GOVERNMENT OF THE DISTRICT OF COLUMBIA
WASHINGTON, DC

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221

STORM WATER ADVISORY PANEL

REPORT TO COUNCIL
OF THE DISTRICT OF COLUMBIA

September 9, 2002

Anthony A. Williams
Mayor

GOVERNMENT OF THE DISTRICT OF COLUMBIA
WASHINGTON, DC

Municipal Separate Storm Sewer System
NPDES Permit No. DC0000221

STORM WATER ADVISORY PANEL MEMBERS[1]

Anthony A. Williams, Mayor

Linda W. Cropp, Council Chair, Council of the District of Columbia

Jerry Johnson, General Manager, Water and Sewer Authority

James A. Buford, Director, Department of Health,

Leslie Hotaling, Director, Department of Public Works

Daniel Tangherlini, Director, District Department of Transportation

Natwar Gandhi, Chief Financial Officer of the District of Columbia

[1] Advisory Panel members may designate a representative in accordance with Section 206c (b) of DC Law #13-311 "Storm Water Permit Compliance Amendment Act of 2000".

STORM WATER ADVISORY PANEL REPORT TO COUNCIL

1.0 INTRODUCTION

1.1 GENERAL

The Storm Water Advisory Panel submits this Report to the Council of the District of Columbia in compliance with D.C. Law 13-311, “Storm Water Permit Compliance Amendment Act of 2000.” This report fulfills the requirements of DC ST § 34-2202.06c, which requires that the Panel prepare, “comprehensive recommendations to the Council that identify the best means by which the District of Columbia can meet all present and future federal regulatory and permit requirements pertaining to the discharge of storm water into receiving waters."

The Panel is required to provide its recommendations to the Council by September 9, 2002 in a report that makes specific findings on whether the existing allocation of storm water management responsibilities among District agencies, is capable of meeting present and future regulatory requirements for storm water discharge. In the event the Panel feels that the existing allocation of responsibilities is not adequate, the Panel should recommend changes to be made or new government entities to be created.

The Panel is also tasked with determining if the current storm water fee structure and rate are equitable and sufficient for the District to meet its present and future regulatory requirements for storm water discharge. If the Panel determines the current structure and rate is not equitable and sufficient, the Panel must recommend what fee structure and rate would be required to most fairly meet these responsibilities.

The Panel shall consider, determine whether to create, and estimate the initial cost and time necessary to design a storm water fee based on the relationship between impervious surface and the amount of storm water discharged into the District's storm water system.

1.2 BACKGROUND

In April 2000, U.S. Environmental Protection Agency (EPA) issued a discharge permit to the District of Columbia (District) as Permittee for a Municipal Separate Storm Sewer

System (MS4) permit. The Permit allows discharge of storm water from the MS4 system to the Potomac and Anacostia Rivers and tributaries in accordance with the conditions of the Permit. The current Permit will expire on April 19, 2003 and a new permit will be issued based on an application submitted to the EPA by the District in October 2002.

Storm Water Permit Compliance Amendment Act of 2000

In June 2001, the District enacted the "Storm Water Permit Compliance Amendment Act of 2000" (Act) (DC Law #13-311) that authorizes WASA to coordinate actions among other District agencies in connection with permit compliance activities. Three agencies were identified as participants in activities necessary to comply with the MS4 permit: DC Water & Sewer Authority (WASA), DC Department of Public Works (DPW) and DC Department of Health (DOH). This Act also established a Storm Water Permit Compliance Enterprise Fund and authorizes WASA to collect a storm water fee from water customers within the District to offset costs incurred because of mandated activities within the MS4 Permit.

The Act created a Storm Water Administration within WASA and established WASA as the lead agency to coordinate the District's storm water management activities in relation to the Permit. The General Manager of WASA is empowered to designate a person to head this administration. The Administrator was given the authority to include other appropriate agencies as participants in the MS4 Permit Compliance activities.

On May 21, 2002, in the legislation (DC Law 14-137) creating the District Department of Transportation (DDOT), both DDOT and the DC Chief Financial Office (CFO) were added to the Storm Water Advisory Panel. These agencies are now considered formal participants in all aspects of the MS4 compliance activities.

Memorandum of Understanding

The Storm Water Permit Compliance Act of 2000 necessitated a Memorandum of Understanding (MOU) among District Agencies to allocate storm water management responsibilities. In December 2000 a MOU was crafted between the District of Columbia's City Administrator, DOH, DPW, WASA, and the Chief Financial Officer (CFO) of the District of Columbia to discharge Permit responsibilities. The MOU shall terminate upon expiration of the current MS4 Permit (April 2003) unless extended by agreement of all signatories.

DOH is responsible for regulatory enforcement of water quality and storm water monitoring, while DPW is responsible for maintenance of public roads and municipal waste collection, including street sweeping. Since the creation of DDOT, the existing storm water management responsibilities assigned to DPW under the MOU were divided between DPW and DDOT, with DDOT maintaining public roads, and DPW responsible for street sweeping, municipal waste collection and the maintenance of facilities to conduct these activities.

WASA is an independent agency that provides potable water and wastewater treatment services for both sanitary and combined sanitary systems. WASA also operates and maintains certain storm water system infrastructure.

The MOU allocates the responsibilities among the MOU signatories for storm water management activities required in the Permit. Appendix A contains the implementation matrix from the MOU detailing the responsibilities of each agency.

1.3 PUBLIC COMMENT AND PUBLIC HEARING

The draft Report to Council was released to the Advisory Neighborhood Commissions on July 17, 2002 for a 45-day review, and published in the DC Register on August 2, 2002 for a 30-day comment period. On August 27, 2002 a Public Hearing was held at the Martin Luther King, Jr. Library, 901 G Street NW, Washington, DC, for the public to provide testimony regarding the Panel's draft report as published in the DC Register. The transcript of the Public Hearing is provided in Appendix A. The persons testifying were generally supportive and encouraged the Council to evaluate different components of an impervious area based storm water fee, and provided comments specific to this report and more generally regarding the MS4 program. The written testimony provided by citizens is also included in Appendix A. The text of this report has been revised and expanded to include specific points contained in the public testimony regarding the Advisory Panel Report to Council, and the result is this document as presented to the Council of the District of Columbia. The Panel encourages the Council to consider the public's comments when evaluating the best way to move forward with these important issues.

2.0 ALLOCATION OF STORMWATER MANAGEMENT RESPONSIBILITIES

2.1 Current Allocation of Responsibilities

WASA, DOH, DPW, and DDOT, through the December 2000 MOU, have successfully allocated and coordinated storm water management activities necessary to meet present regulatory requirements for storm water discharge planning and implementation. They have added staff and expanded their capabilities as necessary to fulfill the requirements of the current Permit.

As noted in the previous section, the existing allocation of storm water management responsibilities among WASA, DPW, and DOH is formalized in the MOU. The responsibilities allocated to DOH under the MOU are fulfilled by the Watershed Protection and Water Quality Divisions within the Environmental Health Administration of DOH. WASA coordinates the activities among the agencies through monthly meetings of the Storm Water Task Force, which consists of representatives from each signatory of the MOU. The MOU responsibilities assigned to DPW have been divided between DPW and DDOT, and the MOU continues to function effectively with DDOT as a *de facto* party to the MOU.

As the Agencies developed an understanding of the scope and magnitude of the additional storm water management activities required by the Permit they have adapted to fulfill the requirements of the Permit. Both DOH and WASA recruited additional personnel to expand their storm water management activities as needs were identified. Since its creation, DDOT has requested funding from the Enterprise Fund beginning in FY 2003 to provide additional personnel to speed the review and approval of storm water management permits for DDOT construction projects. WASA has also contracted a program management consultant to assist in planning, technical studies, administration, and documentation of MS4 permit activities.

2.2 Future Allocation of Responsibilities

The current MOU has provided an effective framework for allocating and coordinating the efforts of WASA, DPW, and DOH to meet regulatory requirements. The creation of DDOT as a separate agency will require, at a minimum, amending the current MOU to add DDOT as a signatory, and reallocating the current DPW responsibilities between DPW and DDOT. The current Permit expires in April 2003, and the new Permit may

also require significant revision of the MOU to ensure that regulatory requirements are allocated and coordinated among the signatory agencies.

With these two points in mind, the Panel recommends revising the MOU after issuance of the new Permit to encompass revised/additional Permit requirements, and to address the separation of DPW and DDOT, and the allocation of the current DPW responsibilities between the two agencies. Additionally, other storm water management activities not currently incorporated in the MOU are being conducted at Federal and District facilities with discharge to the MS4 and do not have a separate NPDES discharge permit. These activities may be examined and incorporated into this MOU or a separate, similar agreement.

By involving these facilities, which control large areas of property, and/or are currently involved in storm water management activities in the District, Permit requirements can be more efficiently accomplished.

3.0 STORMWATER FEE STRUCTURE AND RATE

The Storm Water Permit Compliance act of 2000 established a storm water fee to fund MS4 Permit requirements above and beyond existing storm water management activities conducted by the District. WASA collects the fee and distributes funds to the agencies responsible for complying with the Permit in accordance with established budgets

WASA began billing and collecting the storm water fee on behalf of the District in July 2001 as a line item on customers' quarterly water and sewer bills. WASA has collected approximately $1.9 million from residential and commercial/industrial customers in the three fiscal quarters completed to date. Collection from Federal facilities is scheduled to begin in FY 2003, with a two-year lag from billing cycle to payment (FY 2001 billings will be collected in FY 2003). Revenues from Federal water and sewer customers are expected to be approximately $0.6 million per year, bringing the estimated yearly revenue from the current fee structure and rate to $3.1 million per year.

Fees are collected as a flat-fee from single-family residential customers, and as a percentage of water usage for multi-family and commercial/industrial/Federal/municipal customers. The current rates are as follows:

Single Family	$1.75 per quarter/year
Multi-Family	1.4% of the water rate/ccf (hundred cubic feet)
Commercial/Industrial /Federal/Municipal	2% of the water rate/ccf (hundred cubic feet)

The above rates were established by the Council after an analysis of the expected funding needs to meet the requirements of the first three-year permit. A public hearing was conducted and comments received from members of the public and concerned organizations were taken under consideration during the development of the rate and fee structure. After analysis and consideration, the flat-rate fee structure was selected to simplify the introduction of the fee, and to begin collecting the funding required to meet the Permit requirements.

3.1 Sufficiency and Equitability of the Current Fee Structure and Rate

To date, the money collected from the storm water fee has been sufficient to fund the activities conducted by the District under the MS4 Permit. The Panel, however, feels that the current fee structure should be re-evaluated because the current fee structure does not

consider the relationship between impervious area and resulting storm water runoff from a given property in calculating the storm water fee to be paid by the property owner.

Sufficiency

The current fee structure and rate have been adequate to support the MS4 permit requirements to date.

Equitability

Clearly, there are considerable opportunities to enhance the current rate structure in view of the fact that residential customers pay a flat fee regardless of the quantity or quality of storm water runoff from their property. Similarly, the multi-family/commercial rates charged as a percentage of water usage are inequitable because they do not relate to storm water runoff from the property. With the initial fee a relatively small amount to most users, the lack of a relationship between runoff and cost has limited impact. However, if the fee is increased in future years this issue will have greater potential significance.

Commercial properties such as parking lots, use little or no water, but have a large impervious area and high potential for storm water and pollutant runoff. Conversely, a commercial business that has high water usage, but a small impervious area, pays a larger fee due to the volume of water usage (e.g., a restaurant in a high-rise building).

Additionally, there is no mechanism in the current fee structure to apply a credit for properties that have developed internal storm water management practices that effectively treat storm water prior to discharge from the property. The Panel recommends consideration of such a mechanism in whatever rate structure is adopted for the future.

3.2 Sufficiency and Equitability of the Future Fee Structure and Rate

Sufficiency

Based on the experience of other jurisdictions with MS4 permits, the second permit is expected to demand additional monitoring and storm water control programs. If that is the case with the District's second permit, it is anticipated that funds collected at the current rate may not be sufficient to fund the required activities.

An evaluation of the additional financial needs will be conducted in the context of the next MS4 NPDES permit. This may result in a determination that additional funds will be

needed to comply with the regulatory requirements. At that time, there may be a need for re-evaluating and increasing the stormwater fee.

Equitability

As noted previously, increase in the current flat-fee rate structure could increase concerns about equitability of the fee. The Panel recommends that the District plan and execute a study of alternative rate structures utilized by other municipalities and jurisdictions with storm water fees in the Mid-Atlantic region, and across the country.

Alternative Fee and Rate Structure Study

The Panel has conducted a preliminary evaluation of storm water fee and rate structures in jurisdictions surrounding the District of Columbia in Virginia and Maryland, as well as selected others around the country. Jurisdictions typically depend on stormwater fees to pay for permit-related stormwater expenses not covered by other revenue sources. Appendix B provides a summary of the jurisdictions surveyed, the rate and fee structure, and the average single-family fee per year. Both rural and urban jurisdictions are included in the table to provide the full range of rates and fee structures currently in use. Note that the table provides population density for each jurisdiction as a measure of the development density. The District of Columbia, being highly urban, has the highest population density of the jurisdictions listed.

Basis of Methodology

The majority of the jurisdictions surveyed use the Equivalent Residential Units (ERU) methodology. This method determines the average impervious area for zones/categories of residential units, including condominiums, apartments, townhomes, etc. The number of parcels and impervious areas for each zone/category is usually estimated using GIS mapping. The average impervious area for each zone/category is then calculated to determine the ERU unit.

For each ERU unit, it is determined that a certain amount of stormwater drains off the impervious surfaces in that area and into the stormwater drainage system. The number of ERUs attributable to each lot is determined based on the size and impervious surface area of the lot. Areas that are completely undeveloped (i.e., undisturbed) are usually considered as having zero ERUs, and thus are assessed no stormwater fee.

The ERU unit varies for the jurisdictions surveyed, but it is approximately equal to 2,000 square feet of impervious surface, on average, for the jurisdictions surrounding the District. The ERU unit rate is based upon projected costs to operate, maintain, and improve stormwater systems, and locally ranges between $20 and $30 per ERU unit. Approximately half of the local jurisdictions investigated charge storm water fees to federal properties.

The jurisdictions surveyed vary by land area, population, and land use. The District of Columbia has a land area of approximately 61 square miles. The population is approximately 572,100 (approximately 9,400 persons per square mile). The Federal and local government own approximately 42% of the land, with the balance being real property ownership (approximately 58%). Jurisdictions with a similar land area as the District are Baltimore City, Maryland, and Norfolk and Newport News, Virginia.

Practices and Procedures

During this survey, specific practices of interest in other jurisdictions were noted and include:

- In Broken Arrow, Oklahoma, new stormwater utility bill accounts were created for properties that previously did not receive a water and sewer bill.
- In Parker Colorado, a lien would be placed on the property for the outstanding fee amount, plus a surcharge for late payment if a stormwater fee is not paid. The delinquent amount would then be collected with property taxes. The appeal processes are made available in questions of impervious areas. A property owner may request a review of the calculation of imperviousness. When requested, a site visit may be conducted to verify which areas are impervious and if the impervious amount needs to be corrected, the owner would be re-billed or credited for the adjusted amount.
- In Hudson, New York, property owners who have individual drainage systems that allow them to manage storm drainage without contributing to the City's stormwater system are not billed since they are completely independent of the City.
- In Montgomery County, Maryland, in cases where non-residential property has its own stormwater management system that bypasses downstream residential development, the owner of the property is responsible for maintenance and subsequently not charged a fee.

- In Longview, Washington, exemptions are provided to low-income seniors and low-income disabled customers who meet the City's low-income qualifications.

Other Study Costs and Timelines

Montgomery County, Maryland, began implementation of a storm water fee called the Water Quality Protection Charge, on July 1, 2002. In preparing the fee structure there were two study phases, which comprised thirteen tasks. The first study phase was to establish a charge rate. The County decided on the ERU method. It took three months to complete information input of the imperviousness and the property types for the County GIS map and to calculate the rate. This relatively short timeframe was due to the completeness of the existing County GIS data information, with approximately half of the information already available. The second phase of the Montgomery County study involved setting up the system and implementing the process. This was a challenging eighteen months that involved legislative and other political processes. The overall costs for this study were approximately $1 million dollars, equally divided between the two phases.

Baltimore City, Maryland, is currently studying a stormwater fee and is utilizing the ERU method. It had completed the first study phase that has taken nine months to update information for Baltimore City GIS map and establish a unit rate. This phase of work cost approximately $380,000. The city is currently confronting the challenge of the second implementation phase.

The Panel notes that the District has already established a storm water fee and collection system, and thus has completed many of the second phase tasks conducted or being conducted by Baltimore and Montgomery County.

4.0 FINDINGS AND RECOMMENDATIONS

Following anticipated issuance of a new MS4 NPDES permit in April 2003 and completion of an evaluation, the need for additional storm water management programs and capital construction projects to control pollutants in storm water discharge will be determined. The current rate structure is deemed inequitable for both single-family residential properties and multi-family/commercial/industrial/municipal/federal properties, and may be insufficient to meet the potential increase in costs expected with the new permit.

The Advisory Panel recommends that a study be performed to evaluate the equitability of the current rate structure. The study should evaluate both impervious area based rate structures and other rate structures in use by jurisdictions in the Mid-Atlantic region and around the country. The study should be completed by June 2003 in order to implement the new rate and fee structure by the end of FY 2004. Based on the experience of other municipalities, this study may take up to nine months, thus it would need to start no later than December 2002.

In conducting this study, the Council should consider a number of issues, including:

- the impervious area approach may not be an "either/or" choice. An impervious area based structure could be employed for certain land use classifications. Or the existing fee system might be retained, with additional fees levied on an impervious area basis as additional funding is required to comply with future permit requirements.

- streets, alleys, and sidewalks that are not in the current fee structure represent a substantial portion of the impervious area in the District. Methods to collect fees more directly from those who use/benefit from these impervious areas should be considered.

- economic incentives for individual properties may be implemented regardless of the fee structure in place.

- regulatory issues specific to storm water management and low impact development (LID) may need to be addressed together with changes in the rate structure.

- any alternative fee structure should be evaluated in conjunction with the on-going rate study being conducted as part of the combined sewer long term control plan.

- the cost, time, and data required to develop and implement an alternative fee structure must be considered as part of the evaluation process.

The completion of the study should at least provide the following outcomes:

1. The study will determine whether a rate based on the ERU method is equitable, technically supported, and defensible. This would require updating the District's GIS mapping to include property types, impervious area, and Federal lands. Some Federal properties, such as Bolling Air Force Base, are independent NPDES permittees. Sites such as these should be identified, and activities coordinated with them, since they would have their own funding source.

2. If it is determined during the permit application and negotiation process that additional funding may be required to meet the new permit requirements, the study can be easily expanded to include calculating the rate necessary to collect the required funding. The funding requirements should address costs including but not limited to capital improvements, maintenance, monitoring, personnel requirements, equipment, consulting services, public education, administration, and implementation costs. These costs should be projected at least through the life of the renewed permit (expected to be five years) in order to assess the long-term funding needs.

3. The study will determine whether: a) the storm water fee should remain with the water and sewer bill collection; b) this collection method has been successful; and c) the cost for revising the stormwater rate and for making adjustments such as adding new properties is justified. New storm water fee accounts may be considered for some properties that do not currently receive water and sewer bills (e.g., parking lots). These properties may be large contributors to the fund. Low-income residents may be considered for exemptions similar to other District programs.

4. The fee structure should allow for implementing credits for properties with on-site stormwater facilities. The study will recommend whether to implement a credit program immediately or at some future date.

5. Education and improvement of the public's knowledge and understanding of the benefits of stormwater pollution prevention would enhance their acceptance of the stormwater fee. The study should evaluate and recommend public outreach and education programs to be implemented concurrent with the new rate and fee structure.

Appendix A. Transcript of August 27, 2002 Public Hearing and Written Testimony from Citizens

Transcript of August 27, 2002 Public Hearing

Written Testimony from Citizens

Appendix B. December 2000 Memorandum of Understanding Implementation Matrix

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
A-1	Compile and analyze information on pollution sources since Nov. 1998: MS4 outfalls (identification and mapping) impact to MS4 due to land use, population, structural controls, landfills, publicly owned lands, and industries. Submit information in Annual Report.	ALL	Apr. 2002	Part II
A-2	Prepare first annual review.	ALL	Apr. 2001	Part III - A
A-3	Implement outfall monitoring.	WASA/DOH	Apr. 2001	Part III - A
A-4	Prepare Annual Report.	ALL	Apr. 2002	Part III - A
A-5	Prepare annual Implementation Plan.	ALL	Apr. 2002	Part III - A
A-6	Prepare Upgraded Storm Water Management Plan.	ALL	Oct. 2002	Part III - A
A-7	Implement Upgraded Storm Water Management Plan.	ALL	6 months following EPA approval	Part III - A
A-8	Evaluate the location, size and number of MS4 retrofits necessary to meet CWA.	WASA/DOH	Apr. 2002	Part III - B

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
B-1	Develop and implement improvements and modifications to SWMP practices to reduce pollutant loads: - Legal Authority - Characterization Data - Application Requirements - Assessment of Controls - Structural Controls - Areas of new or significant development - Roadways - Flood Control Projects - Pesticide, Herbicide, and Fertilizer application - Illicit discharges and improper disposal - Industrial and high risk runoff - Priority Industrial Facilities - Municipal Waste Sites - Spills - Infiltration of seepage - Construction site runoff - Public Education - Monitoring	ALL	Apr. 2002	Part III - B

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Storm Water Management Plan for Commercial, Residential and Government Areas			
C-1	Continue budgeted roadway, street and highway maintenance operations (11/4/98).	DPW	Ongoing	Part III - 1
C-2	Management Plan for Commercial, Residential and Government properties shall consider: - functional landscapes - low impact development - coordinate Street sweeping & catch basin cleaning - coordinate solid waste services, incl. Leaf collection, - preventive maintenance inspections of storm water facilities, - rain leader disconnection program. - public education on pet waste, fertilizer, etc. - computer models - performance measures - strengthen erosion control program for new construction	ALL DOH DOH/DPW DPW/WASA DPW WASA/DOH DOH DOH ALL ALL DOH	Apr. 2002	Part III - 1
C-3	Control storm water pollution from Federal and District government properties.	DOH	Apr. 2002	Part III - 1

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Storm Water Management Plan for Industrial Facilities			Part III - 2
D-1	Update and maintain industrial facilities database.	DOH	Unknown	Part III - 2
D-2	Perform/provide on-site assistance/inspections.	DOH		Part III - 2
D-3	Perform outreach focused on stormwater P2 plan development and NPDES compliance (use wet weather screening to target).	DOH		Part III - 2
D-4	Develop procedures govern investigations of facilities.	DOH	Apr. 2002	Part III - 2
D-5	Establish BMP for reducing loads to extent necessary.	DOH		Part III - 2
D-6	Monitor and control pollutants from solid waste, fleet maintenance and other facilities.	DPW	Unknown	Part III - 2
D-7	Develop and implement a wet weather-screening program.	WASA/DOH	Unknown	Part III - 2
D-8	Develop a program to prevent, contain and respond to spills.	DOH	Apr. 2002	Part III - 2
D-9	Identify facilities with high risk runoff and parameters of concern	DOH	Unknown	Part III - 2
D-10	Estimate loadings from industries in each sewershed.	DOH	Unknown	Part III - 2
D-11	Prohibit illicit discharges, control spills and prohibit dumping.	DOH/WASA	Unknown	Part III - 2
D-12	Report on implementation of Industrial Facilities Control Plan	DOH	Apr. 2002	Part III - 2

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Storm Water Management Plan for Construction Sites			
E-1	Continue existing permitting programs and evaluate effectiveness.	DOH	Ongoing	Part III - 3
E-2	Conduct construction site inspections.	DOH	Ongoing	Part III - 3
E-3	Submit inspection and enforcement procedures to EPA for review and approval.	DOH	Apr. 2002	Part III - 3
E-4	Provide public education and guidance materials to construction site management programs.	DOH	Unknown	Part III - 3
E-5	Report on implementation of construction site management programs.	DOH	Apr. 2002	Part III - 3
E-6	Operate and maintain streets to reduce pollution, maintain erosion controls.	DPW/DOT	Ongoing	Part III - 3
E-7	Minimize soil-disturbing activities, re-vegetate.	DPW/DOT	Ongoing	Part III - 3
E-8	Prevent spills, control sites and storage facilities.	DPW/DOT	Ongoing	Part III - 3
E-9	Strengthen criteria and procedures for waivers, develop enforcement strategy, and enforce strategy.	DOH	Unknown	Part III - 3
E-10	Expand inspections; investigate cumulative impacts.	DOH	Unknown	Part III - 3
E-11	Consider/require storm water retrofits for redevelopment and road rebuilding.	DOH DPW/DOT	Unknown	Part III - 3
E-12	Assure that adopted storm water impact quantification procedures are performed in early environ. Review in zoning process.	DOH	Unknown	Part III - 3
E-13	Develop a strategy to encourage use of low impact development practices are performed in early environ. Review in zoning process.	DOH		Part III - 3
E-14	Establish and implement written enforcement strategy and perform enforcement actions.	DOH		Part III - 3
E-15	Expand staff to inspect installation and maintenance of storm water erosion and sediment control at (commercial, residential, road and development) areas.	DOH		Part III - 3
E-16	Estimate loading from ( ) areas and determine necessary BMPs.	DOH		Part III - 3
E-17	Adopt and implement procedures in construction related activities that reduce storm water runoff and prevent storm water pollution.	DOH		Part III - 3
E-18	Develop strategies to reduce traffic-related pollution.	DPW/DOT		Part III - 3

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Storm Water Management Plan for Construction Sites			
F-1	Notify Historic Preservation Officer of any new construction, demolition or ground disturbing activity (develop alternate procedures).	ALL	Unknown	Part VII - M
F-2	Notify Fish and Wildlife Service of any discharge, construction or other activity, which may impact a threatened or endangered species.	ALL	Unknown	Part VII - N
F-3	Encourage wider use of low impact development and other innovative methods.	DOH	Unknown	Part III - 3

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Flood Control Projects			Part III - 4
G-1	Assess flood control projects for impact on storm water quality.	DOH	Apr. 2002	Part III - 4
G-2	Develop pollution controls for existing flood controls.	DOH	Apr. 2002	Part III - 4
G-3	Assess development projects in the flood plain for water quality impact (impervious surface).	DOH	Unknown	Part III - 4
G-4	Determine feasibility of retrofitting flood control devices.	DOH	Unknown	Part III - 4
G-5	Collect data on amount of impervious surface in flood plain for all proposed development.	DOH	Feb. 2000	Part III - 4
G-6	Collect similar data for existing development, prioritize developed and undeveloped areas.	DOH	Apr. 2002	Part III - 4
G-7	Prepare report summarizing findings and activities.	DOH	Apr. 2002	Part III - 4

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Monitor and control pollutants from municipal landfills and other municipal waste facilities.			Part III - 5
H-1	Develop and implement a program to monitor and reduce pollutants in storm water from solid waste facilities, equipment storage yards and fleet maintenance facilities. - monitor, inspect and evaluate sites, - identify areas with poor water quality and correct (improve).	DPW	Apr. 2002	Part III - 5
H-2	Report in annual plan how activities meet Clean Water Act requirements and results of activities such as initial monitoring, control implementation and priority setting.	DPW	Apr. 2002	Part III - 5

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Monitor and Control Pollutants from Hazardous Waste Sites			Part III - 6
I-1	Identify industrial sites, develop procedures to map facilities.	DOH	Permit expiration Date	Part III - 6
I-2	Develop procedures to govern investigations.	DOH	Apr. 2002	Part III - 6
I-3	Describe how these procedures will meet DWA requirements in Annual Report.	DOH	Apr. 2002	Part III - 6

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Monitor and Control Pesticide, Herbicide and Fertilizer Application			Part III - 7
J-1	Control application of pesticides, herbicides and fertilizers.	DOH	Unknown	Part III - 7
J-2	Implement programs to encourage the reduction of these pollutants.	DOH	Unknown	Part III - 7
J-3	Prepare a report on implementation of these procedures and how they will meet CWA requirements.	DOH	Unknown	Part III - 7
J-4	Perform a screening characterization to determine the sources of pesticides, herbicides and fertilizer.	DOH	Apr. 2002	Part III - 7
J-5	Develop a priority system of controls and plan to reduce these pollutants.	DOH	Jan-01	Part III - 7

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Develop snow management plan and investigate deicing alternatives			
K-1	Evaluate use of chemical deicers, salt, sand and mixtures to minimize impact on water quality.	DPW	Apr. 2001	Part III - 8
K-2	Prepare a report of preliminary evaluation findings.	DPW	Apr. 2001	Part III - 8
K-3	Prepare and submit compliance schedule for implementing deicing study results.	DPW	Prior to Permit	Part III - 8
K-4	Establish a program to ensure excessive snow and ice control materials do not enter waterways.	DPW	Apr. 2001	Part III - 9
K-5	Report on progress to reduce pollution from snow and ice control program.	DPW	Apr. 2001	Part III - 9
K-6	Avoid dumping snow in areas adjacent to waterways and wetlands.	DPW	Unknown	Part III - 9
K-7	Implement snow removal plan.	DPW	Apr. 2003	Part III - 9

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Develop management plan to detect and remove illicit discharges Report in Annual Report			
L-1	Develop a program to prevent, detect and remove illicit discharges.	DOH/WASA	Unknown	Part III - 10
L-2	Develop a program to reduce discharge of floatables.	WASA	Ongoing	Part III - 10
L-3	Prohibit the disposal of motor vehicle fluids, household hazardous waste, grass clippings, leaves, and animal waste. Report in Annual Report.	Corp.	Ongoing	Part III - 10
L-4	Develop program to collect and recycle or dispose of motor vehicle fluids and household hazardous waste.	DPW/WASA	Ongoing	Part III - 10
L-5	Develop an enforcement plan.	DOH	Unknown	Part III - 10
L-6	Develop inspection, plan, surveillance and monitoring procedures, incl. Schedule and resources and inspection criteria.	DOH	Apr. 2001	Part III - 10
L-7	Develop procedures to prevent, contain and respond to spills.	DOH	Apr. 2001	Part III - 10
L-8	Train appropriate personnel on spill prevention and response.	DOH	Apr. 2001	Part III - 10

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Develop an enforcement plan			Part III - 11
M-1	Develop an enforcement plan to implement permit requirements.	ALL	Apr. 2001	Part III - 11
M-2	Describe enforcement activities and resources.	DOH	Apr. 2001	Part III - 11
M-3	List all violations and enforcement actions to assess program effectiveness.	DOH	Apr. 2001	Part III - 11

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Develop a public education program			Part III - 12
N-1	Household hazardous waste education and outreach.	DPW/DOH	Apr. 2001	Part III - 12
N-2	Residential and commercial pesticide, herbicide and fertilizer application education and outreach.	DOH	Apr. 2001	Part III - 12
N-3	Industrial facilities education and outreach.	DOH	Apr. 2001	Part III - 12
N-4	Construction site operators' education and outreach.	DOH	Apr. 2001	Part III - 12
N-5	Explain how these programs will reduce pollution to meet requirements of CWA. Report in Annual Report.	DOH	Apr. 2001	Part III - 12
N-6	Maintain a file of public education materials at the DC Public Library.	DOH	Apr. 2001	Part III - 12

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Administrative Requirements			Part III - C
O-1	Conduct annual review of program effectiveness. - Compare performance with goals - Review implementation and compliance - Review monitoring data - Assess effectiveness of controls - Determine required program improvements - Describe inspections, public education activities violations and enforcement actions, model results - Water quality improvements, modeling results	ALL	Apr. 2001	Part III - C
O-2	Develop a schedule to achieve full permit compliance within 3 years of permit effective date.	ALL	Apr. 2001	Part III - C
O-3	Prepare fiscal needs assessment each year.	ALL	Apr. 2001	Part III - C
O-4	Operate and maintain structural and non-structural hydraulic controls.		Ongoing	Part III - C
O-5	Prepare Annual Report: - Cost/benefit and affordability analysis - Methodology to assess program effectiveness - Annual budget and expenditures - Evaluate commitments from past year - Make commitments for next year - Summary of monitoring data - Summary of annual review	ALL	Apr. 2002	Part III - C
O-6	Prepare and submit Annual Implementation Plan: - Planned activities - Budget - Fiscal analysis - Cost/benefit and affordability analysis	ALL	Apr. 2002	Part III - E
O-7	Revise/Update Storm Water Management Plan.	ALL	Jun-02	Part III - E
O-8	Ensure adequate legal authority exists.	Corp. Counsel	Unknown	Part III - E

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Monitoring Requirements			Part IV - A
P-1	Develop and implement wet weather monitoring program and sampling plan.	DOH	Apr. 2001	Part IV - A
P-2	Estimate annual cumulative loadings from NS4.	DOH		Part IV - A
P-3	Estimate and report event mean concentrations and seasonal pollutants from major outfalls.	DOH		Part IV - A
P-4	Identify and priorities portions of MS4 requiring additional controls.	DOH		Part IV - A
P-5	Identify water quality improvement or degradation.	DOH		Part IV - A
P-6	Representative outfall monitoring.	DOH	Apr. 2001	Part IV - 4.1
P-7	Retain monitoring data.	DOH	Unknown	
P-8	Report monitoring results.	DOH	Unknown	
P-9	Continue ongoing dry weather screening program.	DOH	Ongoing	Part IV - B
P-10	Locate sources and eliminate illicit connections.	DOH	Ongoing	Part IV - B.3
P-11	Report progress on developing a GIS based storm water computer model.	DOH	Apr. 2001	Part V

TASK #	TASK	RESPONS. AGENCY	DUE DATE	PERMIT SEC.
	Hickey Run TMDL			Part VI
Q-1	Conduct storm water monitoring of Mickey Run.	DOH	Apr. 2001	Part VI
Q-2	Develop programs to reduce oil and grease loadings to 11.9 lbs. per day.	ALL	Unknown	Part VI
Q-3	Provide written explanation for any exceedances.	DOH	Unknown	Part VI

TOTALS

Appendix C. Storm Water Fee Survey Results

APPENDIX C. STORMWATER FEE SURVEY

JURISDICTION	LAND AREA	POPULATION DENSITY	UNIT RATE	BASE METHOD	UNIT	RATE ZONES (cost per unit or % of water/sewer fee)				FUNDING USE	REMARKS
	(sq.mi.)	(persons per sq. mi.)	per unit / year		Equivalent (sf)	Single Family	Multi-Family	Commercial & Industrial	Municipal		
DISTRICT OF COLUMBIA	61	9,378	N/A	per CCF (100 cubic feet)	N/A	$7.00	1.40%	2.00%	2.00%	Administrative	--
VIRGINIA											
Arlington	26	7,290	$26.04	ERU	2,762	$26.04	$24.74 per unit	$67.70	None	the needs for FY99	Currently not implement. The rate study was a graduate project.
Chesapeake	341	584	$21.00	ERU	2,112	$21.00	$21.00 per unit	*	Yes *	all permit requirements	--
Hampton	52	2,816	$30.00	ERU	2,429	$30.00	$30.00 per unit	*	No (Note 2)	maintenance and special projects	--
Newport News	68	2,649	$27.60	ERU	1,777	$27.60	$11.59 per unit	*	Yes *, except VDOT	Storm Water Management programs	Structures of 2-2 stories are considered Multi-Family, and higher structures are treated as a commercial.
Norfolk	54	4,341	$59.86	no ERU *	N/A	$59.86	$59.86 per unit	$0.023 per impervious sf.	No (Note 1)	all permit requirements	Apartments and condo are billed as non-residential.
Prince William Co.	338	830	$18.00	ERU	2,059	$18.00	$13.50 per unit	*	Yes *, except Federal	--	Multi-family is included apartments and townhouses/condos.
MARYLAND											
Baltimore City	81	8,039	--	ERU	--	--	--	--	--	--	Currently establishing this fee; however, 50% chance of implementation.
Charles Co.	461	262	$2.00 (Note 2)	N/A	N/A	Note 2	Note 2	Note 2	Note 3	5-year term projects; it does not cover the administrative.	Combination of Environmental Service and New Residential Lot Fees

APPENDIX C. STORMWATER FEE SURVEY

JURISDICTION	LAND AREA	POPULATION DENSITY	UNIT RATE	BASE METHOD	UNIT	RATE ZONES (cost per unit or % of water/sewer fee)				FUNDING USE	REMARKS
	(sq.mi.)	(persons per sq. mi.)	per unit / year		Equivalent (sf)	Single Family	Multi-Family	Commercial & Industrial	Municipal		
Takoma Park	2	8,650	$28.68	ERU	1,228	$28.68	*	*	Yes *, except the local	projects and administrative	Established in 1997
Montgomery Co.	461	1,761	$12.75	ERU	2,406	$12.75 ($4.25 for TH)	*	*	* (Note 4)	Storm water maintenance including HOA and some administration costs; no new projects.	Water Quality Protection Charge (tax); effective July 1, 2002. (Note 5)
OTHERS											
Broken Arrow, Oklahoma	75	998	$12.00	ESU	2,650	$12.00	**	**	--	Stormwater monitoring	Effective on May 1, 2002. New account will be created for properties that currently do not receive a utility bill.
Cincinnati, Ohio	75	4,302	$2.21	ERU	--	$26.52 - $37.13	--	*	--	Rehability over 100 years old infrastructure	Established in 1985
Hudson, Ohio	25	891	$36.00	ERU	--	$36.00	1	--	--	Flood prevention, and repairing stream banks and infrastructure.	New utility accounts established for those owners who do not currently receive the bills.
Pensacola, Florida	89	4,629	$48.00	ESU	2,575	**	**	**	--	Operations and maintenance of stormwater facilities	Stormwater Utility Fee
Parker, Colorado	14	2,028	--	average impervious	--	$60.00	$60.00 per unit	per impervious	per impervious	Construction of drainage improvements,	Stormwater Utility Fee established in 1999. If a fee not paid, a lien will

APPENDIX C. STORMWATER FEE SURVEY

JURISDICTION	LAND AREA	POPULATION DENSITY	UNIT RATE	BASE METHOD	UNIT	RATE ZONES (cost per unit or % of water/sewer fee)				FUNDING USE	REMARKS
	(sq.mi.)	(persons per sq. mi.)	per unit / year		Equivalent (sf)	Single Family	Multi-Family	Commercial & Industrial	Municipal		
				area				area	area	maintenance, monitoring, and planning.	be placed on the property for the amount plus a surcharge.
Portland, Oregon	130	4,125	--	--	N/A	$131.64	$131.64 per unit	$60 / 1,000 sf	$60 / 1,000 sf	Construction of sewer system facilities to reduce combined sewer overflows	Established in July 1999.
Longview, Washington	12	2,888	$12.00	ERDU	2,500	$12.00	$12.00 per unit	***	***	Support comprehensive Storm Water Management Plan, maintenance, and public education.	Exemptions will include low-income seniors and disable customers. Appeal process is available in questions of impervious area.
Tacoma, Washington	49	3,950	$111.48	ERDU	6,000	$111.48	$111.48 per unit	***	***	--	--

-- unknown information or data

* ERU - Equivalent Resident Unit is based on the average impervious area (1 ERU = X sf). Townhouses and condos are considered as Multi-Family. Apartment is considered with Commercial & Industrial.

** ESU - Equivalent Service Unit or Equivalent Stormwater Unit. This is also based on imperviousness. (1 ESU = X sf)

*** ERDU - (Equivalent Resident Dwelling Unit?) is based on the average area of one dwelling unit. Others properties would be based on impervious area per ERDU area unit.

NOTES:

1. Local and VDOT properties are not charged, but Federal properties are charged.
2. (1)Environmental Service Fee - $2 per improved lot, or (2) New Residential Lot - $84 per recordation
3. Indian Head Naval Base is responsible for its own NPDES Permit for the first time in 2002.
4. Federal properties are exempted, but non-profits properties are charged. Some other non-residential properties are exempted if their SWM facilities' outfalls by-pass downstream residents and they responsible their own maintenance.
5. Cities of Takoma Park, Chevy Chase, Rockville, and Gaithersburg are exempt since they have their own SWM programs, except for Chevy Chase. Chevy Chase does not have SWM facilities except for storm drain systems.