GOVERNMENT OF THE DISTRICT OF COLUMBIA
WASHINGTON, DC

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221

2003 ANNUAL REPORT

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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

Page

TABLE OF CONTENTS (continued)

Page

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

Page

TABLE OF CONTENTS (continued)

LIST OF APPENDICES

LIST OF APPENDICES (continued)

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

AQD	Air Quality Division
ARBC	Anacostia River Business Coalition
AWRC	Anacostia Watershed Restoration Committee
BCAC	Building Code Advisory Committee
BMP	Best Management Practice
BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSS	Combined Sewer System
CWP	Center for Watershed Protection
District	District of Columbia
DCMR	Department of Columbia Municipal Regulations
DCRA	District of Consumer and Regulatory Affairs
DDOT	Department of Public Works Division of Transportation
DMR	Discharge Monitoring Report
DMS	D.C. Water and Sewer Authority Department of Maintenance Services
DOH	Department of Health
DPW	Department of Public Works
DSS	D.C. Water and Sewer Authority Department of Sewer Services
EAB	Environmental Appeals Board
EBPI	Environmental Business Performance Indicator
EE-CARS	Environmental Education for the Compliance of Automotive Repair Shops
EISF	Environmental Impact Screening Form

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

EMC	Event Mean Concentration
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GSA	US General Services Administration
HPO	Historic Preservation Officer
HWD	Hazardous Waste Division
ICPRB	Interstate Commission on the Potomac River Basin
IECA	International Erosion Control Annual
in.	Inch(es)
IPM	Integrated Pest Management
lb	Pound(s)
LID	Low Impact Development
LQG	Large Quantity Generator
LTCP	Long Term Control Plan
mg/L	Milligram(s) Per Liter
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MSDS	Material Safety Data Sheet
MWCOG	Metropolitan Washington Council of Governments
NDPES	National Pollutant Discharge Elimination System
NOAA	National Oceanic and Atmospheric Administration
NPS	Nonpoint Source
NRCS	Natural Resources Conservation Service

NRDC	Natural Resources Defense Council
OECEJ	Office of Enforcement, Compliance, and Environmental Justice
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
SOP	Standard Operating Procedure
SQG	Small Quantity Generator
SWEEP	Solid Waste Education and Enforcement Program
SWMP	Storm Water Management Program
TMDL	Total Maximum Daily Load
TSDF	Treatment, Storage, and Disposal Facility
USDA	U.S. Department of Agriculture
VMS	DDOT subcontractor; no information on what VMS stands for
WASA	DC Water and Sewer Authority
WMATA	Washington Metropolitan Area Transit Authority
WPCCP	Water Pollution Control Contingency Plan
WPD	Department of Health Watershed Protection Division
WQD	Department of Health Water Quality Division
yr	Year

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

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221
2003 Annual Report

SUMMARY AND FINDINGS

S.1 GENERAL

The Government of the District of Columbia (Permittee) submits this Annual Report 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 in compliance with the reporting requirements as defined in Parts II, III.B, III.D, and IV of the Permit.

S.2 BACKGROUND

The U.S. Environmental Protection Agency (EPA) granted a Municipal Separate Storm Sewer System (MS4) NPDES Permit (Permit) to the District of Columbia (Permittee) on April 19, 2000. The Permit allows discharge from the MS4 system to the Potomac and Anacostia Rivers and tributaries in accordance with the conditions of the Permit. The Permit runs through April 19, 2003, after which it must be reissued based on a new application by the Permittee. On October 19, 2002, the District applied for a new NPDES permit and submitted an upgraded Storm Water Management Plan and Storm Water Management Program (SWMP) for approval. The reapplication and SWMP are currently under review by the EPA.

On June 12, 2001 DC Law #13-311 “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 in connection with permit compliance activities.

The Act also established a Storm Water Permit Compliance Enterprise Fund (the Fund) to fund the Storm Water Administration's MS4 Permit implementation activities. Monies from the Fund are to be available to the participating agencies for costs incurred because of MS4 Permit mandated activities.

WASA executed a Memorandum of Understanding (MOU) on December 11, 2000 with the Permittee, the Chief Financial Officer of the District of Columbia, 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.

As of October 1, 2002, the newly formed District Department of Transportation (DDOT) has taken on some of the responsibilities formerly assigned to DPW. The general areas of responsibility for DDOT concern the construction and maintenance of streets and roads and the removal of snow and ice.

S.3 ANNUAL REPORT SUMMARY OF FINDINGS

This Annual Report finds that significant achievements have been made during the past year addressing the required provisions of the Permit. The following subsections summarize the activities over the past year to reduce pollutant loading from MS4 outfalls, and progress in the development of programs, systems, and the legal framework to track progress, manage activities, and integrate storm water management responsibility into agencies of the District government, private industry, and citizen activities within the District of Columbia.

S.3.1 Source Identification

The existing MS4 infrastructure mapping and outfall location data have been combined to develop a database. The mapping, together with the evaluation of changes as defined in the Permit, substantively comply with the Permit requirements.

S.3.2 MS4 Retrofits

The discharge monitoring program, MS4 infrastructure mapping and storm water model development are necessary components of the MS4 evaluation to be conducted.

Significant progress has been made in system mapping and the collection of discharge water quality data.

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 has signed agreements with DPW and the General Services Agency (GSA) requiring federal contractors working on buildings or highway improvements to meet the requirements of the District's Erosion and Sediment Control Regulations.

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 final draft of 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. A public hearing is scheduled in January 2003 to solicit public comments before the documents will be ready for distribution to the general 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. An assessment of flood control measures necessary to meet the requirements of the Clean Water Act was submitted in the Upgraded SWMP in October 2002.

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

DPW is currently utilizing many of the components of a program to monitor and reduce pollutants in storm water discharges from municipal waste facilities as it refurbishes the 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

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 SWMP. The two primary components of developing the hazardous waste plan are: identification and mapping of facilities, and monitoring of storm water discharge to identify facilities that are contributing a substantial pollutant loading to the MS4. Both of these activities are in progress.

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," and the "Discharge Monitoring Program."

S.3.10 Deicing Activities

The District has completed a comparison of deicing products, studies of alternative chemicals and deicing techniques. 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.

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 SWMP 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 Pollution Control Contingency Plan* " and the draft "*Enforcement and Compliance Manual*" which are in under review by DOH. Both of these drafts were discussed as part of the upgraded SWMP submitted in October 2002.

S.3.13 Enforcement Plan

A written enforcement strategy for stormwater violations on construction sites was prepared and submitted in the 2001 Annual Review. This strategy is utilized by DOH staff during inspection of construction sites and subsequent enforcement actions.

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. 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. Public education efforts continue to include pamphlet distributions on topics such as: pet waste, household hazardous waste, oil and grease in Hickey Run, and pesticides and herbicides. A video demonstrating proper maintenance of the sand filter water quality structure has also been developed and used in construction operator training.

S.3.15 Monitoring of Storm Water Outfalls

The Discharge Monitoring Report submitted together 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 Hickey Run Total Maximum Daily Load

The District has implemented 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 evaluating potential BMPs to reduce the amount of oil and grease discharged into Hickey Run. The District is also continuing discussions with the National Arboretum to better coordinate efforts to reduce floatable debris in the Arboretum's surface water system.

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

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221
2003 Annual Report

1.0 INTRODUCTION AND METHODOLOGY

1.1 GENERAL

The Government of the District of Columbia (Permittee) submits this Annual Report in compliance with its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Water System Permit No. DC0000221. A copy of the NPDES Permit is included in Appendix 1-A. This Annual Report is submitted together with the Implementation Plan and Discharge Monitoring Report in compliance with the reporting requirements as defined in Parts II, III.B, III.D, and IV of the Permit.

1.2 BACKGROUND

The Environmental Protection Agency (EPA) granted a Municipal Separate Storm Sewer System (MS4) NPDES Permit (Permit) to the District of Columbia (Permittee) on April 19, 2000. The Permit allows discharge from the MS4 system to the Potomac and Anacostia Rivers and tributaries in accordance with the conditions of the Permit. The Permit runs through April 19, 2003, after which it must be reissued based on a new application by the Permittee. On October 19, 2002, the District applied for a new NPDES permit and submitted an upgraded Storm Water Management Plan and Storm Water Management Program (SWMP) for approval. The reapplication and upgraded SWMP are currently under review with the EPA.

1.2.1 Storm Water Act

On June 12, 2001, DC Law #13-311 "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 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. The General Manager of WASA is empowered to designate a person to head this new Administration. The Act also established a Storm Water Permit Compliance Enterprise Fund (the Fund) to fund the Storm Water Administration's MS4 Permit implementation activities. 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.

To capitalize the Fund, the Act authorized WASA to collect a flat storm water fee from all retail 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 separate funding strategy based on the portion of a user's property that is impervious area.

The Act requires the Department of Health (DOH), Department of Public Works (DPW), the District Department of Transportation (DDOT) and WASA to 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. The Act indicates that the reports 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, federal grants, and the Water and Sewer Enterprise Fund. A copy of the Third Semi-Annual Report issued in December 2002 is provided in Appendix 1-B.

1.2.2 Memorandum of Understanding

WASA executed a Memorandum of Understanding (MOU) on December 11, 2000 with the Permittee, the Chief Financial Officer of the District of Columbia, the DOH, and the DPW. A copy of the MOU is provided in Appendix 1-C. The MOU assigns responsibilities among the foregoing parties for compliance with the Permit. As of October 1, 2002, the newly formed DDOT has taken on some of the responsibilities formerly assigned to DPW. The general areas of responsibility for DDOT concern the construction and maintenance of streets and roads and the removal of snow and ice.

The MOU also mandates preparation of an Agency Compliance Plan each year. This plan is to set 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, 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 first of these plans, entitled "Draft FY 2002 Agency Compliance Plan," was issued November 15, 2001. The 2003 Agency Compliance Plan was prepared and submitted to the City Council after the approval of the District budget by Congress. A copy of the Agency Compliance Plan is provided in Appendix 1-D.

1.2.3 Storm Water Permit Compliance Enterprise Fund

The Storm Water Permit Compliance Amendment Act of 2000 (DC Law #13-311) 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 and 1.4% of the water rate from multi-family residential water and sewer customers, with 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 projected to be approximately $2.5 million per year, increasing to $3.1 million per year in fiscal year (FY) 2005, when the federal government facilities begin paying the (storm water) fee. Income from the Fund is to be available to any District agency for costs incurred to comply with the terms of the Permit, including administration, operations and capital projects. WASA has established a system to approve and reimburse eligible expenditures from the fund.

As mentioned, the District is currently investigating a storm water rate structure based on the portion of a user's property that is impervious area. Results of this study are expected in 2003.

1.2.4 Annual Reporting

The District submitted the 2002 Annual Report, Implementation Plan, and Discharge Monitoring Report (DMR) to the EPA on April 19, 2002. The Annual Report described MS4 permit related activities conducted by District agencies during 2001, while the 2002 Implementation Plan outlined projected activities scheduled for the upcoming three years. The Discharge Monitoring Report included the analytical laboratory results of discharge samples collected from June 2001 until March 2002. The 2002 Annual Report was accepted by EPA on May 2, 2002. A copy of the letter is included in Appendix 1-E.

1.2.5 EPA Draft Amendment No. 2

The EPA issued Amendment No. 2 to the MS4 Permit in response to a request for alternate monitoring locations by the District. The background and history leading to Amendment No. 2 is discussed in the following paragraphs.

On January 12, 2001, the EPA issued Amendment No. 1 to the NPDES Permit which approved the nine alternative monitoring locations along the Anacostia River discussed in Section 16 of this report, and added a new subsection to Part IX under Section A (Modification of the Permit). The new subsection further specified when the Permit may be reopened and modified in order to address additional modifications deemed as necessary by EPA to meet applicable requirements under the Clean Water Act.

On February 20, 2002 and May 9, 2002, the Environmental Appeals Board (EAB) rendered a Decisions and Order in response to a petition by Friends of the Earth and Defenders of Wildlife. A number of issues were specifically remanded to EPA, Region II for response. The issues remanded were as follows:

(1) modify the Permit provisions to required formal permit modification in accordance with 40 CFR 122.62 prior to authorizing a change to the location of monitoring station locations;

(2) modify the permit provisions and further clarify which Permit provisions must be addressed through formal “notice and comment” procedures of 40 CFR 122.62 and which may be addressed through “minor” modifications (without formal notice and comment);

(3) to propose a Best Management Practice (BMP) effluent limit sufficient to protect water quality standards and consistent with the wasteload allocation set forth in the Hickey Run total maximum daily load (TMDL) for discharges from the four Hickey Run outfalls to replace the existing single numeric effluent limit applicable to those four outfalls;

(4) clarify the monitoring conditions and requirements for the MS4 Hickey Run outfalls in accordance with the requirements of 40 CFR 122.48(b) and 122.44(i) of the NPDES regulations;

(5) to provide additional record support for the Region's determination that the system-wide controls required by the Permit will ensure compliance with applicable water quality standards;

(6) provide additional explanation regarding the incorporation by reference in the Permit of the District's storm water regulations including the District's limited discretion to grant various waivers and exemptions.

In a letter of June 7, 2002, the DOH proposed six alternative monitoring sites along Rock Creek. This letter is provided in Appendix 1-F. In response, the EPA drafted in August 2002 an Amendment No. 2 to the Permit, which was presented in a public comment period from August 7, to October 7, 2002. The draft amendment included the change of sampling locations, and attempted to address several of the issues remanded by the EAB decision.

On March 19, 2003 the completed Amendment No. 2 was issued. A copy of Amendment No. 2 is provided in Appendix 1-G.

The Fact Sheet to Amendment No. 2 (see Appendix 1-G) summarizes the issues addressed in Amendment No. 2.

In Amendment No. 2, the Region is addressing the following three issues, two of which (Issues 1-2) were specifically remanded by the EAB to Region III. Those three issues are:

(1) modify the Permit provisions to require formal permit modifications in accordance with 40 CFR 122.62 prior to authorizing a change to the location of monitoring station locations;

(2) modify the Permit provisions and further clarify which Permit provisions must be addressed through formal "notice and comment" procedures of 40 CFR 122.62 and which may be addressed through "minor" modifications (without formal notice and comment); and

(3) change the monitoring locations from those identified in the Permit to those set forth.

Items 1 and 2 above pertain to the procedures and requirements for making modifications to the Permit, such as changing the monitoring site locations. Under 40 CFR 122.62, any modification to the Permit would require a public comment period.

Item 3 above approves the proposed alternate monitoring sites in the Rock Creek watershed. The EPA agreed with DOH that by rotating the MS4 sites on a yearly basis, while still retaining stations that are representative of the MS4 descriptive land use categories identified in the Permit, the net result would be a more detailed and accurate depiction of the measurement of the storm water outfall loadings in each of the subwatersheds from the various sectors of the District. The EPA will provide further explanation and discussion when the NPDES Permit is reissued.

1.2.6 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 Administration Consulting 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 2004.

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 2003 Implementation Plan submitted together with this Annual Report. The discussion includes an analysis of current activities, and defines related future activities and programs that will be subject to a more detailed cost benefit analysis as part of the feasibility evaluation and/or detailed design.

Implementation of the budgeted activities outlined in the 2003 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 organizational and legal framework, together with the technical evaluation and specific data necessary to ensure progress and track improvement in storm water quality discharged from the MS4. The Implementation Plan may require readjustment after issuance of the new permit to ensure the activities required under the new permit are addressed in an effective, cost-efficient manner.

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 storm water management 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 SWMP. They are:

1. *Direct Measurement, which includes the number of BMPs installed, removal efficiencies, storm water volume reduction, event mean concentration reduction, and 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 SWMP, the District has laid the groundwork for a long-term monitoring program. 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 SWMP 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.

Progress of storm water management activities under the SWMP 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 SWMP 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 SWMP 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 SWMP 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:

- Introduction
- 2.0 Source Identification
- 3.0 MS4 Retrofits
- 4.0 Management Plan for Commercial, Residential, and Federal and District Government Areas
- 5.0 Management Plan for Industrial Facilities
- 6.0 Management Plan for Construction Sites
- 7.0 Flood Control Projects
- 8.0 Control of Pollution From Municipal Landfills and Other Municipal Waste Facilities
- 9.0 Monitor and Control of Pollutants From Hazardous Waste Sites
- 10.0 Pesticides, Herbicides, and Fertilizer Application
- 11.0 Deicing Activities
- 12.0 Snow Removal
- 13.0 Management Plan to Detect and Remove Illicit Discharges
- 14.0 Enforcement Plan
- 15.0 Public Education
- 16.0 Monitoring and Reporting Requirements

- 17.0 Hickey Run Total Maximum Daily Load

Each section begins with a summary of the general Permit requirements and a listing of specific requirements pertinent to the section subject. General requirements are defined as those requirements in the Permit that have no specific date assigned for implementation. Specific requirements are those that have been assigned a specific date for progress reporting, completion, and/or implementation. Following the Permit requirements, a brief summary of permit compliance is provided.

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 SOURCE IDENTIFICATION

2.1 REQUIREMENTS OF THE PERMIT

Part II of the Permit addressed Source Identification.

2.1.1 General Requirements

No general Permit requirements were identified for source identification.

2.1.2 Specific Requirements

The permittee shall compile and submit pertinent information on pollution sources (obtained since submittal of the Part II application for this permit), including significant changes (the definition of significant changes shall be provided in the first Annual Review and is subject to EPA approval) in the identification and mapping of storm sewer system (MS4) outfalls, and changes affecting the District's municipal separate storm sewer system (MS4) due to: land use activities, population estimates, runoff characteristics, major structural controls, landfills, publicly owned lands, and industries. This information shall be submitted in the Annual Reports to EPA and the D.C. Department of Health pursuant to the procedures in Part III C. of this permit. Analysis of data for these pollution sources shall be reported according to Part V of the Storm Water Model.

2.1.3 Permit Compliance

The activities conducted during the past year to develop a GIS database of the MS4 infrastructure and outfalls, together with the evaluation of changes as defined in the Permit, substantively comply with the permit requirements.

2.2 SIGNIFICANT CHANGES

On April 19, 2001, the first Annual Review defined significant changes 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
- Industries

The EPA response dated June 5, 2001 states, "This submittal meets the requirements of the Permit and may be used as a basis for developing a more detailed analysis in the Annual Report…." Therefore, the District has accepted the above stated definition of "significant changes."

2.2.1 Land Use Activities

The District of Columbia 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 City. 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%. While a 5.7% decrease in population over the past 10 years is not deemed to be significant with respect to sources of pollution in storm water, a continued trend in population reduction could result in changes in the future. Population data from the US Census Bureau is provided in Appendix 2-A.

2.2.3 Runoff Characteristics

As noted in Section 2.2.1 above, 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.

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 include:

- A Low Impact Development (LID) pilot project being implemented in conjunction with the reconstruction of 8th Street, SE.
- The BMPs under consideration to treat oil and grease and floatable debris in Hickey Run.

The 8th Street LID pilot project and Hickey Run BMPs are discussed in detail in Sections 4 and 17 of this report, respectively.

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 District of Columbia. According to the fiscal year 2001 listing of acreage by Park, the National Park Service owns 4,327.01 acres within the District. According to the 1997 listing of acreage, there were 4,328.23 acres under the control of the National Park Service. This is a decrease of 1.22 acres over the last five years.

The US Forest Service 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 5 of this report. The database will continue to be used to track changes in industrial activity in the District.

3.0 MS4 RETROFITS

3.1 REQUIREMENTS OF THE PERMIT

Part III.B of the Permit requires the District to conduct an evaluation of the location, size, and number of MS4 retrofits that will be necessary to meet the requirements of the Clean Water Act and EPA regulations.

3.1.1 General Requirements

No general permit requirements were identified for MS4 retrofits.

3.1.2 Specific Requirements

The permittee shall conduct an evaluation of the location, size, and number of MS4 retrofits (pursuant to Chapter 5 of the Part 1 Draft District of Columbia Government Storm Water Management Plan (Exhibit 20)) that will be necessary to meet the requirements of the Clean Water Act and EPA regulations. The evaluation is subject to EPA approval. The evaluation results will be reported in the first Annual Report pursuant to the requirements in the Annual Report paragraph (Part III.C. and D.) of this permit.

3.1.3 Permit Compliance

The discharge monitoring program, MS4 infrastructure mapping and storm water model development are necessary components of the MS4 evaluation to be conducted. The recent approval from Region III to begin discharge monitoring activities in the Rock Creek watershed will provide additional valuable data necessary to continue the progress in the collection of discharge data, system mapping, and model development.

3.2 MS4 RETROFIT ACTIVITY

3.2.1 Evaluation of MS4 Retrofits

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, these facilities are operated and maintained to ensure proper functioning.

The District has three flood control devices which 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. An evaluation of their effectiveness is planned in order to assess the benefits of retrofitting these dams.

A December 1988 WASA study of the District catch basins identified 11 areas in the District with localized flooding. A number of the identified areas are located within the MS4 area. Each of the flood areas entails more than one catch basin. Further investigation is underway to define the effectiveness of retrofits (catch basin replacement, sewer line upgrading, road profiling, grading, etc.) in each location.

The District has established a long-term monitoring and evaluation program of the District sewersheds. DOH is developing a set of monitoring stations (with EPA approval) to monitor discharges in each major watershed in the District. The nine sampling locations reported in the 2002 and 2003 Discharge Monitoring Reports were sites developed along the Anacostia River. In a letter of June 7, 2002, the DOH has proposed six monitoring sites along Rock Creek. A copy of this letter is included in Appendix 1-F. The EPA, March 19, 2003, Amendment No. 2 to the Permit approved the monitoring sites along Rock Creek as part of the District's long-term monitoring strategy. Further discussion is provided in the Responsiveness Summary to Amendment No. 2 included in Appendix 1-G.

DOH WPD has refined and updated the DC automated database system for tracking maintenance inspections at storm water management facilities to include tracking of construction projects for storm water management BMPs. The database system is part of the DOH WPD BMP effectiveness monitoring program. Elements of the program include inlet/outlet sampling and upstream/downstream monitoring at an existing BMP. Monitoring of downstream receiving waters before and after construction of new BMPs is done in special cases. Data from this program will be maintained in database form and made available to DPW, DDOT, WASA, and DOH offices as required to evaluate and improve the efficiencies of BMPs in removing contaminants from storm water runoff.

The updated database system also 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.

WASA is planning to separate the combined sewer in the Lacomb Valley portion of the Anacostia watershed. One design being considered is to separate the sewers, and convert the combined sewer to an MS4 outfall. WASA is investigating appropriate methodology to install a floatable debris control system (trash rack) on the outlet. Construction of the separation is scheduled for FY 2004-6. This area is also under consideration as an LID pilot study area, with multiple LID techniques being considered for construction and monitoring to provide effectiveness data for use throughout the district.

3.2.2 Planned MS4 Retrofits

The MS4 system serving the headwaters of the Hickey Run watershed has been identified as a potential location for MS4 retrofit. A draft Watershed Management Plan has been prepared summarizing MS4 activities in the Hickey Run Watershed, and providing recommendations for a comprehensive evaluation of storm water quality, and a targeted education and enforcement program aimed at improving storm water quality in the watershed. A specific focus of the plan is reducing oil and grease loading to Hickey Run. Currently, a structural BMP is being evaluated for construction at the outfall of the largest of the four outfalls from the MS4 system to Hickey Run. The BMP will be designed to treat oil and grease, and remove floatable material.

Section 17 of this report provides additional details regarding the Hickey Run TMDL, and permit-related activities to reduce pollutant loading from the MS4.

No additional retrofits have been identified during the past year.

4.0 MANAGEMENT PLAN FOR COMMERCIAL, RESIDENTIAL, AND FEDERAL AND DISTRICT GOVERNMENT AREAS

4.1 REQUIREMENTS OF THE PERMIT

Part III.B.1 of the Permit requires the District to implement the November 4, 1998 SWMP, to reduce the discharge of pollutants from Commercial, Federal and District government owned/operated facilities, and residential areas into the District's storm sewer system (MS4).

4.1.1 General Requirements

EPA regulations at 40 CFR 122.26(d)(2)(iv)) and the SWMP shall be implemented (as described in the District's November 4, 1998 SWMP, as modified by the upgraded SWMP) to reduce the discharge of pollutants from commercial, Federal and District government owned/operated facilities, and residential areas into the District's storm sewer system (MS4). The Permittee shall continue current practices of road, street, and highway maintenance as described in the SWMP.

Control for government, commercial, and residential storm water runoff shall consist of a mix of program activities addressing trash, debris and other storm water pollutants, including but not limited to:

- *A shift in focus from just the minimum storm water controls required under local ordinances and guidelines to programs that encourage the use of functional landscape to enhance the aesthetic and habitat value at new parking lots and/or new developments;*
- *Low impact development practices such as reduced road length and width, use of infiltration trenches, porous pavements, grassy swales and filter strips where appropriate;*
- *A coordinated catch basin cleaning and street-sweeping strategy that optimizes reduction of storm water pollutants;*
- *Coordination with solid waste program to include leaf collections;*

- *Preventative maintenance inspections for all existing storm water management facilities;*
- *Development and implementation of a rain leader disconnection program;*
- *Development of a phased approach to storm water public education which includes collecting pet feces and environmentally-friendly fertilizing and landscaping techniques;*
- *Modeling of storm water impacts;*
- *Developing a simple method for measuring the performance of these activities; and*
- *Strengthening the erosion control program for new construction.*

The permittee shall maintain the authority to control all types of discharges into the waters of the District.

4.1.2 Specific Requirements

The permittee shall develop and implement a program to control storm water discharges from Federal and District-government areas to the same extent as that for commercial, residential, and industrial areas. The status of this program shall be reported in each Annual Report/Review required by Part III.C. and D. of this permit. Information shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

4.1.3 Permit Compliance

The District has developed and continues to implement a program to control storm water discharges from Federal and District-government areas. DOH has signed agreements with DPW and the General Services Administration (GSA) which required federal contractors working on buildings or highway improvements to meet the requirements of the District's Erosion and Sediment Control Regulations. DOH continues to cooperate with DPW and GSA in reviewing construction plans with respect to these requirements.

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

The general requirements of the Permit require a mix of programs to meet the requirements of 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.

4.2.1 Functional Landscaping

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 is revising its standard practices for storm water management related to the District's transportation-related construction projects. The recommendations of the BMP report have been used in developing the DDOT standards and in selecting BMPs for use in commercial, residential, or governmental areas and operations throughout the District.

The District is continuing to develop recommendations of BMP effectiveness based on the Howard University Study and is incorporating the recommendations to improve storm water management aspects of street and highway design and construction. The District also encourages developers to incorporate functional landscaping techniques in their design work.

In December 2000 the Department of Health Watershed Protection Division (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, 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 Appendix 4-A.

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.

4.2.2 Low Impact Development Practices

The Mayor's Environmental Council has developed a draft order incorporating LID and "green building" practices as part of the Mayor's program for the District to "serve by example." When issued, this order will encourage LID practices as a cost effective means of addressing storm water management through site design modifications and implementations of BMPs. These practices encourage development in a hydrologically functional manner, consistent with the natural landscape. As such, implementation of LID practices can minimize storm water runoff and reduce storm water pollution.

DOH WPD promotes, encourages, and reviews the use of LID techniques throughout the District. These review activities have included demonstration projects involving Bio-Retention Ponds, Vegetated Bio-Filters, Porous Pavers, and a Green Roof. For instance, a study to identify and complete preliminary designs for LID retrofits appropriate at RFK Stadium and its immediate neighborhoods has just been completed under partnership with the US Army Corps of Engineers. Also, DOH and DC Public Schools have conducted various coordinating meetings to ensure consideration of LID retrofits in future school renovation projects. Additionally, a DOH WPD staff person participated in an LID technical exchange in Germany to obtain more information on LID techniques including the construction of Green Roofs.

As a pilot project, DDOT has incorporated LID principles in the planned reconstruction of a portion of 8th Street SE, between Pennsylvania Avenue and M Street. The construction entails the redesign of the roadway to better facilitate drainage, and increase holding time of storm water runoff in the area. This pilot project will be used to evaluate the effectiveness of LID techniques, within transportation capital projects, to reduce storm water runoff, and improve storm water quality. The construction of the 8th Street SE pilot project began in October 2002 and is scheduled for completion by September 2003.

The 8th Street SE rehabilitation project will extend over several city blocks. The LID pilot practices will be installed in two city blocks of the project. Monitoring devices will be installed in catch basins found in both these two blocks and in a similar city block without LID practices. A comparison of the results from the two blocks will provide an

assessment of the effectiveness of the LID practices installed. Equipment for the monitoring study is scheduled for installation in the summer of 2003.

Monitoring of storm water runoff, reflecting existing conditions and post-construction, with in-place LID techniques, will be conducted to evaluate the effectiveness of the LID. The evaluation of this pilot project, together with the results of the Howard University BMP Study, will be 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 Low Impact Development Center, Inc., a non-profit organization working with DDOT on the LID, has developed ratios of the sand, silt, clay, and mulches used in the soil mixture for the planting beds, piping that will be placed under the beds, depth at which the trees will be planted, etc.

DDOT and DOH are actively investigating other areas of the District for future pilot projects. In this investigation, potential sites are evaluated as per their suitability for testing and monitoring LID projects and assessing runoff from construction projects.

DOH has requested changes to Section 1101.2 of the DC Plumbing Code and Section 708 of the Existing Building Code to provide flexibility in the building code. This flexibility would allow rain leader disconnection for both new developments and projects involving alterations and repairs of existing buildings. The amendments were requested through the DC Building Code Advisory Committee.

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.

4.2.3 Catch Basin Cleaning and Street Sweeping Activities

4.2.3.1 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 operation and 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 are coordinating street sweeping and the cleaning of catch basins through discussions with 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 clean out in each of the District's Wards and in response to public comments. A 2003 schedule of Ward clean out activities is provided in Appendix 4-B. 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 volunteers and personnel can be seen working together to clean up the District's wards. The schedule for these cleanup activities is also provided in Appendix 4-B.

4.2.3.2 Street Sweeping Activities

DDOT has entered into a contract with VMS, Inc., to maintain approximately 75 miles of the District's interstate 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, freeway and major cleaning is performed for the District. Each freeway is mechanically swept a minimum of once every four to six weeks, or more frequently, as need dictates. The DPW Monthly Street and Alley Cleaning Analysis is included as Appendix 4-B.

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

- Mechanical street sweeping is provided by 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 (4900 Bates Road, NE or 3200 Benning Road, NE).

According to the DPW Performance Measures Score Card for FY 2002, a total of 74,490 miles of streets, freeways, and highways were cleaned mechanically, and 16,400 alleys were cleaned manually and mechanically. Street sweeping and alley cleaning work yielded 7,413 tons of collected debris in FY 2002; to accomplish this task, 306 full-time employees were assigned to the task.

In FY 2001, DPW hired 13 new operators for their mechanical street sweeper routes and 22 new alley sweeper operators to increase the frequency of alley sweeping. 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 2003.

As part of Street Sweeping Activities, DPW purchased 300 new litter cans in FY 2002 and has budgeted funds to purchase 300 new litter cans in FY 2003. With these purchases, DPW will have more than 2,000 trashcans placed in strategic areas, including bus stops and high-density commercial areas where pedestrian traffic is heavy. During FY 2002, DPW collected 8,920 tons of trash as a result of this activity.

4.2.3.3 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 connected to the MS4, with the remainder feeding combined sewers. WASA's cleaning program does not differentiate between the two systems and works to keep all catch basins clean, except those cleaned by DDOT's contractor, VMS, Inc., associated with the District's federal roadway system.

The District is divided into eight wards. Crews operate on a predetermined schedule, cleaning basins by ward. The 2003 schedule is provided in Appendix 4-B. WASA Department of Sewer Services had 21 people assigned to the task of catch basin cleaning. WASA primarily uses clam-bucket vehicles to clean the catch basin. 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 20 catch basins each, producing 6,000 tons of trash annually from the catch basin cleaning program. WASA has assigned 10 people, i.e., 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.

4.2.4 Coordination of Leaf Collection

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. DPW leaf vacuum trucks make a minimum of two passes on each District street. 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 Appendix 4-B. 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.

Currently, there are 32 vacuum vehicles involved in leaf collection activities, in addition to 32 dump trucks, 14 vans, 6 packers, 2 roll-offs, 1 loader, and 7 pickup trucks. DPW assigns 55 Motor Vehicle Operators, 136 Sanitation Works, 2 Clerks, 2 Heavy Mobile

Equipment Repairers, 4 Station Foremen, and 1 General Foreman to leaf collection activities during the three-month collection period.

Leaf collection activities for the past year were scheduled from November 5, 2002 through January 12, 2003. The Clean City Initiative report provided by the DPW indicates that 8,983 tons of leaves were collected through the end of 2002. These tonnages represent leaves collected by the vacuum trucks, and do not include bagged leaves, which are collected separately. Details are provided in the DPW Monthly Street and Alley Cleaning Analysis included in Appendix 4-B.

4.2.5 Preventive Maintenance Inspections for Storm Water Management Facilities

WASA Department of Sewer Services continues to conduct inspections 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 the inspection schedule. The Department of Maintenance Services performs corrective maintenance on pumping stations in response to work order requests from the operational staff.

In addition to the catch basin cleaning program, WASA performs preventive maintenance on the storm sewer system. These maintenance activities include responding to reports on blockages or defects, and the clearing of lateral channels, and ensuring that the outlet structures of the MS4 remain clear. According to cost estimates provided by WASA, 1,000 tons of debris are removed each year during these activities. This program utilizes four workers, 1 crane truck, 1 crew cab dump truck, and 1 pickup truck.

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.

DOH WPD has worked to minimize the release of pollutants in storm water runoff to the Anacostia and Potomac Rivers and their tributaries by inspecting 201 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.

The 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 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 increased its inspections and enforcement activities related to preventive maintenance activities. In addition, a technical paper entitled "*Maintenance of Storm Water Best Management Practices (BMPs) in An Ultra Urban Setting: The District of Columbia Program,"* authored by Walter Caldwell, a DOH WPD staff member, has been accepted for presentation at the International Erosion Control Association's 34th Annual Conference to be held in Nevada in February 2003. This paper is included as Appendix 4-E.

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. Currently, a database of all storm water management facilities is being maintained; schedules of inspections are coordinated through this database.

4.2.6 Rain Leader Disconnect Program

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.

Through the District's Building Code Advisory Committee (BCAC), DOH is presently requesting changes to Section 1101.2 of the DC Plumbing Code to eliminate perceived obstacles to the voluntary use of LID Programs. This would encourage 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 Natural Resources Defense Council (NRDC) has drafted the proposed revision which is currently being considered by the Plumbing Subcommittee of BCAC.

DOH has requested (through BCAC) changes to Section 1101.2 of the DC Plumbing Code and Section 708 of the Existing Building Code to provide flexibility in the building code. This flexibility would allow rain leader disconnection for both new developments and projects involving alterations and repairs of existing buildings. DOH WPD has proposed changes 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.

4.2.7 Education of Public on Pet Wastes, Fertilizing, and Landscaping

Section 15.0 of this report contains a complete discussion of educational initiatives taken by WASA and 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 has developed 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 (NPS) 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 (IPM) video.

4.2.8 Mapping and Computer Modeling of Storm Water Impacts

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 4-1 illustrates the MS4 infrastructure and outfall locations. Both the conveyance system and outfall data require field verification and quality assurance/quality control (QA/QC) of the database. 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. Field verification of the MS4 database system will be a phased process with targeted areas (i.e., Hickey Run sewersheds) identified for the first phase of work.

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.

4.2.9 Methods of Measuring the Performance of Activities

No formalized system has been developed to measure the performance of storm water management activities to reduce pollution loading to receiving waters. Significant progress has been made in the development of measurement tools, including physical tools such as the discharge monitoring program, MS4 database system, and runoff model, and legal/administrative tools including passing of legislation, and 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.

4.2.10 Strengthening Erosion Control Programs for New Construction

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 of Columbia projects including road construction and rehabilitation efforts.

During FY 2002, 1,691 project construction plans were reviewed and 1,359 were approved; 5,837 construction site inspections were performed, and 138 enforcement actions were taken for violations of storm water regulations. DOH WPD reviewed 340 storm water management plans and 1,601 erosion and sediment control plans for residential and commercial construction projects.

Additional efforts are being made by DOH to reduce storm water impacts from new construction in the District. DOH WPD has completed the final draft of the revised *District of Columbia Soil Erosion and Sediment Control Standards and Specifications*. A public hearing was scheduled in January 2003 to solicit public comments before the document is ready for distribution. The District's *Storm Water Guidebook* has also been revised and updated. A final draft will be submitted for public hearing in January 2003 before the document is ready for distribution to the general public. The revised documents incorporate new and innovative BMPs.

Also, as part of strengthening the programs, an article entitled "*Implementation of an Effective Control and Storm Water Management Program in Washington, D.C.,"* authored by Collin R. Burrell and Hamid Karimi of DOH WPD was published in the September/October 2002 edition of "*Stormwater – Journal for Surface Water Quality Professionals.*" The article was presented at the 33rd International Erosion Control Annual (IECA) Conference in Orlando, Florida, and subsequently published in the IECA conference proceedings.

4.2.11 Federal Facilities Program

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 2002. 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 has reviewed 36 BMP Storm Water Management Projects for federal facilities in the period covering FY 2000-2002. These projects have included wetlands, oil and grease separators, sand filters, brick pavers, infiltration trenches, bioretention systems and more efficient inlets. To date 13 of the BMPs have been installed and 24 more have been approved for installation. A table of Federal Facility Storm Water Management Projects for FY 2000 through 2002 is presented in Appendix 4-C.

4.2.12 District Facilities Program

DDOT plans to hire two additional engineers to better facilitate MS4 activities on roadway and other infrastructure related projects. In 2002, DDOT assigned these responsibilities to two of their staff engineers. Based on the activities of these two engineers, DDOT plans to further develop a scope of work and eventually hire two new engineers whose responsibility is solely focused on MS4 related activities. DOH will work closely with the DDOT engineers regarding plan review and inspections for roadway and other infrastructure related projects.

4.2.13 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 Appendix 4-D.

During FY 2003, DDOT will begin calculating the costs of work associated with storm water pollution management and control. This information will be used as support information for monies requested in the FY 2004 budget.

4.2.14 Maintenance of Legal Authority to Control Discharges

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 2002, the DOH WPD has

completed the final draft of the revised Standards and Specifications *for Soil Erosion and Sediment Control* for the District of Columbia. In an effort to ensure shareholders' involvement in the revision process, DOH formulated a technical review committee consisting of representatives from the US Department of Agriculture, Natural Resources Conservation Service (NRCS), local building industry associations, and other District agencies who worked with DOH WPD to provide technical review and oversight. A Public Hearing on the document is scheduled for February 2003.

During FY 2003, the District will revise and update its storm water management and soil erosion and sedimentation control regulations for legislative review and approval. Once this project is completed, the District's erosion and sediment control handbook will be updated to provide regulation compliance guidelines to the regulated community.

5.0 MANAGEMENT PLAN FOR INDUSTRIAL FACILITIES

5.1 REQUIREMENTS OF THE PERMIT

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.

5.1.1 General Requirements

The permittee shall implement a program to monitor and control pollutants in storm water discharged to the District's MS4 from Industrial Facilities, pursuant to the requirements in 40 CFR 122.26(d)(2)(iv)(C). These facilities shall include, but are not limited to:

- *Private Solid Waste Transfer Stations*
- *Hazardous Waste Treatment, Disposal, and/or Recovery Plants*
- *Industrial Facilities subject to SARA or EPCRA Title III*
- *Industrial Facilities with NPDES Permits*
- *Industrial facilities with a discharge to the MS4*

The permittee shall continue to maintain and update the industrial facilities database. The permittee shall continue to perform or provide on-site assistance/inspections and outreach focused on the development of storm water pollution prevention plans and NPDES permit compliance.

The wet weather screening described in Part IV. C. of this permit and the November 4, 1998 SWMP includes collecting data on the discharges from industrial sites. This information shall be used by the Permittee in identifying problem industrial categories to better target outreach.

The permittee shall prohibit illicit discharges, control spills, and prohibit dumping.

5.1.2 Specific Requirements

The permittee shall develop and implement procedures to govern the investigation of facilities suspected of contributing pollutants to the MS4, including a review, if applicable, of monitoring data collected by the facility pursuant to its NPDES permit. These procedures shall be submitted as part of the first and second Annual Reports required by Part III.D of this permit.

A program to prevent, contain, and respond to spills that may discharge to the MS4 shall be developed, and a report on this development submitted in the first Annual Report. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity).

Progress in developing and carrying out industrial related programs shall be reported in each Annual Report/Review required by Part III.C. and D. of this permit. An explanation shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

5.1.3 Permit Compliance

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 a program to investigate facilities suspected of contributing pollutants to the MS4. Formalized procedures incorporating and refining the existing components of the program were developed and included in the updated SWMP submitted in October 2002.

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.

5.2 MANAGEMENT PLAN FOR INDUSTRIAL FACILITIES ACTIVITIES

Activities conducted in the past year related to implementing the management plan for industrial facilities are detailed in the following sections.

5.2.1 Industrial Facilities Database

The DOH WQD maintains a database of industrial facilities with standard and storm water NPDES permits. A listing of facilities in the District that are registered with federal and state regulators and generate, store, or have released hazardous materials has been prepared. In FY 2002 the District authorized funding for an environmental engineer allocating 15% of their time to the maintenance and updating of the database. During FY 2003 and 2004, the District will continue to refine and improve the functionality of the existing database, enabling sorting by individual storm sewersheds, possible sources of pollutants, or type of facility.

The database includes a listing of over 2000 industrial facilities in the District that are registered with federal and state regulators and generate, store, or have released hazardous materials. This list has been prepared as part of the NPDES permit application. Of these, 16 facilities have general or storm water NPDES permits. The database will establish a baseline of information for facilities and will be associated with the monitoring effort being undertaken for follow-ups and updating. The industrial facilities database discussed above will be updated to include facilities that have closed and been released from Federal or District regulation. The framework of the database will also be used for other facilities such as federal and District government properties.

5.2.1.1 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 and 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 its responsibility to manage pollution from storm water runoff at municipal waste facilities within the District.

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

The District contains 2 Resource Conservation and Recovery Act (RCRA) Treatment Storage and Disposal Facilities (TSDFs), 25 RCRA Large Quantity Generators (LQGs), and 881 RCRA Small Quantity Generators (SQGs). RCRA regulations outline handling, storage, and spill control requirements at those facilities.

Inspection and monitoring of hazardous waste facilities is the responsibility of DOH Hazardous Waste Division (HWD). HWD 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.

5.2.1.3 Industrial Facilities Subject to SARA or EPCRA Title III

The list of industrial facilities registered with federal and state regulators includes 28 sites within the District that are subject to regulation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These facilities will be evaluated as to their current status and included in the industrial database.

5.2.1.4 Industrial Facilities With NPDES Permits

The permit application included a list of 16 facilities in the District of Columbia with NPDES permits. The listing of NPDES permitted facilities is included in Appendix 5-A. This list was reviewed, updated, and incorporated into the industrial facilities database as part of the upgraded SWMP submitted in October 2002.

5.2.2 Industrial Facilities With a Discharge to the MS4

Four industrial facilities with discharges to the MS4 are included in the list of 16 permitted facilities noted above. The remaining facilities discharge to the CSO system. This list was reviewed, updated, and incorporated into the industrial facilities database as part of the upgraded SWMP submitted in October 2002.

5.2.3 Monitoring and Inspections

DOH has developed formal procedures and put into place steps to effectively control the impact and extent of hazardous waste on the MS4. These procedures are presented in three documents (as presented in the upgraded SWMP).

- "*Hazardous Waste Management*" – describes the procedures for proper identification, handling and reporting of hazardous waste 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.

The legal basis for conducting inspections related to storm water management are outlined in the District of Columbia Municipal Regulations (DCMR), Chapter 5. This chapter is provided as Appendix 5-B. The regulations require that facilities receiving storm water runoff must install a BMP 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 water 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.

The program for the detection and elimination of illicit discharges is discussed in Section 13 of this report.

Facilities to be investigated and monitored include private solid waste transfer stations, facilities subject to the Superfund Amendments and Reauthorization Act (SARA) Title III, and RCRA TSDF.

5.2.4 Wet-Weather Screening Program

After approval by EPA of the nine alternative sampling locations on January 17, 2001, WQD authorized the initiation of the storm water discharge sampling program. Complete results of the sample analysis results for the past year are included in the 2003 Discharge Monitoring Report submitted together with this report. Section 16 of this report provides a summary of the Discharge Monitoring Report. 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. The program for the detection and elimination of illicit discharges is discussed in Section 13 of this report.

Screening procedures were developed using the November 4, 1998 SWMP as guidance and may be modified based on experience gained during field screening activities. These screening criteria need not conform to the protocol at 40 CFR 122.26(d)(1)(iv)(D). Based on experience gained during field screening activities, a protocol has been developed and is included as part of the Quality Assurance Project Plan (QAPP) found in Appendix 16-C.

A laboratory will be contracted to analyze water samples. The selected laboratory will process DOH WQD samples for both wet and dry weather screenings.

5.2.5 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. The pollution response plan will implement procedures for informing personnel at all levels as to responsibilities for selecting appropriate BMPs for emergency situations. Examples of BMPs range from simple housekeeping, material handling practices, preventive maintenance, and diversion practices, to more advanced structural controls such as detention and retention ponds and infiltration devices. The selections of the most effective BMPs will be based on site-specific consideration such as: facility size, climate, geographic locations, hydrogeology and environmental setting of each facility, volume and type of discharge generated, and number of outfalls. Each facility will be unique in that the source, type, and volume of contaminated storm water discharges will differ. In addition, the WPCCP will address the fate and transport of pollutants that vary based on the chemical composition of the discharges. The WPCCP specifies the type and extent of the records needed to address spills, monitoring, and inspection and maintenance activities. The WPCCP provides details concerning various aspects of the response including a list of materials (detection devices) and personnel with the knowledge and skills to respond to specific chemical spills discharged in storm water sewer system. The WPCCP also presents a procedure to test and clean up the contaminated site.

The process of reviewing and updating the Water Pollution Control Contingency Plan is underway. The Plan will also develop a procedure that will address spill containment such as end-of-pipe. End-of-pipe treatment is effective for the control of process water when the type of pollutant and volume of water to be treated is known. The Table of Contents from the Water Pollution Control Contingency Plan is included as Appendix 5-C of this report.

District agencies currently rely on informal spill response training of personnel and the implementation of best practices to prevent spills and accidental discharges. The pollution prevention plan must describe a program for informing personnel at all levels of responsibility of the component and goal of the storm water pollution plan. The training will address topics such as good housekeeping, material management, and spill response procedures, and provide a schedule for conducting training.

DDOT, DPW, and WASA have existing in-house spill response training for their employees. For example, DPW training materials direct that for spills less than 25 gallons, staff are to notify the Fuels Services Supervisor who will take action to clean up the spill and establish any additional monitoring of the site and/or groundwater. Spills larger than 25 gallons are directed to other District agencies that are fully equipped to handle large spills. In FYs 2003 and 2004, DPW will request funding from the Storm Water Enterprise Fund to purchase spill response kits and provide additional training to personnel.

6.0 MANAGEMENT PLAN FOR CONSTRUCTION SITES

6.1 REQUIREMENTS OF THE PERMIT

Part III.B.3 of the Permit is titled Management Plan for Construction Sites. General and specific requirements of this section are detailed below.

6.1.1 General Requirements

Part III.B.3 of the Permit states that the Permittee shall continue:

- *implementation of the component of the ongoing Storm Water Management Plan (SWMP) that addresses the discharge of pollutants from construction sites.*

- *the review and approval process of the sediment and erosion control plans under this program.*

- *with regular construction site inspections. When a violation of local erosion and sediment control ordinances occurs, the permittee shall follow existing enforcement procedures and practices.*

- *with educational measures for construction site operators that consist, at a minimum, of providing guidance manuals and technical publications.*

Additionally, the Permit includes that,

> *Public streets, roads, and highways shall be operated and maintained in a manner to reduce the discharge of pollutants. Standard road repair practices shall include limiting the amount of soil disturbance to the immediate area under repair. Storm water conveyances which are denuded should be resodded or reseeded and mulched for rapid revegetation, and these areas should have effective erosion control until stabilized. The program shall establish procedures that address spill prevention, material management practices, good housekeeping measures at all equipment and maintenance shops that support maintenance activities.*

6.1.2 Specific Requirements

Specific permit requirements to be addressed in this report include:

- *An evaluation shall be made and reported in the first Annual Report/Review to determine if the existing practice meets the requirements given in 40 CFR 122.26(d)(2)(iv)(A) and (D).*

- *The permittee shall submit its inspection and enforcement procedures to EPA in the first Annual Report.*

- *Progress in developing and carrying out the above construction related programs shall be reported in each Annual Report/Review required by Part III.C. and D. of this permit. An explanation shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act. This explanation will also show how these programs will lead to compliance with the above paragraphs in this part of the Permit (Part III.B.3.).*

6.1.3 Permit Compliance

6.1.3.1 General Requirements

The Permittee has complied with the general requirements of the Permit outlined above. Details of activities related to management of storm water discharges from construction sites during the past year are provided in Section 6.2 below.

6.1.3.2 Specific Requirements

Three specific requirements are identified in the Permit for management of storm water discharges from construction sites. Specifically:

- The existing practice generally meets the requirements given in 40 CFR 122.26(d)(2)(iv)(A) and (D). The components of the management program have been developed, and are in use. The individual components were formalized into a management program as part of the revised SWMP submitted in October 2002.

- The inspection and enforcement forms were presented in the 2001 Annual Review. The specifics of the District's inspection and enforcement activities are provided in Section 6.2 below.

- DOH WPD 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 WPD has increased its 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 final draft of 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. A public hearing is scheduled in January 2003 to solicit public comments before the documents will be ready for distribution to the general public.

6.2 MANAGEMENT OF CONSTRUCTION SITE ACTIVITIES

6.2.1 Review and Approval Process

Existing permit programs are continuously evaluated to assess their effectiveness. Better quality controls have been implemented to ensure that filed jobs are sent in a timely manner to the DOH WPD for detailed review, while minor projects are reviewed at the "One-Stop Permitting and Business Center."

Technical review staff are continuously provided training to improve their efficiency in plan review and the provision of technical assistance to developers and contractors. DOH WPD technical review staff coordinates its review and approval activities with DCRA and DOH WPD's enforcement staff to ensure correction of any deficiencies in the permit process when they are encountered.

6.2.2 Inspection and Enforcement Procedures

Inspection procedures are outlined in the DCMR Water Quality and Pollution Regulations and the Nonpoint Source Plan for the District. The Nonpoint Source Management Plan is provided as Appendix 6-A. The legal basis for conducting

inspections related to storm water management is outlined in the District of Columbia Municipal Regulations (DCMR), Chapter 5. The regulations require that facilities receiving 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 water 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.

Enforcement activities and rulings regarding violations of the erosion and sediment control and storm water management regulations continued as DOH WPD conducted 5,837 inspections at construction sites and issued 138 enforcement actions that were violations of DC storm water regulations. The DOH WPD database of the Office of Adjudication and Hearings docket as of September 23, 2002 is provided in Appendix 6-B. This docket shows there were 237 cases which are considered closed, 22 cases listed as being in final default, 53 pending a decision, 28 have had fines ordered, 17 are still open, and one is being appealed.

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 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 201 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.

6.2.3 Site Inspections and Loading Estimates

DOH is focusing its efforts in calculating loading estimates on the Anacosita Watershed, as this multi-jurisdictional watershed is of primary concern to the District and surrounding governments. Loading estimates are being prepared for commercial, residential, and road development land uses. After completion of loading estimates in the

Anacostia Watershed, effort will be focused on estimating loading for other watersheds in the District.

6.2.4 Educational Measures

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;
- conduct workshops on low impact development, provide presentations at trade shows; 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. An article entitled "Implementation of an Effective Erosion Control and Storm Water Management Enforcement Program in Washington, DC," authored by Collin R. Burrel and Hamid Karimi of DOH WPD, was published in the September/October 2002 edition of "Stormwater – the Journal for Surface Water Quality Professionals." A copy of the article in included in Appendix 6-C. The article was presented at the 33rd International Erosion Control Association (IECA) Annual Conference in Orlando, Florida, and subsequently published in the IECA conference proceedings.

6.2.5 Public Roads and Traffic Pollution Strategies

DDOT continues to maintain streets and roads in the District through the use of its own personnel and equipment, and through private contractors. A copy of a typical RFP including requirements for storm water management is provided in Appendix 4-D.

In FY 2003, DDOT will begin to collect data on the costs of storm water management and pollution control for road maintenance projects in the District. This data will help to

provide improved costing data for analysis of storm water management options for road construction and maintenance.

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.

6.2.6 Clean Air Act Compliance

DDOT and DPW have instituted programs to reduce air pollution in the District of Columbia. Reductions in particulate emissions from vehicles result in a direct reduction in deposited pollutants that are flushed to receiving waters by storm water runoff. In FY 2002, DDOT hired a Bicycle Coordinator to encourage the use of bicycles for people who work and commute in the District. The Bicycle Coordinator is working to update the Bicycle Master Plan by March 2004 and construct bicycle trails along various roadways and Watt's Branch and Rock Creek. Other efforts include the redesign of catch basin grates to enhance bicycle safety. An increase in the use of bicycles in the District can help reduce the amount of air pollution from commuter vehicles.

DDOT is working with the Washington Metropolitan Area Transit Authority (WMATA) to increase the amount of vehicles in the District that use alternative fuels. In FY 2002 WMATA purchased 164 CNG buses and has provided funding to WMATA to construct a natural gas fueling station. An additional $2.4 million will be transmitted to WMATA in FY 2003 for CNG bus purchase. The use of CNG buses will decrease the amount of deposited pollution in the District.

In addition, DPW has elected to purchase 17 CNG sedan vehicles in FY 2002 and 20 vehicles in FY 2003, with a goal of 75% of the DPW fleet being powered by CNG. Currently, of the 165 alternative fueled vehicles in the fleet, 84 are natural gas. The use of CNG vehicles will decrease the amount of deposited pollution in the District.

In FY 2001 and 2002, DPW increased the frequency of street sweeping. This will remove pollutants related to roads' vehicular traffic and prevent their impacts to the MS4 system.

6.2.7 Notifications to Historic Preservation Officer and U.S. Fish and Wildlife Service

Presently District Agencies are notifying both the Historic Preservation Officer (HPO) and the US Fish and Wildlife Service of proposed new construction activities and activities that have the potential to impact historically significant structures, or adversely impact endangered and threatened species. The Environmental Impact Screening Form (EISF) procedures provide the HPO the opportunity to be informed about any major new construction, demolition or land disturbing activity through the EISF review process. Documentation is made of written correspondence with the HPO and US Fish and Wildlife Service. Part of this documentation includes a database search by the HPO concerning any impacts on historical property and a database search by the US Fish and Wildlife Service concerning any environmental impacts due to the activity. These procedures were included in the updated SWMP submitted in October 2002. No further modification of the notification to the HPO and US Fish and Wildlife process is envisioned at this time.

The Discharge Monitoring Reports are submitted to the US Fish and Wildlife Service and the National Marine Fisheries Service to aid in their assessment of any endangered or threatened species in the District.

7.0 FLOOD CONTROL PROJECTS

7.1 REQUIREMENTS OF THE PERMIT

7.1.1 General Requirements

Potential impacts on the water quality and the ability of the receiving water to support beneficial uses shall be assessed for all flood management projects. The feasibility of retrofitting existing flood control devices to provide additional pollutant removal from storm water shall be evaluated. Critical unmapped areas shall be prioritized by the District for mapping with an emphasis on developed and developing acreage.

7.1.2 Specific Requirements

The above assessment, mapping program, and feasibility studies shall be reported in the Annual Reports/Reviews (Part III.C. and D.). The flood control measures necessary to meet the requirements of the Clean Water Act shall be submitted in the Upgraded SWMP (Part III.E.).

Reports of mapping of critical unmapped areas shall be summarized in the Annual Report/Reviews. An explanation shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

7.1.3 Permit Compliance

7.1.3.1 General Requirements

In complying with the Clean Water Act, the District of Columbia operates and maintains storm water and flood management facilities including BMPs, storm water inlets and conveyance system, pump stations, canals, flood gates, and weirs. The maintenance of these systems and implementation of the flood hazard rules have combined to meet the requirements of the MS4 Permit relating to flood control projects.

7.1.3.2 Specific Requirements

The feasibility of retrofitting existing flood control devices to provide additional pollutant removal from storm water has been evaluated, and no retrofitting is envisioned. The District will continue to evaluate and maintain the existing flood control infrastructure to

ensure the maximum flood control capabilities from the existing system, and identify any future retrofits that would be appropriate.

7.2 FLOOD CONTROL ACTIVITIES

7.2.1 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 discharges (outfalls) 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.

7.2.2 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. Three flood control devices have been examined in the field. These are the flood control gates at the Georgetown Waterfront Development, and two trapezoidal weirs at Watts Branch. These structures were constructed primarily to control repetitive flooding to downstream properties. These are permanent structures and there are no future plans to retrofit them.

7.2.3 Flood Plain Mapping

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.

7.2.4 Flood Plain Development Procedures and Reviews

The MS4 Permit requirements for flood plain development procedures and review are met through the promulgation of the District of Columbia Municipal Regulations,

Title 20 (Chapter 31- Flood Hazard Rules), 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.

7.2.5 Impervious Surfaces Evaluation

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 District of Columbia Municipal Regulation, Title 20. DOH WPD has initiated a program to collect data to evaluate impervious surfaces for both proposed and existing development in floodplains.

8.0 CONTROL OF POLLUTION FROM MUNICIPAL LANDFILLS AND OTHER MUNICIPAL WASTE FACILITIES

8.1 REQUIREMENTS OF THE PERMIT

Part III.B.5 of the Permit pertains to the Control of Pollution from Municipal Landfills and Other Municipal Waste Facilities. General and specific requirements of this section are detailed below.

8.1.1 General Requirements

The Permit requires that a municipal landfill and waste facilities plan be implemented in not more than three years (2003).

8.1.2 Specific Requirements

Four specific requirements are included in this section of the Permit for inclusion in this Annual Report:

- *The permittee shall develop and implement a program to identify measures to monitor and reduce pollutants in storm water discharges from facilities that handle municipal waste, including sewage sludge, and report the results of this activity in the first Annual Report.*

- *As part of this program, the permittee shall reduce pollutants in the storm water discharges from District-operated or owned solid waste transfer stations, maintenance and storage yards for waste transportation fleets and equipment, publicly owned treatment works, and sludge application and/or disposal sites which are not covered by an NPDES permit, and report the results of this effort in each Annual Report. In these reports, the Permittee shall indicate the additional work needed to meet the requirements of the Clean Water Act.*

- *The initial phase of the program shall contain procedures to evaluate, inspect, and monitor these sites. Based on the evaluations, inspections, and monitoring performed, priorities and procedures for implementing control*

measures for pollutant reduction at sites within the District's MS4 shall be developed. The goal of this investigative portion is to actively identify areas within these sites with poorer quality discharges during storm events, so that those areas will be given priority in implementing control measures. The initial phase monitoring, control implementation, and priority setting will be reported in the first Annual Report/Review.

- *An explanation shall be provided in the Annual Report on how the Control Plan meets the requirements of the Clean Water Act.*

8.1.3 Permit Compliance

DPW is currently utilizing its municipal waste facilities program to monitor and reduce pollutants in storm water discharges as it refurbishes the two existing transfer stations. The activities for the past year relating to the reduction of pollutants in storm water from municipal waste facilities are detailed in Section 8.2 of this report.

8.2 MUNICIPAL LANDFILLS AND OTHER MUNICIPAL WASTE FACILITIES POLLUTION CONTROL ACTIVITIES

8.2.1 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 (NPS) 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 NPS 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 Act requires the recycling of certain wastes, thereby materially reducing the activities at waste handling facilities, further reducing resulting storm water pollution.

In FY 2002, The District agencies collected an estimated 183,000 tons of solid waste plus another 20,400 tons of recyclables. The residential diversion rate in FY 2002 was 11.1%.

In FY 2002, the amount of privately collected and imported waste to the District was 782,200 tons of solid waste, with approximately 416,000 tons of that total from multi-family, commercial and institutional properties; plus an additional 23,300 tons of recyclables. The total volume of waste managed by the District, combining private/commercial and District collections, was 1,009,000 tons. A diagram presenting the waste managed and generated in the District of Columbia in FY 2002 is presented as Appendix 8-A.

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). Under contract with a private firm, the waste is disposed of at the Fairfax County Energy Resource Recovery Facility in Fairfax County, Virginia.

The District has completed refurbishment of the municipal solid waste transfer stations at Fort Totten and Benning Road. The refurbishment included improvements in the paving and drainage systems at both sites. 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.

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

The District's government has established a solid waste facility permitting process for private solid waste transfer stations, which includes performance standards for operators of transfer stations.

8.2.2 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.

9.0 MONITOR AND CONTROL OF POLLUTANTS FROM HAZARDOUS WASTE SITES

9.1 REQUIREMENTS OF THE PERMIT

Part III.B.6 of the Permit pertains to the Monitoring and Control of Pollutants from Hazardous Waste Sites. General and specific requirements of this section are detailed below.

9.1.1 General Requirements

The permittee shall complete an identification of industrial and high risk runoff facilities and develop procedures to map and record details of the facilities. Procedures to identify, map, and record the high risk facilities shall be completed by the end of this permit term (April 19, 2003).

The permittee shall prohibit hazardous waste discharge and has the authority under D.C. Code Section 6-701 and 6-711, which specify that all such discharges shall be by permit only.

9.1.2 Specific Requirements

Two specific requirements are listed in this section of the Permit for inclusion in this Annual Report:

- *The permittee shall establish procedures that provide for monitoring and controlling pollutants in storm water discharges to the MS4 from: hazardous waste recovery, treatment, storage, and disposal facilities; facilities subject to Section 313 of the Emergency Planning and Right-to-Know Act; and any other industrial facility that either the Permittee or the Regional Administrator determines is contributing a substantial pollutant loading to the MS4. This work shall be reported in each Annual Report/Review. Written procedures shall be incorporated in the Upgraded SWMP as described in Part III.F.*

- *The permittee shall develop procedures to govern the investigation of the identified facilities suspected of contributing pollutants to the MS4, including*

a review, if applicable, of monitoring data collected by the facility pursuant to its NPDES permit. Procedures governing the investigation of identified facilities and the method, schedule, and progress in implementing those procedures shall be submitted as part of the Annual Reports/Reviews. An explanation shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act. The hazardous waste plan, which is a compilation of all procedures required to be developed in this section, shall be implemented no later than three years.

9.1.3 Permit Compliance

The two primary components of developing the hazardous waste plan are identification and mapping of facilities, and monitoring of storm water discharge to identify facilities that are contributing a substantial pollutant loading to the MS4. Section 9.2 below describes these activities.

The Implementation Plan outlines the schedule for formalizing the existing activities and additional components into a comprehensive hazardous waste plan to be implemented by April 2003.

9.2 MONITORING AND CONTROL OF POLLUTANTS FROM HAZARDOUS WASTE SITES ACTIVITIES

9.2.1 Monitoring of Pollutants From Hazardous Waste Sites

DOH has developed formal procedures and put into place steps to effectively control the impact and extent of hazardous waste on the MS4. These procedures are presented in three documents (as presented in the upgraded SWMP).

- "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 initiated the discharge monitoring program in January 2001. Samples collected in both dry weather and wet weather conditions are analyzed for a full suite of hazardous components. These data will provide screening for 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 illicit connections may identify hazardous waste facilities with illicit connections.

9.2.2 Industrial Facilities Database

A database has been prepared that includes facilities in the District that are registered with federal and state regulators and generate, store, or have released hazardous materials. The database will establish baseline information for Federal and District facilities and will be associated with the monitoring effort being undertaken for follow-ups and updating.

As noted in Section 5.0, the following facilities located in the District are included:

- **Hazardous Waste Treatment, Disposal, and/or Recovery Plants -** The District contains 2 RCRA TSDFs, 25 RCRA Large Quantity Generators (LQGs), and 881 RCRA Small Quantity Generators (SQGs).

- **Industrial Facilities Subject to CERCLA or SARA Title III (EPCRA) -** The Industrial Facility Database includes 28 sites within the District that are subject to regulation under CERCLA. Two facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313.

9.3 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 referred to as the National Pollutant Discharge Elimination System (NPDES). 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.

10.0 PESTICIDES, HERBICIDES, AND FERTILIZER APPLICATION

10.1 REQUIREMENTS OF THE PERMIT

Part III.B.7 of the Permit outlines the requirements for pesticide, herbicide, and fertilizer applications. General and specific requirements of this section are detailed below.

10.1.1 General Requirements

No general requirements for pesticide, herbicide, and fertilizer applications were identified in the Permit.

10.1.2 Specific Requirements

Two specific requirements are listed in this section of the Permit for inclusion in this Annual Report:

- *The permittee shall continue to control the application of pesticides, fertilizers, and the use of other toxic substances according to current procedures and practices described in the SWMP and regulations. Such controls shall reduce the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied by employees or contractors, to public right of ways, parks, and other District property. The permittee shall implement programs to encourage the reduction of the discharge of pollutants related to the application and distribution of pesticides, herbicides, and fertilizers, pursuant to the D.C. SWMP as defined in Part X. of this permit. A report on the implementation of the above application procedures, a history of the improvements in the control of these materials, and an explanation on how these procedures will meet the requirements of the Clean Water Act shall be included in the Annual Report/Reviews.*

- *A screening characterization shall be completed to determine the sources of pesticides, herbicides, and fertilizers that contaminate the storm water runoff. This screening characterization shall be part of the outfall monitoring plan and performed according to that plan's schedule identified in Table 1. Levels of storm water pollution from this runoff at locations within the District shall be used to develop a priority system for control of these pollutants. The plan*

for reducing these pollutants shall be developed, implemented, and reported in each Annual Review.

10.1.3 Permit Compliance

Efforts to control pesticide, herbicide, and fertilizer applications are integrated into the public education and the discharge monitoring programs. Plans for the control of pesticide, herbicide, and fertilizer have been developed. Details of the Pesticide Management Program are provided in Section 10.2 below.

The Implementation Plan details the schedule for the continued development of plans and procedures to control pesticide, herbicide, and fertilizer runoff, and meet the requirements of the Clean Water Act.

10.2 PESTICIDE, HERBICIDE, AND FERTILIZER APPLICATION ACTIVITIES

10.2.1 Control Program on District Property

DOH continues to implement the District's Pesticide Management Program. 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.

10.2.2 Control Program on Private Property

As part of its nonpoint source education and outreach efforts, DOH WPD continues to provide educational programs to private property owners as part of its voluntary nutrient management and an "*Integrated Pest Management*" program. 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 Appendix 10-A. In 2002, DOH WPD distributed information to 365 teacher workshop participants and provided information at the Greater Washington Urban Water Festival, the Lily Festival at Kenilworth Gardens,

and to the Chesapeake Bay Executive Council. The Division has an IPM video that it distributes along with supporting brochures.

10.3 IMPLEMENTATION REPORT

The public information program has been fully implemented; District residents are currently informed on the proper use of pesticides, herbicides, and fertilizers. Additionally, DOH personnel regularly conduct public information sessions at various public fairs and festivals. In 2002, DOH WPD distributed information at the Greater Washington Urban Water Festival and the Lily Festival at Kenilworth Gardens. See Section 15.0 on Public Education.

10.4 SOURCE CHARACTERIZATION SCREENING

DOH currently performs outfall monitoring for pesticides. In FY 2002, 19 sample sets were collected, of which 18 were wet-weather sampling events, and one was a dry-weather sampling event. Details of sample set activities are included in Section 16.0 of this report. Sampling for pesticides has been included in the sampling events, and pesticides have been detected in the samples collected from the outfalls. See Section 16 regarding the monitoring of the storm water outfalls.

11.0 DEICING ACTIVITITES

11.1 REQUIREMENTS OF THE PERMIT

Section III.B.8 of the Permit discusses Deicing Activities, and directs the Permittee to evaluate the use, application and removal of chemical deicers, salt, sand, and/or sand/deicer mixtures in an effort to minimize the impact of these materials on water quality.

11.1.1 General Requirements

No general requirements for deicing activities were identified in the Permit.

11.1.2 Specific Requirements

The permittee shall evaluate the use, application and removal of chemical deicers, salt, sand, and/or sand/deicer mixtures in an effort to minimize the impact of these materials on water quality. Techniques available for reducing pollution from deicing salts in snowmelt runoff and runoff from salt storage facilities shall be investigated and implemented. The preliminary results of this evaluation shall be reported in the first Annual Review. A final report on deicing shall be made in the first Annual Report. This evaluation shall be made a part of an overall investigation of ways to meet the requirements of the Clean Water Act. The compliance schedule for implementing the results of the deicing study shall be submitted to EPA before the expiration date of this permit for EPA approval. The deicing procedure shall be incorporated in the Upgraded SWMP. The approved deicing procedures shall be implemented within three years of the issuance of this permit to meet the requirements of the Clean Water Act.

11.1.3 Permit Compliance

The District has completed a comparison of deicing products, studies of alternative chemicals and deicing techniques. The District has evaluated the results of the comparison study and uses the corn-based snow and ice melting product IceBan® as a pre-treatment on highways and bridges.

The Implementation Plan outlines the revised schedule for implementing modifications to the deicing program based on the results of the deicing study.

11.2 DEICER EVALUATION

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. The comparison of deicing products is included in Appendix 11-A. 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.

11.3 APPLICATION OF DEICER MATERIALS

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.

11.4 DEICER MATERIALS STORAGE FACILITIES

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

12.0 SNOW REMOVAL

12.1 REQUIREMENTS OF THE PERMIT

Part III.B.9 requires the Permittee to establish a program and operating plan to ensure excessive quantities of snow and ice control materials do not enter the District's water bodies.

12.1.1 General Requirements

No general requirements for snow removal were identified in the Permit.

12.1.2 Specific Requirements

The permittee shall establish a program and operating plan to ensure excessive quantities of snow and ice control materials do not enter the District's waterbodies. Progress in implementing the program and plan shall be reported in each Annual Report. The District shall avoid snow dumping in areas adjacent to water bodies, wetlands, and areas near public or private drinking water wells.

An alternate plan for snow removal may be developed by the District. If such a plan is approved by EPA in writing, it will become a part of this permit for the remainder of the term of this permit after the approval is granted. The snow removal plan shall be implemented in three years (April 19, 2003).

12.1.3 Permit Compliance

The DDOT Winter Storm Management Plan matrix submitted as part of the upgraded SWMP indicates that snow is not dumped near or into waterways during snow emergencies or in advance of major events except under the specific direction of federal authorities. 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 unless necessitated by snow emergencies.

At this time no alternate snow removal plan is envisioned. The District does not have alternate snow stockpile areas identified but, if required, would use District parkland or Federal lands (with Federal Agency approval) in upland areas, away from streams or rivers.

12.2 SNOW AND DEICER CONTROL PROGRAM

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 11.0 "Deicing Activities."

DDOT regularly prepares a Performance Measures Report that includes targets and achievements for a number of performance measures. In both the 2000-2001 and 2001-2002 snow seasons, the snow removal goal of having 80 percent of the main roads passable within 12 hours of a 4- to 8-inch snowstorm was achieved. A goal of 85 percent was established for the 2002-2003 snow season. Snowfall to date (December 31, 2002) in the 2002-2003 snow season has been just slightly above normal with no excessive snow falls. DDOT Performance Measures were not completed for the 2001-2002 season since no measurable snowfall fell during that period.

The DDOT Winter Storm Plan included in the upgraded SWMP is included in Appendix 12-A of this report.

12.3 ALTERNATE SNOW REMOVAL PLAN

The District does not have alternative snow stockpile areas identified but, if required, would use District parkland or Federal lands (with Federal Agency approval) in upland areas, away from streams or rivers. Additionally, the District's new salt storage facilities will include storm water control features to reduce pollution in adjacent waters. Both new facilities include berms to control water runoff from salt storage and loading areas. The runoff is directed to several inlets that lead to a retention facility where pollutants settle out before the storm water is released to the MS4.

The existing NPDES Permit allows the District to develop an alternate snow removal plan and submit it to the EPA for approval prior to its implementation. The existing snow removal plan is regularly reviewed and updated to provide optimum snow removal to the District. Any alternate plans and suggestions proposed by the DDOT staff are considered in this review. In this manner, the current snow removal plan reflects the most efficient use of the equipment and manpower of the DDOT.

13.0 MANAGEMENT PLAN TO DETECT AND REMOVE ILLICIT DISCHARGES

13.1 REQUIREMENTS OF THE PERMIT

Part III.B.10 of the Permit pertains to the Management Plan to Detect and Remove Illicit Discharges. General and specific requirements of this section are detailed below.

13.1.1 General Requirements

The permittee shall implement a program to prevent illicit discharges, as defined at 40 CFR 122.26(b)(2). However, those discharges listed at 40 CFR 122.26(d)(2)(iv)(B)(1) are to be addressed where such discharges are identified by the Permittee as sources of pollutants to the waters of the United States.

The permittee shall ensure the implementation of a program to further reduce the discharge of floatables (e.g. litter and other human-generated solid refuse). The floatables program shall include source controls and, where necessary, structural controls.

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 Permittee shall ensure the implementation of programs to collect used motor vehicle fluids (at a minimum oil and anti-freeze) for recycle, reuse, and proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycle, reuse, or proper disposal. Such programs shall be readily available to all private residents and shall be publicized and promoted on a regular basis, pursuant to the Public Education plan in this permit at Part III.C.12.

Detection and elimination of illicit discharges shall include, but not be limited to, the following mix of strategies:

- *Development of an illicit connection detection and enforcement program to perform dry weather flow inspections in target areas;*
- *Visual inspections of targeted areas; and*

- *Issuance of fines, tracking and reporting illicit discharges, and reporting progress on stopping targeted illicit discharges, and in appropriate cases, chemical testing immediately after discovery of an illicit discharge.*

13.1.2 Specific Requirements

The permittee shall implement an ongoing program to detect illicit discharges, pursuant to the SWMP as defined in Part X. and Part IV.C. of this permit, and prevent improper disposal into the storm sewer system, pursuant to 40 CFR 122.26(d)(2)(iv) (B)(1). The accomplishments of this program shall be reported in the Annual Report/Reviews.

The District shall develop an enforcement plan for illicit discharges according to the schedule set forth in the following plan in paragraph 11 of this part of the Permit. A justification shall be provided for the control plan in the Annual Report/Reviews in terms of meeting the requirements of the Clean Water Act.

The permittee shall carry out all necessary inspection, surveillance, and monitoring procedures to remedy and prevent illicit discharges. The District shall carry out the necessary monitoring activities with the goal of meeting the requirements of the Clean Water Act. The permittee shall submit an inspection plan, inspection criteria, and documentation regarding protocols and parameters of field screening as a part of the first Annual Review. The inspection plan shall include a schedule and allocation of resources.

The permittee shall implement procedures to prevent, contain, and respond to spills that may discharge into the MS4. The Permittee shall provide for the training of appropriate personnel in spill prevention and response procedures. The implementation of this program shall be reported in the first Annual Review.

EPA may allow for additional time for implementing the parts of the illicit discharge program if such delay is required for statutory and regulatory modification and/or Control Board and Congressional approval. Requests for additional time may be made in the Annual Review and are subject to EPA approval. EPA is not obligated in any way to approve such delays. A compliance schedule shall be attached to a request for a delay and once approved by EPA becomes an enforceable part of the Permit. A request for a delay cannot be used as a justification for noncompliance.

13.1.3 Permit Compliance

DOH WPD has initiated an illicit discharge detection program, issued notices of violation, and is monitoring corrective actions by violators. Illicit connections that are identified and 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 were reported as part of the upgraded SWMP submitted in October 2002. Removal of illicit connections reduces pollutant loading to receiving waters in accordance with the requirements of the Clean Water Act. Procedures to prevent, contain, and respond to spills have been formalized in the Water Pollution Contingency Plan.

13.2 MANAGEMENT PLAN TO DETECT AND REMOVE ILLICIT DISCHARGES ACTIVITIES

The DPW Solid Waste Education and Enforcement Program (SWEEP) seeks to maintain clean 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 50 field investigators.

DOH has implemented an ongoing program to detect illicit discharges, and to prevent improper disposal into the storm sewer system as required by federal regulations. In FY 2002 the District allocated funding for an environmental engineer/scientist to continue the identification and elimination of illicit connections and discharges.

DOH has inspected the storm water management structures for various District communities having homeowners Storm Water Covenants, and has identified illicit discharges at ten sites in the District. In addition to the additional pollutant loading, these illicit connections to storm water management structures increase the frequency of required device maintenance, and may clog the devices, preventing them from operating as designed to treat storm water. DOH has issued corrective action notices to the persons

designated as being responsible for maintenance of the impacted storm water management facilities. Facilities that have not complied with the corrective action notice have been referred to the Plumbing Inspection Branch of the Department of Consumer and Regulatory Affairs for enforcement action.

DOH is currently completing the identification and mapping of outfalls. From the database of outfalls, groupings of outfalls around the existing watersheds will be established. These groupings will then be used to create monitoring methods/strategies through the selection of representative outfalls in each group to be monitored for illicit discharges on a regular basis. This will enable DOH to detect and remove illicit discharges in a systematic and timely fashion. DOH had identified more than 50 outfalls.

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 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 is involved in ongoing efforts to eliminate suspected illicit discharges at several sites throughout the MS4. Investigation is made in response to reports by citizens or government personnel. Sites investigated include Watts Branch, NE, Mill Creek and Yuma Court, NW, Leegate Road, NW, Hayes Street, NE, 8th Street, NE, Benning Road Waste Facility, NE, Foundry Branch, NW, Foxhall and Canal Road, NW, Pepco Benning Road, NE, Woodlawn Cemetery, SE, Glover-Archbold Pkwy and Upton Street, NW (Mount Archbold Park), 1635 V Street, SE, 3105 Naylor Road, SE, Minnesota and M Streets (Pope Branch), 1415 Kenilworth Avenue, NE (All State Towing and Storage), 1711 First Street, 600 Gallatin St., NE, SW (Super Salvage, Inc., Recyclers of Ferrous & Non-Ferrous Metals), and 4619 Hillside Road, SE. Table 13-1 describes the problems at the sites and the actions taken.

Table 13-1 District Sites Investigated and Corrective Action Taken

SITE	PROBLEM	CORRECTIVE ACTION
Watts Branch, NE	Sporadic turbid discharge.	Sewage was suspected and DOH referred the matter to the DC Water and Sewer Authority (WASA). DOH continues to monitor the site.
1415 Kenilworth Ave., NE	Oil spill in the yard of AllState Towing and Storage Co.	Company was directed to clean oil, grease and contaminated soil.
5201 Haye Street, NE	A resident called for suspicious green liquid in the street.	DOH observed that it was a possibly car coolant. No further action taken.
8th Street, NE	A resident called for contaminated sewer discharge flowing in front of her house.	DOH referred the matter to WASA.
Benning Road Waste Facility, NE	DOH inspected the state of the storm drains. Most of the catch basins are clogged with sediments.	DOH ordered the cleaning of the catch basins.
PEPCO Benning Road, NE	DOH inspected the state of the storm drains.	Storm drains were found to be in good condition.
600 Gallatin St., NE	Oil spill in and around the property of "Magnolia Plumbing Co."	Extensive joint investigation was conducted by the DC Police, the DC Traffic and Road Services, the DC WASA, the DC Emergency Management (DOH), the Water Quality Division (DOH), the Hazardous Wastes Management (DOH), the National Park Service, and the Maryland Department of the Environment (Spill Response Team). Magnolia was directed to clean the spill.
Mill Creek at Yuma Court, NW	Sporadic turbid discharge.	Extensive work of joint investigation by DOH and WASA led to the discovery and correction of infiltration from sanitary sewer lines into storm sewer system.
1331 Leegate Road, NW	Resident complaining of neighbor's car wash activity discharging into the street.	DOH visited the site but took no further action.
Foundry Branch, NW	Sewage-like discharge observed by a resident.	DOH referred the matter to WASA.
Foxhall and Canal Road, NW	Suspicion of spill and/or illegal discharge(s) by residents who experienced strong sanitary odor.	DOH investigation was inconclusive, but the odor then subsided without further action.

SITE	PROBLEM	CORRECTIVE ACTION
Glove-Archbold Pkwy and Upton Street, NW	Resident observed bluish discharge in the Creek.	DOH and the National Park Service conducted a joint investigation, which pointed to a possible sewage infiltration. The matter was referred to WASA.
Woodlawn Cemetery, SE	Storm water overflow.	DOH identified the clogged drainage and referred the matter to WASA.
1635 V Street, SE	A resident suspected a continuous discharge creating a pool at the intersection of 16th and V streets.	DOH discovered that a broken water pipe was the source of the discharge. The matter was referred to WASA.
3105 Naylor Road, SE	DOH was contacted by resident because sewage was backing up onto the back area of the apartment building, and constituted a health hazard.	DOH discovered that there was a plumbing problem, and referred the matter to the Department of Consumer and Regulatory Affairs (DCRA), Building and Land Regulation, for further investigations.
4619 Hillside Road, SE	A resident complained of water standing in her property, and running from her yard onto the sidewalk.	DOH investigation indicated that the likely source of the water on the property was natural ground water seepage generally addressed by homeowner.
Minnesota and M Street, SE	Brown water was observed at Pope Branch.	DOH investigation concluded that storm run off washed clay and sedimentation that appeared brown at the outfall.
1711 First Street, SW	Possible soil contamination due to oil and grease in the yard of the Super Salvage, Inc.	DOH investigation was inconclusive, but there will be further investigation into the matter.

Environmental Education for the Compliance of Automotive Repair Shops (EE-CARS) is a multi-program compliance effort of the DC Office of Enforcement, Compliance, and Environmental Justice (OECEJ), US EPA, the DC Air Quality Division (AQD), and the DC Water Quality Division (WQD) aimed at improving environmental compliance of automotive repair shops. DOH has conducted 21 multi-media inspections of Automotive Services in the Hickey Run watershed for a total of 47 facilities (2 in Ward 2, 30 in Ward 5, and 15 in Ward 6). These facilities have been inspected as part of the MS4 program to observe how environmentally friendly the facilities are and for the purpose of educating the owners/managers of the facilities to inform them of their responsibility to the

environment, the consequences of non-compliance, and to minimize illicit discharges to DC waterways.

DOH has referred some of the investigated sites to appropriate agencies such as DCRA or WASA to facilitate compliance. DOH will continue to inspect the other sites that need further monitoring. The sites that are now in compliance will have no further action taken.

13.2.1 Illicit Discharge Prevention Program

The permit requires implementation of a program to prevent illicit discharges. The Water Pollution Control Contingency plan was completed in January 1999 and provides guidance on timely and effective response to hazardous substance releases that threaten to impact the natural resources of the District of Columbia. A copy of the Table of Contents from the Water Pollution Contingency Plan is provided in Appendix 5-C.

Currently, illicit discharges are investigated based on strong suspicion (presence of odor, oil sheen, dead fish, etc.), evidence of a discharge, or via a complaint or a call from the Office of Emergency Management or other party. DOH staff respond to complaints and investigate to determine the source of the discharge. The following categories of non-storm water discharges are investigated only if they are identified as sources of pollutants to the waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration and pumped ground water, discharges from potable water sources, foundation and footing drains, air conditioning condensation, springs, water from crawl space pumps, residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water. Depending on the extent and site of the discharge, US EPA, the US Coast Guard and WASA may be called upon for assistance with sample analysis, investigation, or containment.

The dry weather monitoring and inspection programs will continue to identify and eliminate illicit connections and discharges, thus removing these sources of pollutants to waters of the United States. The goal is to examine every storm sewer line that has flow during dry weather and identify the source of the flow to determine whether or not it is in the category of unauthorized non-storm water, illicit, discharges.

DOH has located two cross connections at 46th and Brandywine Streets, at 46th between Brandywine Street and Burlington Place, and a leakage from the sanitary sewer at 41st and Davenport Streets. WASA has successfully resolved the situations.

13.2.2 Floatable Reduction Program

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 remove up to 120 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.

Utilizing the skimmer boats, 500 tons of floatable materials were collected during 2002. This compares with 650 tons for the year 2001.

The BMP system proposed for installation in the National Arboretum on Hickey Run would 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.

13.2.3 Wastes Collection Program

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 and a permanent, fixed location for hazardous waste drop-off is being included in the refurbishment of the two hazardous waste transfer facilities operated by DPW.

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 May 11th and November 6th at Fort Reno. The date of the next collection event

is being scheduled for late spring 2003. A complete discussion of the household hazardous waste collection activities for the past year is provided in Section 15.0.

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 4.0 of this report.

13.2.4 Inspection Plan

The Permit states that the Permittee will use a mix of strategies for the detection and elimination of illicit discharges. These strategies include development of an illicit connection detection and enforcement program to perform dry weather flow inspections in targeted areas, visual inspections of targeted areas, issuance of fines, tracking and reporting illicit discharges, reporting progress on stopping targeted illicit discharges, and in appropriate cases, chemical testing immediately after discovery of an illicit discharge.

As part of the illicit connection detection and enforcement program, DOH conducted dry weather discharge sampling during the past year. Sample analysis results and discussion of the results is included in Section 16.0 of this report. Visual inspections are performed by WASA personnel when performing maintenance activities on catch basins and the MS4 infrastructure.

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.

13.2.5 Enforcement Plan

DOH WQD has developed a draft "*Enforcement and Compliance Manual*" that describes inspection and enforcement efforts. A copy is included in Appendix 13-A.

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 14.0 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. Pursuing legislation to prohibit these

activities is currently under consideration by DOH. The District of Columbia 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, (the Act), D.C. Official Code 8-103 *et al*, provides that no person shall discharge a pollutant to the waters of the District. The 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.

13.2.6 Spill Response Program

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 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 of Columbia. 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. As noted previously, a copy of the Water Pollution Control Contingency Plan is provided in Appendix 5-C.

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 SWMP 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.

DPW has requested funding from the Storm Water Enterprise Fund to purchase spill response kits and conduct training in their use.

13.2.7 Request for Additional Time

Annual Review, the Permittee requested additional time to implement the illicit discharge program in accordance with Part III.B.10 of the Permit. At that time the Storm Water Permit Compliance Amendment Act had not been approved, and so funding for the program was not yet available. The Permittee requested 12 months from the date of final approval of the Act to complete development of its illicit discharge program. The Act was approved on June 9, 2001, providing an extension of time under this request until June 9, 2002. Since the provision of an extension, DOH WQD has made progress with the personnel currently in place in setting up an illicit discharge program.

14.0 ENFORCEMENT PLAN

14.1 REQUIREMENTS OF THE PERMIT

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

14.1.1 General Requirements

No general requirements were identified in the Permit.

14.1.2 Specific Requirements

The permittee shall develop and implement (according to a schedule to be submitted in the SWMP Implementation Plan in Part III.D.) an enforcement plan for carrying out the objectives of the SWMP. The type of enforcement activities and resources devoted to those activities shall be included in the Annual Reporting (Part III.C.) and the SWMP Implementation Plan. A listing of all violations and enforcement actions shall be used to assess the effectiveness of the Enforcement Program in each Annual Review. Enforcement shall be maintained at its current level.

14.1.3 Permit Compliance

A written enforcement strategy for construction site storm water violations was prepared and submitted in the 2001 Annual Review. This strategy is followed by DOH WPD staff during inspection of construction sites and subsequent enforcement actions. Details regarding the type of enforcement activities and resources devoted to those activities and a listing of all violations and enforcement actions are included in Section 14.2 below.

14.2 ENFORCEMENT ACTIVITIES

14.2.1 Legal Authority

The District of Columbia Municipal Regulations, Chapter 5 – Water Quality and Pollution, included in Appendix 5-B,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 SWMP. Removal of illicit connections to the MS4 is enforced through the Plumbing Inspection Branch of the Department of

Consumer and Regulatory Affairs. Enforcement authority prohibiting the dumping of used motor vehicle fluids is provided in D.C. Laws 5-188 and 10-177.

14.2.2 Enforcement Activities and Resources

DOH WQD has developed a draft "*Enforcement and Compliance Manual*" that describes inspection and enforcement efforts. A copy is included in Appendix 14-A. This manual details the written enforcement strategy outlining how enforcement actions, such as violation notices, notices of infractions, and stop work orders are issued and adjudicated. The strategies outlined in the manual provide the standard operation procedures for enforcement within the District.

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 SWMP and the Permit.

14.2.3 List of Violations

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 6-B of this report.

14.2.4 Assessment of Effectiveness

During FY 2002, DOH WPD reviewed 1,691 construction plans and approved 1,359 of them. A total of 5,837 on-site inspections were performed to enforce erosion and sediment control requirements. As a result of these inspections, 138 cases were referred for enforcement actions. This represents a significant decrease (38%) from FY 2001, when 224 enforcement actions were taken. The Office of Adjudication and Hearings Docket is included as Appendix 6-B of this report.

15.0 PUBLIC EDUCATION

15.1 REQUIREMENTS OF THE PERMIT

The Permit in Part III.B.12 requires that the District "develop a public education program."

15.1.1 General Requirements

The permittee shall develop a public education program. There are many components of a storm water public education program required by federal regulations at 40 CFR 122.26. The permittee will address all topics and related audiences including the following requirements:

- *A household hazardous waste educational and outreach program shall control illicit discharges to the MS-4 as required under Part III.B.10. This permit requires the Permittee to develop programs and materials during the term of the Permit to inform and educate the public on proper management and disposal of used oil, other automotive fluids, and household chemicals.*

- *A residential and commercial pesticide and fertilizer educational and outreach program shall address the use and application of pesticides and fertilizer under Part III.A.7. This program shall promote the proper use of pesticides, herbicides, and fertilizers through the development and dissemination of either new or existing educational materials.*

- *An industrial facility outreach program shall be developed as a means of monitoring and controlling pollutants in storm water from industrial facilities as required under Part III.A.2. An industrial facility outreach program should focus on informing industries within the District's watersheds about storm water permitting and pollution prevention plans. This program should also inform industries of the requirement that they develop structural and non-structural control systems, pursuant to regulations at 40 CFR 122.26(d)(2)(iv)(C) and (iv)(A)(5).*

- *A construction site operators education and outreach program shall provide construction site operators with technical guidance documents. The Permittee shall continue providing these types of outreach and educational materials.*

The permittee shall submit copies of all records and reports to the Martin Luther King, Jr. Public Library, to be kept in a single location for public review. This requirement shall extend at a minimum to all pertinent records and reports required to be filed with EPA.

15.1.2 Specific Requirements

The permittee shall develop public educational materials in cooperation and coordination with other agencies and organizations in the District with similar responsibilities and goals (i.e., WASA's CSO public education activities; local nonprofit organizations). Public education materials shall be developed in an easy-to-understand format and at a technical level appropriate for the target audience. Progress reports on public education shall be included in the Annual/Review Reports. An explanation shall be provided as to how this effort will reduce pollution loadings to meet the requirements of the Clean Water Act.

15.1.3 Permit Compliance

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. 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. Public education efforts continue to include pamphlet distributions on topics such as: pet waste, household hazardous waste, oil and grease in Hickey Run, and pesticides and herbicides. A video demonstrating proper maintenance of the sand filter water quality structure has also been developed and used in construction operator training.

15.2 PUBLIC EDUCATION ACTIVITIES

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

15.2.1 Public Web Site Development

On March 1, 2002, WASA launched an updated public web site for the agency. As part of the update, five pages of information regarding the MS4 program were created. In addition to the default opening page titled, "Separate Storm Sewer System," four pages were maintained and updated:

- **Overview** – Get a general overview of the Municipal Separate Storm Sewer System (MS4).
- **Municipal Separate Storm Sewer System (MS4) Permit** – Learn about current regulations governing MS4s and how DC WASA is responding.
- **What Can I Do?** – Learn what you can do to help local water quality.
- **Contact Information** – Find contact information and additional resources for CSS- and MS4-related issues.

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

Since its launch, the MS4 web page has been updated to include current information on activities such as the public hearing conducted in August 2002 regarding the Advisory Panel Report to Council, and other Permit-related 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.

15.2.2 Education and Outreach

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 –** Assist teachers in fulfilling their teaching and learning standards while helping students develop environmental ethics and responsible stewardship.

- **P2 (Pollution Prevention) –** Through a grant to an environmental organization, a pollution minimization assessment will be conducted. 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.

15.2.3 Household Hazardous Waste Collection and Disposal

The existing program for the collection of motor vehicle fluids and household hazardous waste has been expanded and a permanent, fixed location for hazardous waste drop-off is being included in the refurbishment of the two hazardous waste transfer facilities operated by DPW.

During the past year, two hazardous waste collection days were held, where residents could bring hazardous wastes for proper disposal. The collection days were May 11 and November 6, 2002. The primary location for the collections was the Carter Barron Parking Lot, 16th and Kennedy Streets, NW, between 9 AM and 3 PM. Accepted materials included paint, batteries, pesticides, solvents, motor oil, furniture polish, nail polish and remover, and other possibly toxic items.

The May collection event included collections at Fort Reno when more than 1,200 cars dropped off household hazardous wastes. These wastes included flammables, oxidizer, pesticides, acids, bases, motor oil, fluorescent bulbs, dry cell batteries, thermometers, and asbestos. The Care Environmental Corp. was subcontracted to perform the collection and packing of the waste for the District.

During the November 6, 2002 collection event, 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. Again, the Care Environmental Corp. was subcontracted to perform collection and packing of the waste for the District.

DOH WPD also provides educational opportunities for residents of the District to increase awareness of the proper disposal methods for household hazardous wastes. In 2002, WPD provided participants at 12 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 seven workshops and copies were lent to four DC schools.

DOH WQD develops outreach materials based on the needs identified from the problems seen via field investigations. For example, a draft brochure entitled "Information for Homeowners to Effectively Prevent Contamination of Storm Water" provides information for increasing public awareness of the ecological consequences of storm water runoff, surface water contaminants, the difference between sanitary and storm sewers, identifying at-home hazards, and how and where to report illegal dumping.

15.2.4 Pesticides, Fertilizer, and Pet Wastes Program

Pesticides

DOH WPD has developed an education and outreach program entitled "Integrated Pest Management/Nutrient Management." The purpose of the program is to better inform the public on the proper use, 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 2002, DOH WPD distributed information to 365 teacher workshop participants and provided information at the Greater Washington Urban Water Festival, the Lily Festival at Kenilworth Gardens, and to the Chesapeake Bay Executive Council. 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 (IPM) 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.

Pet Wastes

DOH DPW 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 2002, DOH WPD provided 1,000 "Scoop Your Pet's Poop" brochures to DOH's Animal Disease Prevention Division and 5,000 to DC Animal Shelter Control.

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.

15.2.5 Industrial Facility Program

DOH WPD performs outreach to industrial facilities through seminars and conferences for managers of industrial facilities. Inspections performed by DOH personnel are used to promote awareness of the proper methods of storage of chemicals for managers of industrial facilities. Additionally, the managers are given a pamphlet on preventing discharges to Hickey Run. A copy of the pamphlet is provided in Appendix 15-A.

15.2.6 Construction Site Operators' Program

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. The regulations require the submission and approval of a work plan before restorative maintenance activity of the filter bed for any DC 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 in October 2002. 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.

Also, as part of strengthening the programs, an article entitled *"Implementation of an Effective Erosion Control and Storm Water Management Enforcement Program in Washington, DC"*, authored by Collin R. Burrell and Hamid Karimi of DOH WPD, was published in the September/October 2002 edition of "Stormwater – the Journal for Surface Water Quality Professionals." The article was presented at the 33rd International Erosion Control Association (IECA) Annual Conference in Orlando, Florida, and subsequently published in the IECA conference proceedings.

15.2.7 Agency Cooperation Program

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 drawn up plans with upstream agencies to reduce the levels of toxics in the rivers.

Together with the AWRC, DC 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

The Environmental Protection Agency 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 (USDA NRCS) provides technical and monetary assistance to restore the stream bank of Watts Branch. USDA NRCS has provided public outreach at various environmental fairs and training courses on stormwater management, and runoff from commercial and residential activities.

WPD is collaborating with USDA NRCS to revise and update the Soil Survey for the District of Columbia. As part of this process, the existing Soil Survey has been converted to electronic format and is now available on CD as well as hard copy format. The general soil and soil type maps have been digitized and are now accessible on DOH and NRCS websites.

The National Park Service maintains federal land holdings that border District waterways. The National Park Service has begun 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 is also 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 maintains gauging stations along Rock Creek and Watts Branch that provide data for the discharge monitoring program described in Section 16.0 of this report.

Universities

Universities in the District provide research and support services to the MS4 programs of the District government. These services include 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 provide 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 4.2 of this report.

Nonprofit/Environmental Group Partnerships

District agencies have 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 has conducted pollution prevention workshops intended to raise public awareness about trash, oil, fertilizer, pesticides, and prevention methods.

An interagency and community task force, the Watts Branch Task Force, addresses impairments to Watts Branch. They have 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 works to improve water quality along Pope Branch by controlling erosion through various tree, shrub, and flower planting, and improvements to ground cover. This group has also been directed on how to report illegal dumping activities and arrange for bulk trash pickup, and has 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 Appendix 6-A.

15.2.8 Library Submittals

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.

15.2.9 Meeting the 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 by teacher training days, community outreach, and various fairs and festivals in the District. This methodology exposes children to their effect on the surface runoff and storm water discharges at an early age. This effort has developed a pollution prevention mindset and is more cost effective than developing ways of mitigating runoff.

16.0 MONITORING AND REPORTING REQUIREMENTS

16.1 REQUIREMENTS OF THE PERMIT

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

- Storm event discharge monitoring
- Dry weather monitoring
- Wet weather screening program

General and specific requirements of this section are detailed below.

16.1.1 General Requirements

The permittee shall develop and implement a wet-weather monitoring program for the Municipal Separate Storm Sewer System (MS4) to provide data necessary to assess and report the effectiveness and adequacy of control measures implemented under the Storm Water Management Program (SWMP); estimate annual cumulative pollutant loadings from the MS4; estimate and report the event mean concentrations and seasonal pollutants in discharges from major outfalls; identify and prioritize portions of the MS4 requiring additional controls; and identify water quality improvements or degradation. The sampling plan to be developed by the permittee shall be consistent with the monitoring requirements at 40 CFR 122.26 (d)(2)(iii).

The permittee is responsible for conducting any additional monitoring necessary to accurately characterize the quality and quantity of pollutants discharged from the municipal separate storm sewer system. Improvement in the quality of discharges from the MS4 will be assessed based on the monitoring information required by this Part of the permit, plus any additional monitoring conducted by the permittee.

16.1.2 Specific Requirements

Two specific requirements are listed in this section of the Permit for inclusion in this Annual Report:

- *Screening may be developed and/or modified based on experience gained during actual field screening activities and need not conform to the protocol*

at 40 CFR 122.26(d)(1)(iv)(D). A description of the protocol actually used shall be provided in the next Annual Review with a justification for its use. The procedures described in the November 4, 1998 SWMP shall be used as guidance.

- *The permittee shall immediately implement a program to locate and eliminate suspected sources of illicit connections and improper disposal identified during dry weather screening activities, and report the results of that implementation in each Annual Report.*

16.1.3 Permit Compliance

A detailed discussion of the monitoring results is presented in the Discharge Monitoring Report submitted under separate cover. This report describes the monitoring sites, sample collection, record keeping, monitoring results, and estimates of loadings that occurred between February 2002 and March 2003.

16.2 STORM EVENT MONITORING AND WET WEATHER SCREENING ACTIVITIES

The District has identified nine outfalls for initial screening and representative data collection to be conducted over three storm events. The nine outfalls were selected, per 122.26(d)(2)(iii)(A), based on representative land use in their drainage basins, drainage basin areas, and hydraulic conditions in the storm sewer lines upstream for the outfalls. After approval by EPA of the nine alternative sampling locations on January 17, 2001, WQD authorized the initiation of the storm water discharge sampling program. A listing of the sites and the acreage monitored at those sites is found in Appendix 16-A.

After several failed attempts by the contractor to collect wet-weather samples at the Ft. Lincoln-Newtown BMP, MES requested that DOH investigate the BMP. During a January 2002 site visit by DOH staff, which designed and monitored construction of the BMP, found that the BMP was not functioning as designed. Consequently, there are no sampling events to report for site 8 (Ft. Lincoln-Newtown BMP).

Sampling and flow meter equipment were installed in the nearest feasible manholes upstream of the outfalls. By installing equipment in the manholes, various problems, such as installation accessibility, security of equipment, presence of extreme slopes above

the outfall and the possibility of backflow in the manholes, could be reduced or avoided.

The period of data collection was from February 2002 and March 2003. Table 16-1 provides a summary of MS4 monitoring activities during the period. A total of 19 samples were collected from 8 locations, of which 18 were collected for wet weather monitoring and one sample was collected for dry weather monitoring. Complete results of sample analyses are included in Appendix 16-A. The Discharge Monitoring Report submitted together with this Annual Report under separate cover provides a detailed evaluation of the sample analysis results.

Samples were collected by Maryland Environmental Services, under contract with DOH. Following permit requirements, aqueous samples were analyzed at an analytical laboratory for pollutants commonly found in urban storm water runoff. Details of monitoring procedures, as well as specific pollutants and water quality parameters of concern are discussed in the Quality Assurance Project Plan (QAPP). 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.

16.2.1 Criteria For Storm Water Discharge Sampling

The regulations require that storm water runoff at each of the nine outfalls be sampled from three storm events. An allowable storm event defined in 40 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 that 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 (NOAA). 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. Storms sampled during the characterization study theoretically fall within a

50th to 150th percentile of a representative storm for the appropriate month. The monthly rain data summary and the anticipated rainfall ranges required for sampling are given in Appendix 16-A. The average monthly rainfall in the District is 3.26 inches with an average rainfall duration of 7.38 hours. The average number of rainfall events per month is seven. Using the above criteria, a representative storm event ranges from 0.23 to 0.69 inch of precipitation with a duration ranging from 3.69 to 11.07 hours.

Appendix 16-A presents a table of the actual, predicted normal, and average precipitation for the Washington, DC area for the period of January 2001 through February 2002. During that period, the amount of precipitation was below the predicted norm and the ongoing decrease in precipitation resulted in one of the driest periods on record. Therefore, a delay in wet weather event sampling occurred. Wet weather monitoring was not completed as required (i.e., three times per year) due to the near drought conditions during this recent period. Data from February to June 2002 were used to fulfill the data requirements. The period of data collection was therefore from January 2001 through June 2002.

16.2.2 Narrative Descriptions of Storm Events Sampled

Data Logging rain gauges were installed at six of the District's monitoring stations. Selected rain gauge site locations and the monitoring stations they represent are described in Appendix 16-A along with rain events for which samples were collected. Narrative descriptions of each sampled storm event are presented in the 2003 Discharge Monitoring Report. Appendix 16-A provides a summary table of the precipitation accumulation and duration, and time to the previous event for the rainfall events sampled.

16.2.3 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, which is included in Appendix 16-A.

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
  - Atlantic Coast Laboratories Data
  - Lancaster Laboratories Data
  - Triangle Laboratories Data
  - Martel Laboratories Data

Analytical results for detected pollutant concentrations from all monitoring events to date are presented in Appendix 16-A.

Monitoring Station Number 8, at Fort Lincoln, was established to monitor an existing BMP. Because of problems with the BMP, no samples were collected at that location.

16.3 REPORTING ACTIVITIES

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 inception of the MS4 Permit in April 2000 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.

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[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.

16.3.1 Estimation of Event Mean Concentrations

System-wide event mean concentrations were estimated following procedures described in EPA's *Guidance Manual for the Preparation of Part 2 of the NPDES Permit Application for Discharges from Municipal Separate Storm Sewer Systems (EPA, 1992).*

The EMC is defined as:

$$C_i = T\left(\sqrt{1+\mathrm{CV}^2}\right)$$

Where: C_i = Event Mean Concentration
T = Median Concentration of the Samples
CV = Coefficient of the Variance of the Samples

The Event Mean Concentrations (EMC) of these 12 pollutants were determined for each representative sewershed based on analysis of samples Collected between February 2001 and June 2002. The 12 pollutants and the calculated Event Mean Concentrations are presented in Table 16-2. The EMC calculated were then averaged to provide an estimated system-wide EMC for each pollutant.

16.3.2 System-wide Annual Pollutant Loading

The MS4 system-wide annual pollutant loads were calculated by the Simple Method, utilizing the system-wide event mean concentrations estimated in Section 16.3.1 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 averaging 47 years (1947-1996) of annual records for Washington 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 16-A.

MS4 system-wide annual pollutant loads for the 12 required pollutants were estimated and are presented in Table 16-3 together with the estimated system-wide EMC calculated for each pollutant.

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, fecal coliform, and fecal streptococcus should be noted. Oil and grease, even at the Hickey Run storm water monitoring site, is not a major pollutant of concern based on the available data.

Table 16-3 Estimated System-wide Event Mean Concentration and Annual Pollutant Loading for the District MS4

Pollutant	Event Mean Concentration	Pollutant Load
	mg/L	Lb/yr
TSS	102.31	13,371,678
BOD	41.65	5,443,558
COD	140.69	18,387,855
TDS	213.03	27,842,524
TN	4.06	530,633
TKN	2.89	377,716
TP	0.38	49,665
DP	0.3	39,209
Cadmium	0.000154	20
Copper	0.0892	11,658
Lead	0.0326	4,261
Zinc	0.089	11,632

16.4 DRY WEATHER MONITORING

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. Standard Operating Procedures (SOP) for “Dye Testing to Find Sanitary Sewer Leaks” is pending.

Identifying DC 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.

16.5 IDENTIFICATION OF WATER QUALITY IMPROVEMENTS OR DEGRADATION

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

17.0 HICKEY RUN TOTAL MAXIMUM DAILY LOAD

17.1 REQUIREMENTS OF THE PERMIT

The Permit in Part VI requires a waste load allocation of 11.9 lbs/day of oil and grease representing the load from the four MS4 outfalls to Hickey Run.

17.1.1 General Requirements

The following table shows the percent of the total load of the pollutants from point and nonpoint sources.

Source	Percent of Total Load	
	Existing Conditions	After the TMDL
Point Source (4 outfalls)	88.9%	44%
Nonpoint Source	11.1%	31%
Margin of Safety	0.0%	25%

The TMDL requires a wasteload allocation of 11.9 lbs/day of oil and grease representing the load from these four sewer outfalls. Achieving this allocation requires an 88.9% reduction of the oil and grease currently being discharged from the outfalls. The effluent limit is 11.9 lbs per day for the MS-4 discharge to Hickey Run.

17.1.2 Specific Requirements

Part IV.A. of this permit requires monitoring of six representative outfalls in the District's separate storm water system(MS4) three times a year. A similar monitoring frequency is applied to the monitoring of this limit to allow the District to sample these outfalls as they are sampling the other six. The Permittee shall conduct appropriate and representative monitoring to confirm compliance with this limit. Discharge Monitoring Reports shall be submitted to EPA and the D.C. Department of Health three times a year, pursuant to Part VIII.E.

The District shall determine the minimum elapsed time between samples taken during the year and report that decision in the first Annual Review. The sampling plan shall be completed and reported in the first Annual Review.

An explanation shall be provided for exceedances above the limit in an attachment to the Discharge Monitoring Report (DMR) submitted pursuant to Part VIII.E. The above effluent limitation for Hickey Run becomes effective and enforceable 3 years from the date of issuance of this permit (April 19, 2003).

17.1.3 Permit Compliance

The District has implemented a water quality monitoring program on Hickey Run in compliance with the permit conditions. Results of monitoring in the MS4 indicate no exceedances of the District's water quality standards. A detailed discussion of the monitoring results is presented in the Discharge Monitoring Report submitted under separate cover. This report describes the monitoring sites, sample collection, record keeping, monitoring results, and estimates of loadings that have occurred since January 2002.

Additionally, as part of an overall management plan for Hickey Run, the District is evaluating potential BMPs to reduce the amount of oil and grease discharged into Hickey Run.

17.2 HICKEY RUN TMDL ACTIVITIES

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

The stream has been historically plagued by illegal oil and grease dumping. 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

The District has initiated water quality monitoring of the Hickey Run discharge, and the results of that monitoring for oil and grease as well as other parameters are discussed in the April 2003 Discharge Monitoring Report submitted together with this report.

One effort to positively impact the health of the Hickey Run watershed, through the joint cooperation of DOH, the DC Office of Enforcement, Compliance, and Environmental Justice (OECEJ), and EPA entails a survey of automotive service shops. The survey compiled a listing of all the automotive service shops in the area including: (1) company name, (2) address, (3) contact information, (4) and types of services provided. The information is being used to improve the compliance of automotive repair shops with environmental rules and regulations that impact the health of the Hickey Run watershed.

Automotive service shops have been selected because many use chemicals, such as oil and grease that may greatly impact the watershed. Moreover, Ward 5, where Hickey Run is located, contains more industrially zoned areas than any other ward in the city. The survey was the first step toward identifying the location and nature of businesses. In December 2001, surveyors from OECEJ and EPA canvassed Ward 5. Of the 108 automotive service shops identified in Ward 5, 57 were in the Hickey Run watershed. The survey is to be followed by:

- characterization of facilities
- industry profile and predominant pollution types
- baseline inspections
- design and implementation of public education programs
- compliance

There are several other phases that are being implemented in moving toward a healthier Hickey Run watershed. The OECEJ is in the process of developing Inspector Checklists and a Voluntary Compliance program in conjunction with the DOH environmental

programs to address water, air, and soil concerns. Environmental Business Performance Indicators are being developed to serve as indicators for understanding both compliance status and overall environmental performance of facilities. A statistical analysis of the data received, as well as an overall analysis of the project will serve to assess the level of compliance and the need for further action within the watershed.

17.2.2 Evaluation of BMPs

The District has begun the evaluation of BMPs that will reduce pollutants including oil and grease discharged from the MS4 to Hickey Run. In 2001, The Center for Watershed Protection conducted an evaluation of BMPs that could be potentially installed in Hickey Run near New York Avenue. A structural BMP was recommended by The Center for Watershed Protection. The BMP consists of a centrifugal separation device as the primary treatment combined with a netting trash rack. When coupled with supplemental sorbents the device is able to treat oil and grease at low rainfall intensities.

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 is presented in Appendix 17-A. This plan reviews and evaluates data, and provides 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. This document is being used as the basis for complying with the oil and grease TMDL.

17.2.3 Cooperative Agreement With National Arboretum

The District has conducted ongoing discussions with the National Arboretum, which controls the land downstream of the outfalls. Discussions were done in the following general steps:

- In an action separate from the MS4, Congress allocated $500,000 (in FY 2001) to the National Arboretum to install a trash control device on Hickey Run.

- The District suggested combining the Arboretum's trash netting system with a device to remove oil and grease. DOH provided a grant to the Center for

Watershed Protection (CWP) to evaluate appropriate trash and oil and grease trapping BMPs. This device is discussed in Section 7.2.2 above.

- Following discussions with the USDA regarding the use of land within the National Arboretum, the Storm Water Administrator drafted a Memorandum of Understanding (MOU) in November 2001, which detailed the BMP to be built in the Arboretum and the commitments required of USDA, DOH and WASA.

- After several iterations of the MOU, the USDA revised the draft MOU in January 2003 to allow study of Hickey Run, and deleting construction of any BMP.

- At this time no MOU has been adopted, and discussions with the National Arboretum continue.

The Storm Water Administration has, since January 2003, conducted an initial evaluation of other, upstream locations for construction of BMP(s). This evaluation determined that the construction of a BMP at these locations would be difficult if not impossible due to the location of the storm sewers under major traffic arteries, and the shallow slope of the storm sewers.

The only cost effective site for implementing a pollution control device that would meet the permit requirement is the storm water outfall to the Hickey Run located in the National Arboretum. No action can be taken to complete the design and install any pollution control device at this site without the agreement of the National Arboretum.

In 2002, DOH WPD transferred funds to the US Fish and Wildlife Service to conduct a habitat assessment of Hickey Run. The US Fish and Wildlife Service has been asked to make recommendations for needed stream restoration and for the possible creation of a marsh at the mouth of the stream. These possible restorations, together with the proposed pollution control device at the MS4 outfall will contribute to improve water quality in Hickey Run, and the Anacostia River.

17.2.4 Public Education

DOH developed an informative pamphlet titled, “Protecting Hickey Run – Where Oil and Water Don’t Mix.” The pamphlet was distributed to residents and businesses in the Hickey Run watershed. A copy of the pamphlet is provided in Appendix 15-A.

Environmental Education for the Compliance of Automotive Repair Shops (EE-CARS) is a multi-program compliance effort of the DC Office of Enforcement, Compliance, and Environmental Justice (OECEJ), US EPA, the DC Air Quality Division (AQD), and the DC Water Quality Division (WQD) aimed at improving environmental compliance of automotive repair shops. DOH has conducted 21 multi-media inspections of Automotive Services in the Hickey Run watershed for a total of 47 facilities (2 in Ward 2, 30 in Ward 5, and 15 in Ward 6). These facilities have been inspected as part of the MS4 program to observe how environmentally friendly the facilities are and for the purpose of educating the owners/managers of the facilities of their responsibility to the environment, the consequences of non-compliance, and to minimize illicit discharges to DC waterways.