye test was performed at a postal building on Pennsylvania Ave., SE that was considered a potential source of the discharge. The test was negative, and the neighboring business was excluded as a candidate for dye testing after inspectors visited. It was possible that the breach existed in a pipe system not associated with the facilities in the MS4 sewershed.
5th Street and V Street, NE	Discharge of cement into a catch basin at the intersection. [May 2004]	DOH observed discolored water leaving the Fort Myers concrete mixing property. A referral was made to the DOH WPD Inspection and Enforcement Branch for further investigation.
Pennsylvania Avenue and Minnesota Avenue, SE	Cooking oil spilled outside a restaurant and entered a nearby catch basin. [May 2004]	A vandal overturned a half-full drum of cooking oil located outside the restaurant. Police apprehended the vandal, and the owner used hot water to wash oil into the catch basin. DC Fire Department contacted DOH the day after the incident, and WASA accompanied them to the site.

SITE	PROBLEM	CORRECTIVE ACTION
		They directed the owner to use absorbent material to clean the site, and WASA assisted the owner in cleaning the catch basin. Oil drums were moved inside. Case closed.
Yuma Court, NW Mill Creek	Complaint of strong odor at Mill Creek twin outfall. [Jun 2004]	DOH did not observe a smell at the outfall at the time of the inspection, and the flow did not exhibit discoloration (i.e., clear flow).
2003 Bladensburg Road, NE	Trace discharge of used cooking oil from a restaurant to Hickey Run. [Jul 2004 – Oct 2004]	DOH found condensation draining from the rooftop of the restaurant and coming into contact with a used oil barrel stored out of doors. The restaurant resolved the problem by installing a new roof leader and directing the drainage away from the area of the used oil collection barrels. The case was closed in October after a follow-up visit.
1900 Massachusetts Avenue, SE	Spill to District of Columbia General Hospital parking lot from the punctured hydraulic tank of a plow truck. [Aug 2004]	A contractor responding to the incident initially placed absorbent material on the lot. DOH later coned the area to divert vehicular traffic and placed a sorbent sock, or boom, around the nearest storm drain. The driver of the stolen plow truck was not apprehended.
3939 Wisconsin Avenue, NW	Discharge of municipal water. [Aug 2004]	WASA notified DOH that their personnel discovered leaking valves in the area that needed repair or replacement. This discovery followed a major valve replacement in the same area that took place during mid-July. WASA made the necessary repairs.
15th Street and Constitution Avenue, NW Tidal Basin	Illicit sanitary and storm sewer connection in the Tidal Basin area. [Sept 2004, ongoing]	DOH was alerted to a possible cross-connection between sanitary and storm sewers on National Park Service property. Meanwhile, the Ellipse Visitor Pavilion was temporarily closed. Dye tests were conducted in October at six other restrooms at the National Mall. WASA anticipated needing 3-6 months to complete the sewer separation. The case is ongoing.
16th Street and Joyce Road, NW	Discharge of discolored water from MS4 outfalls in the Fort Stevens area to Rock Creek following a torrential rainfall. [Oct 2004, ongoing]	Maryland Environmental Services (MES) contractors discovered a luminous blue discharge similar in color to the sanitizer seen in portable restrooms. MES confirmed the presence of fecal matter and other sanitary waste through visual inspection and sent photographs to DOH WQD. The source was not identified, but it appeared to be a one time instance of illegal dumping.
700 Water Street, SW	Discharge of floor stripping liquid from a restaurant on the waterfront marina to Washington Ship Channel via the MS4. [Oct 2004 – Dec 2004]	A DC Hazardous Materials inspector reported to MPD Environmental Crimes Unit an opaque, white discharge into Washington Ship Channel. MPD used dye testing to confirm the source was a restaurant that drained "MOPNSTRIP" fluid into the vestibule that houses the storm catchment. DOH issued the restaurant a Notice of Inspection and Site Directive setting an immediate compliance date for December 6 to clean storm grating in the loading dock and to

SITE	PROBLEM	CORRECTIVE ACTION
		restore the sink clean-out tap cover at a clogged industrial sink. The facility had complied by DOH's second follow-up visit on December 10. Case closed.
Kenilworth Avenue between Nash and Ords Streets, NE	Discolored discharge from a primarily residential neighborhood. [Nov 2004]	DOH responded to a complaint from Discovery Creek staff of a milky, opaque discoloration of the creek. DOH identified a construction site and a school that could be contributing. DOH provided educational instruction to both possible sources stop the discharge of sediment-laden standing water from the uncontained construction site during dewatering and the dumping of cleaning wastewater on the school lawn. Investigation closed.

DOH WQD also visually inspected MS4 outfalls, and the waters to which discharge, in efforts to detect and eliminate illicit discharges in selected sewersheds. Several investigations in 2004 were prompted by the unreported flows DOH WQD personnel observed while conducting outfall inspections and other MS4-related field activities. WASA personnel also performed visual inspections while maintaining catch basins and the MS4 infrastructure.

Additionally, the District continued its efforts to prevent and eliminate suspected illicit discharges to the MS4 through compliance inspections of individual facilities. Inspectors conducted approximately 15 of these facility inspections and investigations in 2004. They also alerted DOH WPD inspection and enforcement personnel when they discovered several other illicit discharges at construction sites. DOH WQD issued 7 NOV and 3 separate Site Directives requiring corrective action to persons deemed responsible for maintenance of facilities that were out of compliance with storm water regulations. Aside from issuing notices for violations of District and Federal clean water regulations, DOH WQD inspectors used the contact with facilities to discuss corrective action and pollution prevention with facility owners and operators. Table 12-2 summarizes compliance inspection activity.

TABLE 12-2 2004 COMPLIANCE AND ENFORCEMENT INSPECTIONS

SITE	SUBJECT	CORRECTIVE ACTION
Belt Road and Donaldson Street, NW Mill Creek	Site of manhole repair [February 2004]	DOH checked progress of repair work on a manhole near Reno Reservoir from which treated water appeared to be flowing into the storm sewer line to Mill Creek. Found repair work still in progress and water discharged into the street flowing toward the catch basin. Mill Creek did not exhibit discoloration or

SITE	SUBJECT	CORRECTIVE ACTION
		other visual of olfactory evidence of illicit discharge from street runoff that day.
R Street and Bladensburg Road, NE	Construction site [February 2004]	Company failed to provide sediment traps to protect MS4 inlets, and failed to place adequate erosion control measures before and during exposure. DOH WQD inspectors referred the case to DOH WPD Inspection and Enforcement Branch.
1729 Bladensburg Road, NE	Obstructed storm drain [February 2004]	Automotive services shop issued a Site Directive on February 23, 2004 to clean out the storm drain within the next two days. The facility was also directed to use filter to prevent fluids from entering the storm drain. The facility complied.
2046 West Virginia Avenue, NE	Temporary waste transfer facility at a hospital center [November 2003 – April 2004]	DOH had issued a Site Directive in November 2003 to correct discharge of dirty water from the facility to an MS4 catch basin. DOH performed follow-up visits until in March they found no evidence of sediment entering the catch basin with ground water pumped from the facility. DOH sent the facility verification of compliance in April 2004. Case closed.
7053 Blair Road, NW	Automobile sales and export facility [March 2004]	DOH found an illicit discharge of dirty water to the MS4. DOH issued a Notice of Violation with multiple directives on March 5. DOH found conditions improved during follow-up, and issued a verification of compliance on March 24 to close the case.
2121 West Virginia Avenue, NE	Automotive repair facility [March 2004]	DOH performed a follow-up visits to determined compliance with a Site Directive issued in November 2003. DOH found the facility still not in full compliance and again ordered the facility to complete corrective actions.
1715 Bladensburg Road, NE	Automotive repair facility [March 2004]	DOH found the facility grounds covered with automotive fluids and issued a Notice of Violation with multiple directives for corrective action on March 15.
21st Street and Bryant Street, NE	Manhole [April 2004]	DOH observed discharge from the manhole and informed WASA, who committed to send crews to the site.
16th Street and W Street, NE	Manhole [April 2004]	DOH observed discharge from the manhole and informed WASA, who committed to send crews to the site.
15th Street and Downing Street, NE	Construction site [April 2004]	DOH WQD inspectors observed then alerted DOH WPD Inspection and Enforcement Branch to a muddy discharge to public space. The discharge was stopped.
1911 New York Avenue, Units A and C	Automotive repair facility [April 2004]	DOH identified the units as the source of an illicit discharge. The owner promptly stopped the discharge and cleaned the site as instructed.
129 Q Street, SW	Automotive repair facility [April 2004]	DOH observed an oil tank and oil bins placed in a way that exposed oil to storm water entering the catch basin in front of the shop. DOH issued an NOV on April 2 instructing the owner to contain the

SITE	SUBJECT	CORRECTIVE ACTION
		smaller bins in the shop or under a roof and to build secondary containment around the large used oil tank. The facility made progress in complying with the directives by the next site visit.
Nash Street and Texas Street, SE Popes Branch	Outfall to Popes Branch [April 2004 – June 2004]	After observing a white, foamy discharge at the outfall, DOH performed several inspections of the outfall and Popes Branch. Their investigation also included dye testing, analytical testing for bacteria, metals, petroleum, chlorine, and building inspections. They discovered broken pipes and sewage discharges along the branch. They also learned that WASA and Army Corps of Engineers were aware of the problem and had agreed to repair the stream (sewer line repair and stream realignment, respectively).
4251 Minnesota Avenue, NE Watts Branch	Automotive facility [April 2004]	DOH found used tires and auto parts inappropriately stored outside and antifreeze spilled inside the shop.
4100 Hunt Place Watts Branch	Automotive shop [April 2004]	DOH found uncovered used tires on the premises. No samples were collected, but visual inspection did not reveal presence of oils, turbidity, trash, or flow that would negatively impact water quality.
6009 Dix Street, NE Watts Branch	Automotive shop [April 2004]	DOH observed that the Clean-Burn storage tank was surrounded with spilled oil, three standing buckets of oil in the bay area, tires and automotive parts stored outside, and a barely functional paint booth with no air filters. DOH noted slight oil and trash that could negatively impact water quality conditions.
5207 Nannie Helen Burroughs, NE Watts Branch	Automotive shop [April 2004]	DOH observed used tires stored outside inappropriately. They did not observe any odors, oils, turbidity, trash, or flow that would negatively impact water quality conditions. No formal enforcement actions taken.
4131 Minnesota Avenue, NE Watts Branch	Automotive shop [April 2004]	DOH observed uncovered used tires and some standing water, but no odors, oils, turbidity, trash, or flow that would negatively impact water quality conditions. No formal enforcement action taken.
10th Street and G Street, NW	Construction site [May 2004]	DOH issued a Notice of Violation on May 5 directing the company to implement erosion and sediment controls and to protect nearby catch basins from muddy discharges. The company complied with the NOV. Case closed.
2nd Street and F Street, NE	Construction site [May 2004]	DOH observed the discharge of sewage from a Sanijohn portable toilet truck near the site. The truck driver was instructed to vacuum the discharge and thoroughly clean the sidewalk. The site was cleaned adequately by the time of the second DOH visit later that day. Case closed.

SITE	SUBJECT	CORRECTIVE ACTION
M and 11 Streets, SE	Construction site [May 2004]	The construction company was checking valves along the drinking water line to ensure that their work would not deprive residents of drinking water. The company quickly completed the test and stopped the drinking water flushing. Closed.
2040 West Virginia Avenue, NE	Automotive sales and repair facility [June 2004]	DOH issued a Notice of Violation on June 17, which directed the facility to clean up antifreeze discharged to public space and properly dispose of waste fluids. The facility complied with the NOV.
Stanton Road and Alabama Avenue, SE	Construction site [June 2004]	DOH WQD observed sediment flowing from the site into a nearby catch basin, and reported it to the DOH WPD Inspection and Enforcement Control Branch.
4319 Third Street, SE	Residential apartment complex [June 2004]	DOH issued a Notice of Violation on June 21 directing management to stop discharging unclean non-storm water into public space. The facility later contacted DOH to confirm that the requested work was being done to correct the problem. (A follow-up inspection was planned.)
1700 block of Montana Avenue, NE between W and Bryant Streets, NE	Retaining wall [August 2004]	Through total chlorine testing in August 2004 WQD inspectors discovered that municipal water was overwhelming a retaining wall on Montana Avenue. Case was closed in September following corrective action.

The District continued its efforts to verify the locations of MS4 outfalls and record latitude and longitude coordinates using GPS. MS4 storm water consultants identified approximately 440 MS4 outfall locations on older sewer maps (last updated in the 1950s and 1960s) created by the former D.C. Water and Sewer Utility Administration. During 2004, the inspectors field verified approximately 140 MS4 outfall locations for a total of 220 outfalls since outfall verification efforts began. In the course of verifying outfalls, inspectors conducted tests for free and total chlorine when possible/accessible.

DOH WPD has refined and updated the District's automated database system for tracking storm water management facilities inspected for maintenance to include tracking of construction projects with storm water management 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 inspections and retrieval of maintenance records.

DOH WQD and the Office of Enforcement, Compliance, and Environmental Justice (OECEJ) continued in 2004 to address Ward 5 automotive repair and autobody shops in 2004 through the Environmental Education for the Compliance of Auto Repair Shops

(EE-CARS) project. EE-CARS completed its environmental outreach and education to shops in Ward 5 during the summer of 2004, reaching the conclusion that the project was successful in gaining environmental compliance of that industry. In the last phase of the project, teams of EPA and District Government inspectors performed multimedia inspections of 43 randomly selected shops from May to June 2004. These inspections were compared with the baseline inspections conducted in May of 2002. EE-CARS found a 36 percent increase in the compliance of automotive repair and autobody shops with D.C. licensing requirements and obtaining certificates of occupancy. The program also observed an increase in the cleanliness and professionalism of the shops' appearances (both inside and out) and an increase in the number of shops presenting evidence that they disposed of used oil and hazardous wastes through used oil recyclers and hazardous waste disposal companies. In addition to the inspections, the shop owners were allowed to voluntarily self-certify their compliance. Too few Self-Certification Forms were returned to draw any conclusions from the self-certifications. The District is evaluating whether to further develop the project for implementation in other wards of the city.

12.2.1 Illicit Discharge Prevention Program

Performance Standard: The District maintains an illicit discharge program designed to detect and eliminate illicit discharges within the district.

The permit requires implementation of a program to prevent illicit discharges. As described above, illicit discharges are investigated based on strong suspicion or evidence of a discharge obtained through visual inspection, a complaint, or during routine facility inspections. Routine facility inspections combined with outreach may help to prevent illicit discharges from occurring, as investigations driven by visual inspection and complaints will help to detect and eliminate on-going discharges.

Outfall monitoring is another component of the MS4 Program that will help the District to detect potential problems with illicit discharge. DOH WQD continued to monitor pollutants at select storm water outfalls during wet weather events in order to determine storm water quality and detect storm water pollutants. In at least one instance last year (see Table 12-1), the presence of monitoring staff in the field led to the report of a potential illicit discharge directly to DOH. The types of pollutants detected during monitoring can also inform the MS4 Program of which sources should be a priority for monitoring and inspection.

The District also continued dry weather monitoring for illicit connections and discharges in accordance with the Permit. One goal of the MS4 Program is to examine every storm sewer line that has flow during dry weather, identify the source of the flow, and categorize the flow (as unauthorized non-storm water, piped stream, etc.). Observing the outfalls during dry weather will ultimately enable the program to quickly identify and respond to flows that should not be occurring.

The results of outfall monitoring are reported to the EPA through Discharge Monitoring Reports and other reports required by the storm water permit. The DMR submitted with this Annual Report will provide the results of available outfall monitoring data associated with samples that were collected after April 19, 2004. Sample analysis results are summarized in Section 15.0 of this report.

Part of the MS4 Program illicit discharge prevention plan is outlined in the Water Pollution Control Contingency Plan first implemented in January 1999. The Water Pollution Control Contingency Plan provides guidance on timely and effective response to hazardous substance releases that threaten to impact the natural resources of the District. DOH WQD plans to use Geographic Information System (GIS) information and images of potentially contaminated sites to help the District secure specific areas and minimize potential health risks. In 2003, the District began to revise the Water Pollution Control Contingency Plan to add important information on the handling of oil spills and biological terrorism. Spill response is described further in 12.2.6.

12.2.2 Floatable 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 Anacostia River Floatable 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 which accumulates on the river banks and in mud flats at low tide. The boats pick up debris five days per week and in FY 2004 removed up to 57 tons per month. 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 District

will continue to conduct the floatable reduction program utilizing skimmer boats on the Potomac and Anacostia Rivers.

The skimmer boats played a key role by removing 684 tons of debris. This represents a significant reduction of floatable tons present in comparison to FY 2003 when 1,145 tons of debris were collected while 12 fabridams were removed under a rehabilitation contract. Since the new fabridams were placed in service in March 2004, most of the floatable debris from the combined sewer system has been redirected and trapped at screens in sewer pumping stations. This has resulted in a significant reduction of pollution from combined sewer system in the waterways.

DOH has completed an evaluation, and plans to install a netting trash rack to remove floatable debris in a major MS4 outfall in the River Terrace neighborhood. This project, when completed, will greatly reduce the discharge of floatable debris to the Anacostia River in this reach. WASA has agreed to provide maintenance of the netting BMP.

The BMP system planned for installation in the National Arboretum on Hickey Run will remove floatable debris as well as treat storm water to remove oil and grease. It is estimated that the system could remove between 20 and 50 tons of floatable debris per year.

12.2.3 Wastes 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.

During the past year, two hazardous waste collection days, where residents may bring hazardous wastes for proper disposal, were conducted by DPW. Collection days were held on April 3rd and October 23rd, 2004.

During the April 3, 2004 waste collection event, at Carter Barron Amphitheater, one hundred fifty one (140) 55-gallon drums of waste flammables, paints, oxidizer,

pesticides, acids, bases, motor oil, and antifreeze were collected. Also collected were boxes of fluorescent bulbs, mercury thermometers, and dry cell car batteries. Care Environmental Corp. was contracted to perform collection and packing of the waste for the District.

A collection event for electronics recycling was held on Earth Day, April 24, 2004. Thirty-four tons of old consumer electronics, 200 pounds of recyclable batteries and 375 pounds of cell phone accessories were recycled at the Earth Day event. This has become an annual event and on Earth Day 2005, April 23, electronics will again be collected for recycling.

During the October 23, 2004 waste collection event, at Carter Barron Amphitheater, one hundred fifty one (151) 55-gallon drums of waste flammables, paints, oxidizer, pesticides, acids, bases, motor oil, and antifreeze were collected. Also collected were computers, boxes of fluorescent bulbs, mercury thermometers, and dry cell car batteries. Again, Care Environmental Corp. was contracted to perform collection and packing of the waste for 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 the DPW utilizing vacuum trucks. A discussion of leaf collection activities is provided in Section 3 of this report.

12.2.4 Inspection Plan

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

The Permit states that the Permittee will use a mix of strategies for the detection and elimination of illicit discharges. Facility inspections and visual inspections of the sewer system are integral parts of the plan to detect illicit discharges. Regarding facility inspections, DOH WQD has drafted a targeted enforcement protocol during the past year based on the analysis of the results of previous monitoring activities. This protocol targets for facility inspections areas that show high frequencies of detections 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.

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 pollutant. Concurrently, inspectors can use their knowledge of the sewer system, maps and other resources to begin tracing back to geographic origin of the pollutants. The industrial facilities database (discussed in Section 4.2.1) and GIS tools under development will be a powerful resource for completing this task. As portions of the MS4 infrastructure are verified and more facility information (on location and wastes generated) are 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.

If a facility is found to be a contributor or potential contributor of the detected pollutants as a result of an inspection, DOH WQD will attempt to bring it into compliance with storm water regulations, which might entail education and/or recommendation for fines or other enforcement actions against the facility. New NOI forms were developed and printed for enforcement purposes.

During 2003, the MS4 Program prepared a Statement of Work (which was approved in early 2004) that would allow them to document more detailed information about the MS4 outfalls during visual inspection based on the experience gained over the first three years of the program. The procedure calls for the dispatching of personnel to various outfall locations to physically confirm the location of the outfalls and obtain GPS readings. A datasheet will be prepared for each outfall and a photograph of the each outfall (showing the outfall number) will be taken. The data collected about the outfalls will be used to update the MS4 Program's outfall database. Another part of the procedure entails investigating dry weather flows in an effort to differentiate between buried (or piped) streams and groundwater seepage from flows caused by illicit discharge. Personnel will use 1800s topographic counter maps that show the original location of streams and groundwater seepage and WASA's detailed storm sewer maps to help with this effort. Any true illicit discharges that are discovered will be investigated by DOH (or referred to

WASA if the discharge is of sanitary sewage). The schedule for completing verification of outfall locations remains the same as put forth in the 2002 Upgraded Storm Water Management Plan, and verification of 50 percent of the system was completed by the end of FY 2004.

12.2.5 Enforcement Plan

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

DOH WQD revised the "*Draft Water Quality Division Enforcement and Compliance Manual*" that describes inspection and enforcement efforts. A copy of the "*Draft DOH Water Quality Division Enforcement and Compliance Manual*" is included in the 2004 Annual Report. The manual is separate from, and broader than, the enforcement protocol described in Section 13.2. The manual establishes the guidelines for compliance inspections conducted by DOH WQD staff.

Enforcement of illicit connections is via an initial corrective action notice from DOH, and then referral to the Plumbing Inspection Branch of the Department of Consumer and Regulatory Affairs for legal enforcement action. The Plumbing Inspection Branch of the Department of Consumer and Regulatory Affairs is responsible for enforcement of illicit connections as violations of the plumbing codes. A discussion of enforcement activities is provided in Section 13.0 of this report.

As a general requirement, the Permit states that the discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste into separate storm sewers shall be prohibited. 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 *et al*, 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 storm water runoff for oil, grease, organic animal wastes and other discharges that violate the water quality standards of receiving waters in the District.

12.2.6 Spill Response Program

Performance Standard: The District has developed and implements the procedures specified in the *Water Pollution Control Contingency Plan* (WPCCP) for spills and chemical releases. The District also provides pollution prevention outreach to managers of facilities, and in-house spill training among the 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, clean-up and follow-up actions resulting from non-permitted discharges. The procedures outlined in the contingency plan are followed for reports of illicit discharges.

To facilitate response to chemical or hazardous waste spills, DOH WQD has been collecting and consolidating information, such as facility and operator contact information, from various sources. This effort included the development of a spill control material list and spill assessment chart with physical and chemical properties of select contaminants clearly outlined and tailored for the spill response needs of the District.

As outlined by the District's WPCCP, DOH WQD emergency response staff will be taught to select effective BMPs for emergency situations based on site-specific considerations such as facility size, climate, rainfall index, geographic location, hydrology, soil type, environmental setting, volume and type of discharge generated, and the number of outfalls. Personnel should be able to differentiate between passive and active BMPs and implement them as a result of training. Protocols are being developed to assay the various components of data collection and analysis for monitoring storm water pollution. As mentioned in Section 4.2.5 of this report, the WPCCP is being updated with current emergency reporting information and notification procedures. The revision also adds new information on response to oil spills and biological terrorism.

DPW has incorporated spill response actions into employee training as part of best housekeeping practices for equipment storage and maintenance facilities. 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 totals less than 25 gallons, 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 totals more than 25 gallons, notification is given 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.

12.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

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

13.0 STORM WATER POLLUTION CONTROL: ENFORCEMENT PLAN

13.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

13.1.1 Permit Requirements

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.

13.1.2 Compliance Summary

The storm water pollution control enforcement plan emphasizes:

- Legal authority
- Enforcement activities and resources
- Documentation of violations, and
- Assessment of enforcement effectiveness

Section 13.2 below provides details regarding these activities.

13.2 ENFORCEMENT ACTIVITIES

13.2.1 Legal Authority

Chapter 5 – Water Quality and Pollution of the DCMR and the Soil Erosion and Sediment Control Amendment Act of 1994, respectively, provide the legal authority to enforce the erosion and sediment control provisions of the SWM Plan. Removal of illicit connections to the MS4 is enforced through the Plumbing Inspection Branch of the DCRA. Enforcement authority prohibiting the dumping of used motor vehicle fluids is provided in D.C. Laws 5-188 and 10-177.

13.2.2 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 draft *Enforcement and Compliance Manual* details the written enforcement strategy concerning enforcement actions.

DOH WPD 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.

DOH WQD enforcement procedures are addressed in the "*Draft Water Quality Division Enforcement and Compliance Manual*", which was updated in FY 2003. This manual 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 operations procedures for inspection and enforcement efforts e within the District.

DOH WPD and the District Police Environmental Crimes unit work jointly to investigate illicit discharges and enforce the District water quality regulations. As a result of illicit discharge investigations, DOH WQD personnel issued Notices of Violation (NOV) and separate Site Directives for corrective action last year. DOH WQD referred at least one case the Plumbing Inspection Branch of DCRA for corrective action.

Furthermore, DOH WPD has allocated three environmental engineers and two environmental specialists in support of these activities. These staff members are fully dedicated to storm water management issues related to implementation of the SWM Plan and the Permit.

13.2.3 List of Violations

Performance Standard: The District maintains a list of violators of the District of Columbia Municipal Regulations pertaining to storm water and soil erosion. This listing is reviewed by DOH staff for needed enforcement actions. The listing of violations and enforcement actions is used as a measure of the effectiveness of the Enforcement Program.

A list of all violations and enforcement actions is included in the Office of Adjudication and Hearings Docket and Case-Tracking Sheet. The Office of Adjudication and Hearings Docket is provided as Appendix 5-A of this report.

13.2.4 Assessment of Effectiveness

During FY 2004, DOH WPD conducted 7,015 inspections at construction sites. On-site inspections were performed to enforce erosion and sediment control, and storm water requirements. As a result of these inspections, 198 cases were referred for enforcement actions (132 NOIs and 66 NOVs). This represents a 7% decrease from FY 2003, when 212 enforcement actions were taken.

13.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

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

14.0 STORM WATER POLLUTON CONTROL: PUBLIC EDUCATION

14.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

14.1.1 Permit Requirements

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.

14.1.2 Compliance Summary

The storm water pollution control public education program entails a mixture of programs emphasizing the MS4 web site, education and outreach activities, household hazardous waste collection events, the pesticide, fertilizer and pet waste programs, industrial and construction site operators programs and cooperative programs with other agencies. A summary is these compliance activities includes:

- Public web site development and update
- Education and outreach
- Household hazardous waste collection and disposal
- Pesticides, fertilizer and pet wastes program
- Industrial facility program
- Construction site operators program
- Agency cooperation program
- District science fair: Storm Water Awareness Award

Section 14.2 below provides details regarding these activities.

14.2 PUBLIC EDUCATION ACTIVITIES

Public education activities conducted during the past year are described in detail in this section.

14.2.1 Public Web Site Development

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

In 2004, WASA expanded its public web site which includes a description of storm water activities and an opportunity to view final reports that have been submitted to the EPA and the Mayor's office. An additional eight pages were included in FY 2005 to the previous four in order to provide more detail and information to the public:

- **Overview: What is a Separate Storm Sewer?** – Get a general overview of the Municipal Separate Storm Sewer System (MS4) and how it works.
- **Municipal Separate Storm Sewer System (MS4) Permit** – Learn about current regulations governing MS4s and how DC WASA is responding to District and federal laws.
- **What Can I Do?** – Learn what you can do to help local water quality.
- **Agency Reporting –** Access current reports including the Annual Report, Semi-Annual Report, Discharge Monitoring Report, Storm Water Management Implementation Plan, and Agency Compliance Plan. This page also links to five separate pages so the public can access old reports (2001-2004) that were submitted to and approved by EPA and the Mayor's office.
- **Agency Storm Water Activities –** Learn about the activities that each agency (WASA, DOH, DPW, DDOT) is implementing for their part of the MS4 Permit requirements.
- **Outfall Verification** – This particular activity conducted by WASA is ongoing and is critical to managing and reducing pollutants from storm water that enters the District's watersheds.

- **Illicit Discharge Inspection -** Inspection of non-sanitary illicit discharges are identified during the outfall verification program and water quality monitoring during dry weather. Any discharges that are considered illegal are reported to DOH for further inspection and possible enforcement actions. All illicit discharges are disconnected from the MS4 once identified.

- **Contact Information** – Find contact information and additional resources for CSS- and MS4-related issues.

The home page for the MS4 pages can be found on the WASA website at: http://www.dcwasa.com/education/ms4/default.cfm

Since its launch, the MS4 web page has been updated regularly to include current information on MS4 and related storm water activities. The pages will continue to be updated with additional public education material on topics such as hazardous waste disposal, recognizing and reporting illicit discharges, public participation, and other topics related to the MS4.

14.2.2 Education and Outreach

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

DOH WPD has developed several outreach programs targeted to teachers, environmental educators and students throughout the District. These programs are:

- **Environmental Education Resource Center –** This center provides resources and materials that teachers and other environmental educators may use to enhance the classroom curriculum and implement conservation projects.

- **Conservation Education (Project Learning, 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).

- **Teacher Training Workshops –** These workshops assist teachers in fulfilling their teaching and learning standards while helping students develop environmental ethics and responsible stewardship.

- **Pollution Prevention –** DOH has issued several grants to promote Pollution Prevention activities impacting the quality of storm water runoff. Under one grant, an environmental organization will conduct a pollution minimization assessment. Students at three high schools will be taught how to conduct the assessment, report and discuss findings, and implement practices to reduce the amount of pollution identified in their schools. Under another grant, an environmental organization will develop and distribute outreach materials on Integrated Pest Management targeting city community gardeners. Lastly, funding will be provided to continue a newly established Green Marinas Program in the District.

- **Schoolyard Habitats Program** – DOH has established a schoolyard habitats program that integrates on-the-ground nonpoint source pollution control activities with the construction of outdoor learning areas. To date, DOH has enrolled 16 schools that are at various stages of constructing schoolyard habitats.

On April 28-29, 2004, DOH WPD presented a workshop and trade show to educate the regulated community on the technical and compliance issues related to our erosion control and storm water management program. The theme of the workshop was "Innovative Approaches to Ultra Urban Erosion and Sediment Control and Storm Water Best Management Practices." The workshop was held at the campus of the University of the District of Columbia, 4200 Connecticut Avenue, NW, Washington, DC. The University of the District of Columbia and the Mid-Atlantic Chapter of the International Erosion Control Association were cosponsors of the workshop.

This workshop focused on:

- Emerging scientific and best available technological solutions to urban soil erosion and sediment control and storm water management.

- The wide-reaching ramifications of the new NPDES Phase II regulations for storm water discharge through municipal separate storm sewer system (MS4s), as it affects new construction projects.

- New construction guidelines as presented in the 2004 District of Columbia *Standards and Specifications for Soil Erosion and Sediment Control* and the 2004 *Storm Water Management Guidebook*.

- Industry-leading companies showcasing new products, services and technologies in the trade show.

- Ideas, knowledge, lessons learned and case studies presented by top-notch researchers, practitioners, regulators, developers, engineers, landscape architects and contractors.

14.2.3 Household Hazardous Waste Collection and Disposal

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

The District promotes the collection and disposal of household hazardous waste through collection days. During the past year, two hazardous waste collection days, where residents may bring hazardous wastes for proper disposal, were conducted by DPW. Collection days were held on April 3rd and October 23th, 2004 at the Carter Barron Amphitheater. These activities are promoted through the use of a public education pamphlet and press releases discussing solid and household hazardous waste. A copy of the pamphlet is provided in Appendix 14-A.

Materials accepted during the household hazardous waste collection days include motor vehicle fluids and household hazardous materials such as: paint, batteries, pesticides, solvents, motor oil, furniture polish, nail polish and remover, and other possibly toxic items. Details of these collection days are provided in Section 12.2.4. Care Environmental Corp. was contracted to perform collection and packing of the waste for the District. A listing of the items collected during the April and October events is presented in Appendix 14-B of this report. A copy of the typical press release for the event is presented in Appendix 14-C of this report.

A collection event for electronics recycling was held on April 24th (Earth Day) 2004. Thirty four tons of old consumer electronics, 200 pounds of recyclable batteries and 375 pounds of cell phone accessories were recycled at the Earth Day event. Plans are to make the Earth Day collection activity an annual event. In 2005, electronic recycling days are scheduled on Earth day, April 23rd and together with the household hazardous waste

collection day planned for May 14, 2005. Both activities are held at the Carter Barron Amphitheater.

"America Recycles Day" was celebrated on November 14 and 15, 2004 at the Carter Barron Amphitheatre. The event promotes the disposal of unusable home electronics, and is sponsored by the District in conjunction with numerous Federal and other organizations, including: Office of Environmental Executive, White House; EPA; Office of Personnel Management; the US Park Services; DELL Computers, The Washington Post and private individual sponsors. More than 33 tons of home electronic were recycled in 2004.

"Clean Your Files Day" is an annual program promoted by the US Conference of Mayors to encourage local governments to conduct recycling events in their offices. The Department of Human Service participated in the event by recycling over 4 tons of paper in FY 2004.

DOH WPD also provides educational opportunities for residents of the District to increase awareness of the proper disposal methods for household hazardous wastes. In 2004, DOH WPD provided participants at 9 workshops with a packet of information on how to *De-Tox Your Home , Alternatives to Toxic Household Products (Chesapeake Bay Foundation).* Additionally, WPD's Nonpoint Source video *River Connections* provides instruction on the proper disposal of motor oil and antifreeze. The video was shown at 6 workshops and copies were lent to 6 DC schools.

While DOH WQD helped with programs like EE-CARS (e.g., by surveying automotive repair shops and reviewing the draft EE-CARS compliance manual), DOH WQD placed more attention on providing on-site compliance recommendations over the past year. During routine inspections, inspectors make recommendations to facility managers concerning the storage, handling, and disposal of hazardous chemicals.

14.2.4 Pesticides, Fertilizer, and Pet Wastes Program

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

Pesticides

DOH WPD has developed an education and outreach program entitled "*Integrated Pest Management/Nutrient Managemen*t." The purpose of the program is to better inform

the public on the proper use, proper disposal, and 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. In 2004 DOH WPD distributed 402 brochures at teacher workshops. The Division has an IPM video that it distributes along with supporting brochures.

District residents are educated on the proper application of pesticides through the Integrated Pest Management Program. This program gives residents guidance on how to choose an appropriate pesticide, how to choose a pest control company, and what regulatory requirements there are 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.

Fertilizer

Through DOH WPD'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 to much mulch. In 2004 DOH WPD distributed 437 brochures through its Environmental Education Resource Center and provided schoolteachers nutrient management information regarding the proper use of fertilizer as part of its "Trees for Kids" project.

Pet Wastes

DOH WPD 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. In 2004, DOH WPD distributed 1,650 *Pooper Scooper* brochures to community residents and girl scouts.

Currently there are laws in the District requiring pet owners to remove animal wastes. A brochure outlining the requirements 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.

14.2.5 Industrial Facility Program

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

DOH WPD performs outreach to industrial facilities through seminars and conferences for managers of industrial facilities. DOH WQD personnel use inspections to promote awareness of the proper methods of storage of chemicals for managers of industrial facilities. Based on what they observe on-site, the inspectors can make facility-specific recommendations to improve the facility's compliance with storm water regulations. As the materials are available the inspectors may also use these opportunities to distribute prepared public outreach materials that still appropriately address the facility operations.

14.2.6 Construction Site Operators' Program

Performance Standard: The District provides educational materials to construction site operators regarding sand filters and other structural BMPs.

DOH continues to distribute a video demonstrating the proper maintenance of the sand filter water quality structure, which is a commonly used BMP on construction sites in the District. DOH maintains a list of qualified storm water management facilities 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 storm water management facilities. To ensure proper maintenance of storm water management facilities, DOH has established guidelines of inspection procedures as required by District of Columbia Municipal Regulations, Title 21, Section 534.1. DOH policy requires the submission and approval of a work plan before restorative maintenance activity of the filter bed for any District sand filter facility can proceed.

Also, as part of the District's environmental compliance project, DOH WPD staff conducted a seminar for Washington Gas Light Company project managers, engineers, construction inspectors, and contractors. The presentations covered topics such as sediment control and storm water management plan review, permit application processes, and DOH WPD inspection and enforcement process. Seminars of this nature can help improve compliance from the regulated community, and ultimately benefit the environment by reducing the generation, release, or deposition of sediment into District waters.

14.2.7 Agency Cooperation 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 continues to maintain partnership arrangements with regional and local organizations. A thorough discussion of partnerships and cooperative efforts, including public education, between the DOH and other Federal, regional, and local agencies and organizations appears in the Nonpoint Source Management Plan II. These partnerships help promote storm water 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 (MWCOG), and the Anacostia Watershed Restoration Committee (AWRC)

District agencies and the ICPRB have identified and developed information on toxics problems, and they have made plans with other agencies that have jurisdiction over upstream waters to work together on reducing the levels of toxics in the rivers.

Together with the AWRC, District agencies have improved water quality, wetlands, forest cover, and ecological integrity of fish habitat in the Anacostia Watershed, and trash removal.

Local and Federal Government Agencies

EPA is providing technical and program support to the Nonpoint Source programs of the District.

Through the DC Urban Initiative, the US Department of Agriculture Natural Resources Conservation Service (NRCS) began a soil erosion assessment for DC Parks and Recreation property throughout the District. NRCS has provided public outreach at various environmental fairs and training courses on stormwater management, and runoff from commercial and residential activities.

Watts Branch Stream Restoration: In 2004, DOH WPD worked with US Fish and Wildlife Service to finalize the stream assessment of this largest District tributary to the Anacostia River. This tributary is a priority watershed for DOH WPD restoration program. The tributary currently fails to meet its designated uses for water quality and has a TMDL for sediments. DOH worked not only with U.S. Fish and Wildlife Service (USFWS), but also DDOT and local non-profits such as Parks and People and the Anacostia Watershed Society in community outreach. In 2004, USFWS completed 10% conceptual designs and DOH and USFWS began the iterative process of reviewing the plans with all stakeholders and moving forward with the designs. DOH anticipates

having 100% designs complete by October of 2005 and will move towards construction once designs are completed.

Pope Branch stream Restoration: Due to the loss of Army Corps of Engineers funding, the DOH WPD worked with WASA and DC Parks and Recreation to ensure that the restoration project continues to move forward. The proposed project will restore both the eroded stream banks of Pope Branch as well as replace a compromised sewer line that runs through the Pope Branch stream valley and crosses the stream in several places. Currently, the DOH WPD is waiting for WASA to complete its review of the MOU that would create a working agreement for both parties and allow DOH WPD to transfer its funding obligated to the project to WASA.

US Department of Agriculture Natural Resources Conservation Service (USDA NRCS) LID Cooperative Agreement: The cooperative agreement between the USA NRCS and DOH was signed by all parties in early 2005. Once the transfer of funds is complete to NRCS, DOH will begin to pick projects for technical review and then NRCS will begin awarding contracts to subcontractors for implementation, until all funds are exhausted. DOH is anticipating the beginning of the first projects in the fall of 2005.

DOH and NRCS have drafted a MOU to complete the revision and updating of the District Soil Survey. The primary items agreed upon that are required and updated are:

1. Digital soil data that meets established USDA's standards:

2. Augment soil information in areas previously mapped as various phases of Udorthents, specifically in regard to: correlating Udorthents to soil series; inventorying soil properties in order to develop hydrologic soil groups in runoff curves and in the District storm water management program; and linear extensibility data for the Christiana soil map unit.

The National Park Service maintains federal land holdings that border District waterways. The National Park Service began restoration activities at the Kingman Lake Wetland, Kenilworth Marsh, Anacostia Fringe Wetlands, and Lower Anacostia Park, and continues to work on the Fort DuPont BMP Construction site and the installation of BMPs at the parking lot for the Anacostia Park.

The US Army Corps of Engineers 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.

The US Geological Survey maintained gauging stations along Rock Creek and Watts Branch that provide data for the discharge monitoring program described in Section 15.0 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.

Howard University's Department of Engineering completed a study of best management practices for DDOT in October 2002. The report is discussed in Section 3.2 of this report. Howard University began preparing design standards for inclusion in DDOT construction projects.

Nonprofit/Environmental Group Partnerships

Rain Barrels in Anacostia Watershed: Using federal grant funds, DOH WPD worked with Community Resources/DC Greenworks to distribute 200 rain barrels to households, non-profit organizations, and public buildings. The majority of these buildings were in the Anacostia watershed. Rain barrels were constructed and/or distributed at rain barrel workshops. There were at least 10 workshops for District residents on stormwater issues, downspout disconnection, rain barrel construction, and rain barrel installation. Visits to sites with rain barrels ensure proper installation and use.

Schoolyard Conservation Sites: In partnership with the National Wildlife Federation (NWF), DOH WPD, using federal funds, began installing schoolyard conservation sites at 11 schools throughout the District. Teachers at each school were trained in watershed education, low impact development, conservation landscaping, and procedures for effectively implementing environmental curricula. DOH WPD worked with NWF to install conservation sites at six schools, and plans to install the remaining five in 2005.

Low Impact Development Outreach in Anacostia Gateway Neighborhood: DOH WPD worked with the Anacostia Watershed Society (AWS) to provide extensive public outreach on low impact development and Anacostia River water quality in the Anacostia Gateway neighborhood. AWS and DOH WPD also worked with National Park Service,

WASA, and DDOT to design the rain garden. AWS coordinated public outreach activities with the DDOT's schedule for installing rain gardens in the Anacostia Gateway neighborhood. AWS made presentations at eight or more community meetings, wrote articles for local publication, and provided each residence in the neighborhood with informational material detailing the purpose of the Anacostia Gateway rain garden. AWS also provided more general information about low impact development.

District agencies worked with the Anacostia River Business Coalition (ARBC), a group of 22 businesses that are adjacent to the Anacostia River. ARBC's mission is to prevent toxic discharges from reaching the Anacostia River. The coalition conducted pollution prevention workshops intended to raise public awareness about trash, oil, fertilizer, pesticides, and prevention methods.

DPW worked closely with Keep Washington Beautiful, inc. to place and maintain 40 learning terminals at select DC Public Schools sites. The terminals were utilized by the teachers and students to engage in research and instructional delivery in the area of environmental education. A listing of the terminal sites was provided in the 2004 Annual Report.

DPW also worked with neighborhood groups to provide tools, trash bags and graffiti paint out kits for neighborhood cleanups under the Helping Hand Program. One hundred eighty (180) cleanups were provided last year through this program. Similarly, DPW worked with neighborhood groups to provide 30 block party cleanups per month.

The AWS Citizen Advisory Committee worked to improve water quality in the Anacostia. Previously , this group and DOH WPD organized a public workshop on low impact development.

An interagency and community task force, the Watts Branch Task Force, addressed impairments to Watts Branch. They coordinated restoration and clean-up efforts on Watts Branch, developed public outreach and education, improved communication between residents, and developed collaborative efforts.

The Pope Branch Citizens Group worked to improve water quality along Pope Branch by controlling erosion through various tree, shrub, and flower planting, and improvements to ground cover. This group was also directed on how to report illegal dumping activities and arrange for bulk trash pickup, and received support from the ARBC.

The Mayor's Environmental Council consists of public and private sector members who help guide the administration on specific environmental issues such as sustainable economic development, smart growth, transportation, environmental health and children, and reclamation, preservation, and protection of the Anacostia River.

A discussion of the roles of non-governmental Agencies is included in the Nonpoint Source Plan, which is in the 2004 Annual Report.

14.2.8 District-Wide Science Fair: Storm Water Awareness Award

As part of an ongoing effort to educate citizens about storm water issues facing the District, the Storm Water Administration and the MS4 Task Force gave the first Storm Water Awareness Award at this year's District-wide science fair. The intent of the award was to stimulate interest among students and teachers in storm water issues. Issues included the importance of reducing floatable trash, pesticides, pet wastes, fertilizers, sediments, and other pollutants in District watersheds such as, the Anacostia River, Potomac River, and Rock Creek. These reductions are critical to improving water quality and reducing toxins in the long term for the protection of aquatic life and drinkable water.

The 2005 Mathematics, Science, and Technology Fair was held at McKinley Technology High School on Saturday and Sunday, March 19-20th. Members of the MS4 Task Force participated in judging student projects and presenting the awards to two students whose projects best exemplified the scope of storm water-related issues in the District:

> For the senior level division: The student whose project was entitled "Pesticides and Ghost Shrimp: A Lethal Combination" won the "Storm Water Awareness Award". Project activities included testing the biological responses through time of a small aquatic invertebrate to various concentrations of permethrin, a popular insecticide readily available to residents of the District for controlling pests in yards and homes. The student quickly learned that seemingly small concentrations of the chemical could cause irreparable harm to the shrimp. During our interview with her, the student stated that there is a need for public awareness of proper disposal of pesticides among residents who may be either unaware of the existing program to dispose of old pesticides or are apathetic to the idea. She also noted that residents might not be able to directly see the impacts their choices have on the aquatic environment. She understood that runoff from lawns during storm events and dumping pesticides into sewer systems can be harmful to the aquatic environment. She also had a good understanding of the broader application of pesticides and their potential

environmental impact if not applied correctly. The Alice Deal High School student received a cash award of $200 and a certificate of achievement from the Storm Water Administration and MS4 Task Force.

For the junior level division: The student whose project was entitled "Water Testing" was the recipient of the "Storm Water Awareness Award". This student tested water quality of the Potomac River mainstem during dry weather at eight sites from the upper Potomac River in West Virginia to the lower Potomac River in the District of Columbia (below Great Falls). The water quality parameters she measured included bacteria, lead, nitrates, nitrites, pH, hardness, and chlorine. She also observed the amount of litter floating in the river at all sites. She had speculated that pollution would increase as she tested water quality closer to urban areas. The student had a good understanding of the environmental pressures that affect water quality including urbanization and agricultural practices. She stated in her interview that both increases in impervious surfaces and an increase in the number of people in a certain area could have a great impact on water quality. She was aware of how pollutants are generally transported downstream through the watershed. This Hardy Middle School student received a cash award of $100 and a certificate of achievement from the Storm Water Administration and MS4 Task Force.

14.2.9 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. All annual and semi-annual reports are being placed on file. In addition, DOH WPD has placed a copy of all IPM and Nutrient Management Information on file at the Martin Luther King, Jr. Library.

14.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

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 storm water runoff is by preventing the pollution at the onset. Pollution prevention is more cost effective than remediation.

DOH WPD accepts the premise that most citizens would protect their environment given the correct information. DOH WPD 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.

DOH WPD has raised awareness of point and nonpoint pollution sources in the community, and, 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 storm water 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.

15.0 STORM WATER POLLUTION CONTROL: MONITORING AND REPORTING REQUIREMENTS

15.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

15.1.1 Permit Requirements

Part IV of the Permit describes monitoring and reporting requirements. The monitoring program consists of:

- Storm event discharge monitoring,
- Dry weather monitoring, and
- Wet weather screening program.

15.1.2 Compliance Summary

The storm water pollution control monitoring and reporting program emphasizes the monitoring of representative outfalls in the MS4, the analysis of sampling event, and the estimation of system wide potential loadings. The following sections provide details regarding the sampling events and loading estimates including:

- Sampling location,
- Criteria for storm water discharge sampling,
- Narrative descriptions of storm events sampled,
- Pollutants and water quality standards for analysis,
- Estimation of event mean concentration, and
- System wide annual pollutant loading.

15.2 STORM EVENT MONITORING AND WET WEATHER SCREENING ACTIVITIES

Performance Standard: The District monitors water quality from established sites in the Anacostia River, Rock Creek and Potomac drainage areas within the District. Sample analysis results are reported in the annual Discharge Monitoring Report (DMR).

Beginning on the date of the permit (Aug. 19, 2004), storm event discharge monitoring of seven Potomac River stations/outfalls was required. The District utilizes these same seven stations/outfalls in the wet weather screening and dry weather sampling programs. The Potomac River watershed is part of the sampling rotation outlined in the permit (Part IV.A.1). A listing of the seven Potomac River sampling stations and their locations is provided in Table 15-1. To date, a total of 11 wet-weather samples and four dry weather samples have been collected from the Potomac River stations. Table 15-2 summarizes the dates of sample collection for each Potomac River station.

Prior to the issuance of the 2004 permit, the District experienced a lapse in the monitoring of Rock Creek stations during calendar year 2003 due to unforeseen budget constraints placed on DOH WQD. However water quality monitoring of Rock Creek was continued in calendar year 2004 at the nine sampling stations (Table 15-3).

Under contract with DOH, Maryland Environmental Services started collecting samples in the Rock Creek subwatershed in September 2003 and continues to collect samples from this subwatershed to meet the permit requirement of a minimum of three wet weather events. To date, a total of 29 samples had been collected from 10 Rock Creek representative stations. Eight of the outfalls were sampled during wet weather and two were sampled during dry weather. Table 15-4 summarizes the dates of sample collection for each station.

Following permit requirements, water quality samples were analyzed at an approved analytical laboratory for pollutants commonly found in urban storm water runoff, including metals, organics, pesticides, volatile organic compounds, and base/acid extractable compounds. Details of monitoring procedures, as well as specific pollutants and water quality parameters of concern are discussed in the Quality Assurance Project Plan (QAPP; 2004 Annual Report). In addition, rain duration and intensity data were collected for the sampled storm events and used with sub-basin areas and pollutant concentrations present to determine system-wide event mean pollutant concentrations and annual pollutant loads for the District's MS4. Complete results of the sample analysis results for 2004 will be saved in the screening program comprehensive database.

TABLE 15-1 POTOMAC RIVER MS4 STORM WATER MONITORING STATIONS.

Site Number	Sampling Location	Estimated Acreage of Drainage Area
1	Battery Kemble Creek-49th and Hawthorne Streets, NW.[a]	12
2	Foundary Branch-at Van Ness and Upton Streets, NW in the park	51
3	Dalecarlia Tributary-Van Ness Street and Dalecarlia Parkway	33
4	Oxon Run-Mississippi Avenue and 15th Street, SE	44
5	Tidal Basin-17th Street and Constitution Avenue, NW [b]	120
6	Washington Ship Channel-Washington Marina parking lot, SW [c]	42
7	C and O Canal-Potomac Avenue and Foxhall Road, NW	627

[a] Sample location shifted one block south due to access issues.
[b] Original location subject to tidal influence. Location shifted up-pipe to 12th & Constitution.
[c] Original location subject to tidal influence Location shifted up-pipe to 14th and Main.

TABLE 15-2 POTOMAC RIVER STORM WATER SAMPLING EVENTS, 2004-2005.

Site Number	Location	Wet Weather
1	Battery Kemble Creek	20 May 2005 6 June 2005 29 June 2005
2	Foundary Branch	20 May 2005 6 June 2005
3	Dalecarlia Tributary	20 May 2005 6 June 2005 29 June 2005
4	Oxon Run	---
5	Tidal Basin	27 July 2005
6	Washington Ship Channel	6 June 2005
7	C and O Canal	22 June 2005

Notes:
--- No sampling or analysis from these stations.
N/A: Not applicable due to no dry-weather flows.

TABLE 15-3 ROCK CREEK MS4 STORM WATER MONITORING STATIONS

Site Number	Location	Estimated Acreage of Drainage Area
1	Walter Reed - Fort Stevens Dr.	25
2	Military Rd and Beach Dr.	37
3	Soapstone Cr. - Connecticut Ave. and Ablemarle St.	330
4	Melvin Hazen Valley Branch – Melvin Hazen Park and Quebec St.	146
5	Klingle Valley Creek – Devonshire Place and 30th St.	52
6	Normanstone Creek – Normanstone Dr. and Normanstone Pkwy.,	45
7*	Portal and 16th Streets	N/A
8*	Broad Branch- Broad Branch and 30th St., NW near the Ivory Coast Embassy.	540
9*	Oregon and Pinehurst	---

*Additional monitoring stations selected by DOH, not listed in the 2004 Permit.
N/A: No acreage of drainage area has been estimated because much of the drainage area is in MD.
---Unknown drainage area

TABLE 15-4 ROCK CREEK STORM WATER SAMPLING EVENTS, 2004-2005.

Site Number	Location	Wet Weather
1	Ft. Stevens	12 Sept 2003* 4 Nov 2004 7 Apr 2005
2	Military Rd.	12 Sept 2003* 4 Nov 2004 7 Apr 2005
3	Soapstone Cr.	22 Jul 2004 7 Apr 2005
4	Melvin Hazen Valley Br.	---
5	Klingle Valley Cr.	14 Oct 2003*
6	Normanstone Cr.	---
7	Portal and 16th Streets [a]	14 Oct 2003* 4 Nov 2004 7 Apr 2005
8	Broad Branch [a]	14 Oct 2003* 7 Apr 2005
9	Oregon and Pinehurst [a]	22 Jul 2004

[a] Additional monitoring stations not listed in the 2004 Permit.
--- No sampling or analysis from these stations.
* Sample analysis data presented in 2004 Discharge Monitoring Report.

15.2.1 Criteria For Storm Water Discharge Sampling

The regulations require that storm water runoff at each of the selected outfalls be sampled from three storm events. An allowable storm event defined in 40 Code of Federal Regulations (CFR) 122.21 (g)(7) must meet the following criteria:

- The storm event must contain greater than 0.1 inch of precipitation.
- Each storm event must be at least 30 days apart from a previously sampled storm.
- Each storm event must be preceded by a period of 72 hours during which no more than 0.1 inch of precipitation has been recorded.

- The rainfall intensity of each storm event must be within 50% of the average median rainfall volume and duration for the region.

Historical rain data for the District Metropolitan Area were collected from records maintained at the National Oceanographic and Atmospheric Administration. Monthly summaries from 1949 through 1996 from the National Airport data collection station were used to determine the mean storm event precipitation and duration values for each month (Table 15-5). The average monthly rainfall in the District is 3.26 inches with an average rainfall intensity of 0.07 in/hr.

TABLE 15-5 MONTHLY RAIN DATA SUMMARY FROM THE NATIONAL AIRPORT DATABASE, 1949-1996

Month	Precipitation (in.)	Intensity (in./hr)
Jan.	2.81	0.04
Feb.	2.61	0.04
Mar.	3.52	0.05
Apr.	2.84	0.05
May	3.73	0.06
Jun.	3.19	0.09
Jul.	3.88	0.11
Aug.	3.97	0.11
Sept.	3.38	0.08
Oct.	3.06	0.07
Nov.	2.99	0.06
Dec.	3.13	0.05
Avg.	**3.26**	**0.07**

Precipitation (actual and predicted normal) amounts for the Washington, DC area for the period of January 2004 through December 2004 are provided in Table 15-6. Precipitation ranged from 1.7 inches (October) to 6.9 inches (July). The normal precipitation for the District ranges from 2.7 inches (April) to 3.8 inches (May).

TABLE 15-6 2004 PRECIPITATION RECORD FOR WASHINGTON, DC

Precipitation		
Month	**Actual (in.)**	**Normal (in.)**
January	3.94*	3.21
February	2.15*	2.63
March	4.54*	3.60
April	3.84	2.77
May	2.98	3.82
June	4.60	3.13
July	6.98	3.66
August	5.09	3.44
September	3.99	3.79
October	1.74	3.22
November	4.50	3.03
December	3.06*	3.05

- Precipitation data from Ronald Reagan National Airport; Source: www.accuweather.com

*During months with rainfall and snowfall, a conversion factor (10 in. snow = 1 in. rain) was used to calculate Actual Precipitation amount.

15.2.2 Narrative Descriptions of Storm Events Sampled

Data logging rain gauges were installed at each of the District's monitoring stations for Rock Creek, and rain gauges at Reagan National Airport were used to monitor stations for the Potomac River. Selected rain gauge site locations and the monitoring stations they represent are described in Appendix 15-A along with rain events for which samples were collected. Narrative descriptions of each sampled storm event are presented in the 2005 DMR. Appendix 15-B provides a summary table of the precipitation accumulation and duration, and time to the previous event for the rainfall events sampled from the Potomac River and Rock Creek.

15.2.3 Pollutants and Water Quality Standards for Analysis

Each composite storm water sample was analyzed at the laboratory for the parameters defined in the QAPP. The list of parameters, the detection limits, and EPA-approved methods utilized for monitoring activities are also included in the QAPP.

DOH maintains the records of monitoring information including:

- Description of Sampling
  - Location/Collection Time

    - Sampling Collection
    - Field Test
    - Maryland Environmental Services personnel who collected samples
- Storm Event Data
    - Date and duration of the storm events samples
    - Rainfall measurements
    - Duration between storm event sampled and the end of the previous measurable storm event
    - Estimate of the total volume of the discharge sampled
- Sampling Difficulties/Field Notes
- QA/QC Review and Clarification
    - Field Test Results
    - Laboratory Results Tables

Analytical results for detected pollutant concentrations from all monitoring events to date are presented in Appendix I of the DMR.

15.3 REPORTING ACTIVITIES

A detailed discussion of the monitoring results is presented in the DMR. Generally, the DMR describes the monitoring sites, sample collection, record keeping, monitoring results, and estimates of loadings over a full year. The DMR submitted with this Annual Report (under separate cover) represents the outfall monitoring activities that occurred after April 19, 2004 for the Potomac River and Rock Creek Stations.

Annual pollutant loading from the MS4 for the 12 pollutants associated with urban storm water (EPA 1992)[1] is estimated in this section. To provide improved statistical integrity, the complete data set of analytical results from samples collected since the issuance of the Permit (August 2004) was utilized to estimate annual loading. For each pollutant, a system-wide event mean concentration was estimated, and the annual loading calculated by the Simple Method as described in the following sections.

[1]U.S. Environmental Protection Agency. 1992. Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Storm Sewer Systems. EPA/833/B-92/002.

15.3.1 Estimation of Event Mean Concentrations

The average EMCs for each monitoring station was calculated as the geometric mean of the measured EMCs in accordance with EPA's *Urban Stormwater BMP Performance Monitoring: Guidance Manual* (ASCE/EPA, 2002).

$$\text{Geomean of EMCs} = \left[\prod_{j=1}^{m} \text{EMC}_j \right]^{\frac{1}{m}}$$

Where:

EMC_j = Event Mean Concentration of storm *j*

m = Number of storms at monitoring location

15.3.2 Annual Pollutant Loading

The MS4 annual pollutant loads for each of the sewersheds where wet weather monitoring was conducted were calculated by the Simple Method. These calculations utilized the single sample results in place of the event mean concentrations together with the total area and land use distribution within the MS4 area of the District. The Simple Method can estimate pollutant loads without extensive rainfall-runoff volume data using the sample analysis results available. Generally, the Simple Method is expected to overestimate pollutant loads as compared to more dynamic models that incorporate pollutant concentration and runoff coefficients as functions of initial conditions and rainfall intensity and duration in estimating total pollutant loads.

The Simple Method is given by the following equation:

$$Li = 1/12 * P * CF * Rvi * Ci * Ai * 2.72 \quad (1)$$

Where:
- Li = Annual Pollutant load (lb/outfall/yr)
- P = Annual Precipitation (in./yr)
- CF = Correction factor (0.9) to adjust for storms where no runoff occurs
- Rvi= Runoff coefficient for the area served by the outfall
- Ci = Event mean concentration of pollutants (mg/L)
- Ai = Sewershed area (acres)
- 1/12 = Conversion factor

2.72 = Conversion factor

Annual precipitation was estimated as 39.1 inches by summing the average monthly rainfall of annual records (1949-1996) for Reagan National Airport. The sewershed area was obtained from the sewershed coverage. A key parameter in Equation 1 is the runoff coefficient, Rvi, which is directly related to imperviousness and land use. Conventionally, a weighted average runoff coefficient for the area served by each outfall is used. A runoff coefficient for each land use category within a sewershed was estimated. Two coverages, land use and sewershed, were overlaid to generate sewershed area with a single land use category, imperviousness and runoff coefficient. Land use categories, impervious surfaces, and runoff coefficients were calculated for each category and presented in Appendix 15-C.

MS4 system-wide annual pollutant loads from the Potomac River and Rock Creek watersheds for the 12 required pollutants were estimated and are presented in Table 15-7 along with the estimated system-wide EMC calculated for each pollutant.

TABLE 15-7. 2004 ANNUAL POLLUTANT LOADING (POUNDS/YEAR) FOR PRIORITY POLLUTANTS OF THE DISTRICT'S MONITORING STATIONS DURING WET WEATHER EVENTS.

	Pollutant Loads (lbs/yr)	
Parameter	**Potomac River**	**Rock Creek**
	Battery Kemble Creek	**Walter Reed-Ft. Stevens**
TSS	3,100	3,260
BOD	587	no data
COD	4,680	11,600
TDS	8,090	29,200
TN	no data	574
TKN	69.4	264
TP	25.6	49
DP	17.9	no data
Cadmium	0.00854	0.0314
Copper	1.45	6.57
Lead	0.142	1.41
Zinc	4.24	15.2
	Foundary Branch	**Military Road & Beach Dr.**
TSS	1,380	15,700
BOD	4,360	no data
COD	8,530	32,900
TDS	29,200	34,100
TN	no data	780
TKN	309	470
TP	153	69.7
DP	34.2	no data
Cadmium	0.0399	0.117
Copper	1.29	5.99
Lead	0.337	2.26
Zinc	2.53	18
	Dalecarlia Tributary	**Soapstone**
TSS	2,630	42,600
BOD	1,180	no data
COD	7,370	47.400
TDS	18,900	251,000
TN	no data	4,370
TKN	206.7	1,460
TP	39.9	296
DP	36.4	no data
Cadmium	0.0145	0.655
Copper	1.83	52.7
Lead	0.176	20.1
Zinc	0.158	170

	Pollutant Loads (lbs/yr)	
Parameter	**Potomac River**	**Rock Creek**
	Washington Ship Channel	
TSS	6,060	
BOD	2,330	
COD	no data	
TDS	14,400	
TN	no data	
TKN	no data	
TP	no data	
DP	no data	
Cadmium	0.0769	
Copper	32.6	
Lead	37.3	
Zinc	37.3	
	C&O Canal	
TSS	98,900	
BOD	124,000	
COD	577,000	
TDS	1,430,000	
TN	no data	
TKN	14,583	
TP	1,980	
DP	1,530	
Cadmium	0.311	
Copper	339	
Lead	67.8	
Zinc	396	

A review of the storm event data reveals minor or no loads of volatile organic compounds, acid extractable compounds, base/neutral extractable compounds, pesticides, PCBs or dioxin. A number of metals are contributed in minor amounts; highest among these are copper and zinc. Moderate loads of nutrients were contributed, while significant loads of suspended and dissolved solids should be noted.

15.4 DRY WEATHER MONITORING

Performance Standard: The District conducts dry weather monitoring of MS4 outfalls that have dry weather flow and seeks to detect the presence of illicit connections and improper discharges to the MS4 system.

Four stations from the Potomac River (Foundary Branch, C&O Canal, Ship Channel, and Oxon Run) were sampled on August 3rd and 4th for water quality analysis. During these

collections, two other stations were surveyed for dry-weather flow, and for Battery Kemble and Tidal Basin stations, there is no dry weather flow known to occur.

Six stations from the Rock Creek watershed (Ft. Stevens, Military and Beach, Soapstone, Melvin Hazen, Klingle Valley, and Normanstone) were sampled on June 30,2004 to complete the dry weather event requirement.

During dry weather, DOH investigators use visual and dye test inspection techniques of facilities within watersheds troubled with intermittent illicit discharges to determine and locate suspected sources.

Dye testing is used to test sewer lines for infiltration, locate sewer lines, check lines for illegal connections, prove septic bypasses, and detect leaks in a closed system. A Standard Operating Procedure for "Dye Testing to Find Sanitary Sewer Leaks" was completed on June 4, 2004.

Identifying District storm water outfalls also involves free and total chlorine testing at all locations with flow during dry weather. The test results are being retained for evaluation. The storm water outfalls with chlorine levels exceeding storm water standards will be further investigated after the outfall identification is completed.

15.5 IDENTIFICATION OF WATER QUALITY IMPROVEMENTS OR DEGRADATION

The sample analysis results reported in the DMR have been utilized in the continued evaluation of the MS4 system to identify retrofits and modifications necessary to meet the requirements of the CWA, the requirements of this Permit, and to continue to improve water quality in the District.

15.6 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

Full implementation of this program is critical with respect to complying with the CWA. The District's monitoring and reporting program provides the necessary water quality for the suite of potential pollutants noted under the CWA.

These data provide a direct measure of assessment for the effectiveness of the overall program. Comparisons of the data to the TMDL loading calculations provide necessary information to better direct the program activities of the District. The application of the

dataset as a management tool can lead to more effective actions, applications of BMPs, and programs that help meet the requirements of the CWA.

16.0 STORM WATER POLLUTION CONTROL: STORM WATER MODEL USING A GEOGRAPHICAL INFORMATION SYSTEM

16.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

16.1.1 Permit Requirements

Part V of the Permit describes reporting requirements for the development of a Geographical Information System, GIS, stormwater model.

16.1.2 Compliance Summary

The storm water pollution control storm water model uses a Geographical Information System to compile information concerning the district. Data compiled to date include: street maps, waterway maps, land use and zoning maps, the District's MS4 piping system, individual MS4 outfalls and accompanying sewersheds, field survey information concerning specific outfalls, and potential BMP location maps. Work continues on using the model to estimate pollutant loadings for District's watersheds.

16.2 PROGRESS MADE IN DEVELOPING A STORM WATER MODEL AND GEOGRAPHICAL INFORMATION SYSTEM

Performance Standard: The District maintains a stormwater model of the district. The model has been developed using GIS information of the District. Specific GIS information regarding the MS4 system, outfall inspection, pollutant estimates have been added to the model. Each progress in expanding and improving the model is made in order to better model storm water pollution control in the district.

The District maintains a stormwater model of the district. The model has been developed using the Arc View platform with GIS information provided by District and federal government agencies. Basic geographic information compiled to date include:

- District boundaries and individual parcel information (based on the District's tax maps)
- Street maps and names, including, schools, parks, bus and train stations, federal buildings, and other features found in commonly available maps.

- Waterway and waterbody information
- Zoning information

GIS information specifically regarding the MS4 system have also been included.

- MS4 piping system as per the District counter maps
- Outfall information: location (using both street address and Global Positioning System [GPS] coordinates), size and type of pipe.
- Field verification information: verified GPS coordinates, photo of every outfall, presence (or not) of flow, condition of outfall, and chlorine level of flows present.

16.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

The District's storm water model provides an important management tool for the coordination and evaluation of the storm water pollution control effort. As the model continues to develop, the geographic data coupled with the monitoring data of the previous section will provide information regarding the District area of greatest need. In this manner, as a management tool, the storm water model helps to meet the requirements of the CWA.

17.0 HICKEY RUN STORM WATER POLLUTION CONTROL USING THE TOTAL MAXIMUM DAILY LOAD

17.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

17.1.1 Permit Requirements

The Permit in Part VI describes the permit requirements relating to the Hickey Run TMDL.

17.1.2 Compliance Summary

The storm water pollution control program for Hickey Run emphasizes compliance with the Hickey Run TMDL for oil and grease. Activities emphasize:

- Monitoring of Hickey Run for oil and grease on a rotating basis with the Anacostia watershed monitoring stations,
- Development of a cooperative agreement with the National Arboretum for the installation and maintenance of the BMP.
- Develop a detailed post construction BMP monitoring plan of sampling and protocol requirements, and
- Complete the final *Hickey Run BMP Compliance Plan*.

Section 17.2 below provides details regarding these activities.

17.2 HICKEY RUN TMDL ACTIVITIES

Hickey Run is a small tributary to the Anacostia River. The headwaters of Hickey Run are part of the MS4 with four outfalls located close together. Through these four outfalls, the storm sewer gives way to an open stream channel. The creek then flows through the National Arboretum (NA) for less than a mile before meeting the Anacostia River. Figure 17-1 illustrates the Hickey Run sewersheds and outfalls.

Illegal oil and grease dumping have historically plagued the stream. Above the open stream, there are a number of transportation-related facilities in the watershed (gas stations, repair shops, etc.) many of which do not properly dispose of waste oil. Also, oil and grease flush into the storm sewer system during rainstorms.

While much of the oil and grease originates from nonpoint sources in the upper half of the Hickey Run watershed upstream from the four outfalls, these pollutants find their way to the storm sewer system and are thus classified as point sources in the Hickey Run TMDL.

17.2.1 Monitoring

Performance Standard: The District monitors a representative outfall in the Hickey Run watershed as part of the storm water monitoring program. The results are presented in the annual Discharge Monitoring Reports.

Monitoring for oil and grease at the 33rd and V Street, NE, Hickey Run MS4 site, is to be performed on a rotating basis in the same year as the other Anacostia River MS4 locations. The Hickey Run and Anacostia sites will next be monitored in 2005.

Monthly ambient water quality monitoring of Hickey Run indicates that oil and grease analyses were less than 5 mg/L. The 2003 ambient sample analysis results are presented in Section 16 of the 2004 Annual Report, and in the 2004 Discharge Monitoring Report.

The Permit stipulates that ambient water quality monitoring of Hickey Run should continue at its current location. Part VI Paragraph 1 states that "*in the event, monitoring station THRO1 downstream on Hickey Run shows violations for oil and grease (above water quality standard criterion of 10 mg/l), the Hickey Run MS4 site and BMP shall be sampled in accordance with the Permit's Monitoring Program on an annual basis"*. To date the ambient sample has not exceeded the water quality standard.

17.2.2 Cooperative Agreement With National Arboretum

Performance Standard: The District has signed a MOU with the NA for the installation of BMPs within the NA. The conceptual design, and construction of BMPs for the NA is being handled by the US Department of Agriculture (USDA) Agricultural Research Service (ARS).

The District has entered into a MOU, with the USDA, ARS at the NA for the purpose of improving the water quality of Hickey Run. In the MOU the ARS agreed to hire a contractor to evaluate the recommendations made previously, prepare a design package reflecting the agreed upon alternative and install the system. ARS has contracted Earth Tech, Inc. as the primary subcontractor and Ecologix as a stakeholder subcontractor to provide a conceptual design for a BMP device or system to be installed on Hickey Run.

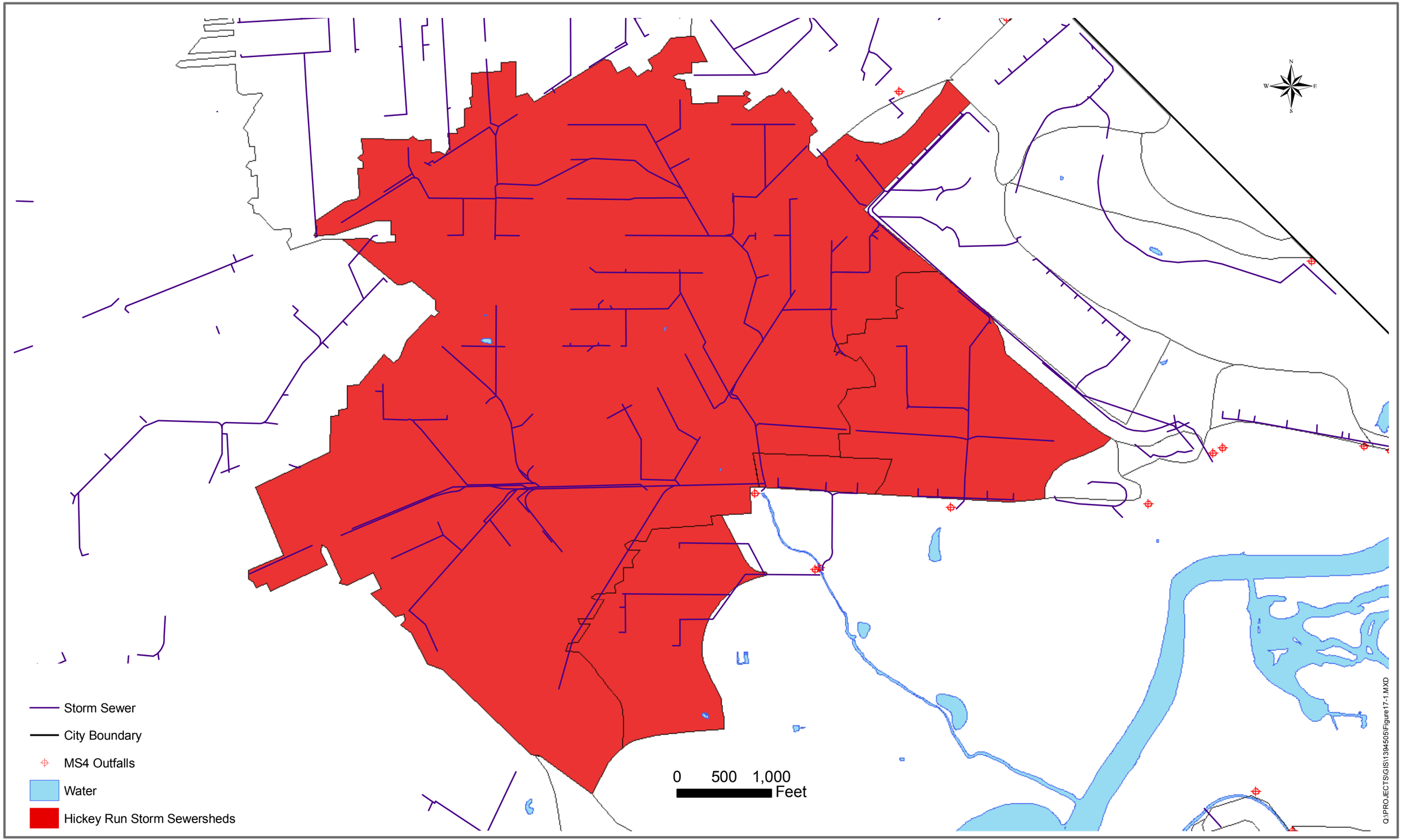

Figure 17-1. Hickey Run Storm Sewersheds

- In signing the MOU, the ARS agreed to hire contractors to: (1) evaluate previous recommendations of the Center for Watershed Protection to determine the optimal approach for removing floatable debris and oil and grease from Hickey Run; (2) prepare a design package reflecting the agreed-upon optimal approach for removing floatable debris and oil and grease from Hickey Run; and (3) install the systems.

17.2.3 Design of Hickey Run BMP and Monitoring Plan

Performance Standard: The District is cooperating with the NA for the design and installation of BMPs within the NA. The conceptual design, and construction of BMPs for the NA is being handled by the USDA ARS.

- ARS has contracted with Earth Tech, Inc., through Naval Facilities Engineering Command (NAVFAC) Washington to provide a conceptual design for "...a stormwater control structure device/pollution abatement system to be installed on Hickey Run..." with the emphasis of the conceptual design on "...environmentally sensitive management of stormwater and related natural resources." The system "...shall meet regulatory requirements for stormwater discharges, i.e., removing floatable solids, oil and grease from the New York Avenue outfall, which discharges to Hickey Run."

- In January 2005, Earth Tech completed the *Draft Final Permit Identification Summary Hickey Run Stormwater Pollution Abatement Project*. This document discusses the permits required to install one or more BMPs in the NA.

The assessment done by the United States Fish and Wildlife Service (USFWS) on Hickey Run watershed, mainstem and its tributaries has been approved by DOH but remains under review and with some issues from the NA staff. USFWS has responded in writing to all concerns and we await acceptance of the assessment by NA.

The USFWS assessment yielded the following findings: The majority of tributaries, except where piped, appear physically unaltered by channelization activities and free to adjust naturally. The Service delineated twenty-eight separate stream reaches, representing twelve different Rosgen stream types, based on geomorphologic character and stability conditions. Instream habitat conditions are fair to good in most tributaries with some poor areas. The riparian buffer ranges in width from 20 to 1,300 feet and

consists mostly of mature woodlands with some areas consisting of woody shrubs and non-native species. Overall, the tributaries are relatively stable (72 percent vertically stable, 68 percent laterally stable), and only slightly incised (60 percent rated as low to moderate), but have a very high potential sediment supply on a majority of the tributaries (51 percent). Recovery potential of the degraded areas is poor and will only occur if the cause of the instability is corrected.

The Service partitioned the main stem of Hickey Run into six reaches based on geomorphologic character and stability conditions and identified three Rosgen stream types. The entire main stem has been physically altered and nearly half has been hardened into place with either large rip rap or concrete. In most areas where it has not been hardened, it is actively eroding (67 percent laterally and 47 percent vertically adjusting). Fifty seven percent of the reaches are severely incised and entrenched. Instream habitat diversity and cover quality varies from poor to moderate. Water quality is impaired by urban runoff, sewer line leaks, and past petroleum leaks. The riparian buffer varies from mowed grass to wide, mature woodlands. The potential sediment supply is very high. The Service predicts approximately 1,100 tons of sediment erodes from the stream banks of Hickey Run annually. The potential for Hickey Run to recover on its own, given its current condition, is poor.

Changes in the watershed and physical alterations to the Hickey Run are the primary causes for instability, poor water quality and aquatic habitat problems. High percentages of impervious surface in the watershed, along with conversion of many of the tributaries to piped or concrete-line storm drains have altered Hickey Run's natural hydrology. Base flows (groundwater derived flow) are lower than in a predominantly forested or agricultural watershed, and storm flow peaks are of greater intensity but shorter duration (flashiness). These higher flows and greater velocities have caused and are still causing stream erosion and channel incision throughout Hickey Run.

The Service derived Hickey Run restoration costs based on restoration costs developed as part the Oxon Run Stream Restoration Concept Development (Shea, et al, 2004). The restoration costs include construction costs only and are applied on a linear foot cost at the rate of $230.00. Preliminary restoration costs for Hickey Run are $1.2 million. The Service will refine the restoration costs during the design phase as details of restoration solutions and their locations are finalized.

17.2.4 Preparation of the Final Hickey Run Action Plan

In October 2002, the District prepared a draft MS4 management plan for the four Hickey Run sewersheds titled, "*Hickey Run Action Plan to Comply with MS4 Permit Requirements.*" A copy of the draft plan text is presented in Appendix 17-B of the 2004 Annual Report. This plan reviewed and evaluated data, and provided recommendations for structural and non-structural BMPs and education programs and activities designed to reduce oil and grease loading from the MS4 outfall to Hickey Run.

The 2002 *Hickey Run Action Plan* evaluated BMPs that would reduce pollutants including oil and grease discharged from the MS4 to Hickey Run. The results presented were based on work by The Center for Watershed Protection, who conducted an evaluation of BMPs that could be potentially installed in Hickey Run near New York Avenue. A structural BMP consisting of a centrifugal separation device as the primary treatment combined with a netting trash rack was recommended. When coupled with supplemental sorbents the device is able to treat oil and grease at low rainfall intensities.

Under the current MOU Earthtech Inc has been retained under contract to design and build a BMP at the NY Avenue outfall. In addition, Ecologix has been hired specifically to engage every possible stakeholder in the community, federal partners, non-government organizations etc. Every stakeholder will have a chance to meet with Ecologix to discuss their concerns. At these junctures, stream assessment and potential restoration work, as well the construction of the BMP, will be brought up for discussion by DOH.

The Final *Hickey Run Action Plan* will be represent a composite of

- The MOU developed with the NA,
- The BMP design by Earthtech Inc.,
- A summary of the public response to the BMP design, and
- A description of the BMP monitoring plan.

The completion date of the final *Hickey Run Action Plan* will be dependent upon the time table and completion of the above activities.

17.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

The Hickey Run Watershed provides a sub-watershed to model the impacts of the SWM program. The watershed has been monitored as part of the Anacostia watershed rotation, has one or more BMPs in the design stage, and has been subject to an extensive educational awareness campaign under the EE-CARS program. In this manner the Hickey Run watershed provides a management tool which helps to both assess the effectiveness of the District's SWM program and meet the requirements of the CWA.

18.0 TOTAL MAXIMUM DAILY LOADING WASTE LOAD ALLOCATION IMPLEMENTATION PLANS

18.1 PERMIT REQUIREMENTS AND COMPLIANCE SUMMARY

18.1.1 Permit Requirements

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

18.1.2 Compliance Summary

The Permit of August 19, 2004 specified that the Anacostia TMDL-WLA Implementation Plan Watershed be submitted to EPA within six months of the effective issuance of the Permit (February 19, 2005). In calendar year 2004, the District compiled a *Draft Anacostia Total Maximum Daily Load Waste Load Allocation Implementation Plan* for in-house review in preparation for the submittal in February 2005.

18.2 PROGRESS MADE DEVELOPING TMDL-WASTE LOAD ALLOCATION IMPLEMENTATION PLANS

Performance Standard: The District is active in developing implementation plans for the reduction of the MS4 waste load allocation in order to help meet the TMDL specified for its waterways.

The District has taken steps to submit an implementation plan for compliance with the TMDL of pollutants originating on land areas in the Anacostia watershed within the District. The objective of the plan is to:

- Document past efforts to reduce pollutants identified in the Anacostia watershed TMDL documents and estimate the magnitude of the reductions achieved.
- Identify existing District activities and programs for additional effort focused on reducing specific pollutants in the MS4 discharges to the Anacostia River watershed.
- Identify and prioritize additional programs and activities to achieve the necessary

additional reduction in specific pollutants.

- Identify cost effectiveness of and financial requirements to implement the additional programs and activities presented in the plan.

The implementation of this plan will be monitored and evaluated and the plan will be updated in five years to reflect the results of the monitoring program, the District's TMDL compliance obligations, and if necessary and appropriate, advances in technology and evaluations of effectiveness.

18.3 HOW THIS PROGRAM MEETS REQUIREMENTS OF THE CLEAN WATER ACT

The District is developing watershed specific implementation plans for each of the District's major watersheds. The implementation plan will discuss the level of effort needed to meet the TMDL waste load allocation determined for the watershed. This plan will be used as a management tool to both direct future storm water efforts and estimate the anticipated costs of the activities. In this manner, the implementation plans help to meet the requirements of the CWA.