J. Bekeley Public Comments

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
1	Sect 1.2, page 7 - Postential DC liability to other EPA issued permits discharging to the DC MS4.	This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate NPDES permits.	This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate NPDES permits that comply with the requirements of this permit.	If EPA permits discharge to the MS4 that cause violation of the MS4 permit, the fine is on DC. Addiing the proposed language will ensure that MS4 violation will not occur on account of
2	1.3.1	The Permittee, as defined herein, shall effectively prohibit non-stormwater discharges into the MS4, except to the extent such discharges are regulated with an NPDES permit.	The Permittee, as defined herein, shall effectively prohibit non-stormwater discharges into the MS4, except to the extent such discharges are regulated with an NPDES permit that comply with the requirements of this permit.	same as 1
3	1.3.2	This permit does not authorize the discharge of any pollutant from the MS4 which arises from or is based on any existing waivers and exemptions," that may otherwise apply and are not consistent with the Federal Clean Water Act and other pertinent guidance, policies, and regulations.	This permit does not authorize the discharge of any pollutant from the MS4 which arises from or is based on any existing waivers and exemptions," that may otherwise apply and are not consistent with the Federal Clean Water Act and other pertinent guidance, policies, and regulations	Historically, it is federal agencies who have enjoyed waivers in DC. DC should ask EPA to require and issue to all federal facilities in DC, weather they discharge to the DC MS4 or directly to a DC waterbody, their own individual NPDES permits. Delaware has done so. That way DC will avoid any existing (or percieved) federal exepmtion and assure that no pollutant from federal facilities enter DC's MS4s and water bodies.
4	1.3.2	This narrative prohibition on the applicability of such waivers and exemptions extends to any activity that would otherwise be authorized under District law, regulations or ordinance but which impedes the reduction or control of pollutants through the use of stormwater control measures and/or prevents compliance with the narrative /numeric effluent limits of this Permit.	This narrative prohibition on the applicability of such waivers and exemptions extends to any activity that would otherwise be authorized under District law, regulations or ordinance but which, upon demonstration by the Administrator, is found to impedes the reduction or control of pollutants through the use of stormwater control measures and/or prevents compliance with the narrative /numeric effluent limits of this Permit.	This is the most egregious section of the permit. It puts a discharge permit above DC's laws, regulations and ordinances
5	2.1	Seactions 2., 3., 4., and 5.	Delete sections 1 thru 5 of 2.1.	DC has adequately described its legal authority in its application to the EPA. It goes without saying that DC will enforce its laws and regulations.

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
6	2.3	2.3 Stormwater Management Program Administration/Permittee Responsibilities	Delete sections 1 and 2 of 2.3. Keep section 3. as amended here. ~~3.~~ Within 180 days of permit issuance, the Permittee shall complete an assessment of additional governmental agencies and departments, non-governmental organizations, ~~watershed groups or other community organizations~~ in the District ~~and adjacent states~~ to partner with to administer required elements of the Permit. Intra- and inter-agency agreements between relevant governmental and nongovernmental organizations ~~shall~~ to be established to ensure successful coordination and implementation of stormwater management activities in accordance with the requirements of this Permit shall be outlined in the assessment. ~~Additional government and nongovernmental organizations and programs to consider include; land use planning, Brownfields redevelopment, fire department, building and safety, public health, parks and recreation, and~~ In addition, federal ~~departments and~~ agencies, Including but not limited to, the National Park Service, Department of Agriculture, Department of Defense, and General Services Administration, responsible for facilities in the District, adjacent jurisdictions, and regional entities shall be identified for coordination by the EPA.	In administrative matters, federal regulations only specify in general terms 1) the signatories to permit applications and reports, and 2) the elements for storm water management programs . Therefore, this draft permit should only contain those areas that are required under federal regulations. Text regarding signatories is contained in DC's SWMP, and storm water programs is addressed in Section 4 of this draft permit. Beyond that, spelling out who should do what is tantamount to micro-management and prevents DC from any flexibility of running its storm water programs in an effective manner. DC, in accordance to the activity outlined in the suggested language, can set up its own administration the best way it sees fit. Those items mentioned in sections 1 and 2 of the draft permit are good and should be mentioned in DC's document required under the proposed language. The suggested language also includes EPA's role in facilitating coordination with federal and regional agencies.
7	3. 1	For purposes of this section, "significant changes" are changes that have the potential to revise, enhance, modify or otherwise affect the physical, legal, institutional, or administrative characteristics of the above-listed potential pollution sources. This information shall be submitted in each of the Annual Reports submitted to EPA pursuant to the procedures in Part 6.2 herein. For the Stormwater Model, analysis of data for these pollution sources shall be reported according to Part 7 herein.	For purposes of this section, "significant changes" are changes that have the potential to revise, enhance, modify or otherwise affect the physical, legal, institutional, or administrative characteristics of the DC MS4 due to changes in the above-listed potential pollution sources. This information shall be submitted in each of the Annual Reports submitted to EPA pursuant to the procedures in Part 6.2 herein. ~~For the Stormwater Model, analysis of data for these pollution sources shall be reported according~~ to ~~Part 7 herein.~~	Self explanatory.
8	3.2	To the extent not already otherwise reported, no later than 18 months after issuance of this Permit, the Permittee shall provide an up-to-date inventory (organized by watershed) of all outfalls that discharge through the MS4 including any changes to the identification and mapping of existing permitted outfalls. Such inventory shall include, but not be limited to, the name and address, and a description (such as SIC code) which best reflects the principal products or services provided by each facility which may discharge to the MS4.	To the extent not already otherwise reported, no later than 18 months after issuance of this Permit, the Permittee shall provide an up-to-date inventory (organized by watershed) of all outfalls that discharge through the MS4 including any changes to the identification and mapping of existing permitted outfalls. ~~Such inventory shall include, but not be limited to, the name and address, and a description (such as SIC code) which best reflects the principal products or services provided by each facility which may discharge to the MS4~~.	Tha the name, address, and description of products of facilities is not a federal requirement. 1) the work is massive, and 2) this is not a wise idea ... from source water assessment experience ...

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
9	3.3	Entire section 3.3 under "Addressing Potential Pollutant Sources"	Delete entire section 3.3 under "Addressing Potential Pollutant Sources"	Section 3 deals with identifying sources. It does not deal with addressing them (see also 40 CFR 122.26(d)(1)(iii)). In addition, the content of the paragraph under this section 3 is fundamentally flawed. An NPDES Permit is issued "**for the discharge of ``pollutants'' from any ``point source'' into ``waters of the United States.''**" By the sentence "Controls shall be designed to prevent and restrict pollutants from coming into contact with stormwater ..." EPA is imposing control on the "internal waste stream" without bases (or demonstrated discharge violation). This has implication to other NPDES permits. For example, how does a POTW that treat domestic sewage design controls that prevent and restrict pollutants from coming into contact with the discharge delivered to its facility?
10	4	The Permittee shall continue to implement, assess and upgrade the controls, procedures and management practices, described in Part 4 herein and in the current Upgraded SWMP dated February 19, 2009, all requirements of which are incorporated herein, in order to reduce or eliminate the pollutant load, and to protect or restore water quality standards and meet the requirements of the Clean Water Act, its implementing regulations, and relevant District of Columbia laws, regulations and ordinances. The Stormwater Management Program is comprised of all requirements in this Permit, including the program elements listed in Table 1 below. The set of BMPs specified in the Permit can be adapted as opportunities change, as long as interim compliance deadlines for WLAs are achieved.	updated language in the 2004 MS4 permit	the current language is not clear to me. Particularly, I did not see what BMPs are 'specified' in the Permit nor understand by what is meant "interim compliace deadline".
11	Table 1	**Required Program Application Element**	**Required Program ~~Application~~ Elements**	Consistency.
12	Table 1		Comments in file "Required Program Element Table 1 review JB"	

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
13	4.1	The green technology practices shall be designed to mimic pre-development site hydrology through use of on-site stormwater retention measures (e.g., harvesting and using, infiltrating and evapotranspiring runoff).		"green technology" (GT) is an excellent environmental tool that needs to be promoted. In DC its application has tremendous value in the areas of air quality, energy savings, and water saving. However, the utility of GT in reducing pollutants from storm water discharges (the object of the MS4 permit) is indirect and is limitted to increasing public awareness and public behavior modification at best. The hands-on and visual aspects of GT implementation are particularly useful in instilling good stewardship. The benefit to DC storm water is the public's awareness of the implications of releasing pollutants to the environment. However, the classical application of "green technology" for storm water control ('to mimic pre-development site hydrology") in the District of Columbia is of minimal use, if not counterproductive. The level of effort required by the permit does not translate into any demonstrable storm water quality improvement that EPA believes must be achieved. Some of the reasons are: 1) The nature of the pre and post- development hydrology (no appreciable change in 'time of travel', a critical parameter in GT), 2) DC's storm water drainage design and function (sewer allignment, sewershed vs watershed etc...), 3) Limiting factors due to (a) construction/development practices, (b) Site conditions, and others, and 4) the general availability of new land and decline of development activties. DC's peculiar features (hydrology, building design etc...) do not lend to storm water benefits that can be achieved through the GT promoted by the EPA. Therefore, the performance standard for the MS4 permit must not be associated to the activties under GT. It is in DC's interest to ptomote GT for its own reasons and it is not appropriate for EPA to include it in the MS4 permit unless it has supported evidence (quantified) of strom water impairment mitigated by specific technology.
14	4.1	In accordance with Section 6.2 herein, the first Consolidated Annual Report submitted within this Permit term shall establish a baseline for the following: (1) percentage of impervious cover within the District; and (2) number and square footage of green roofs as defined herein within the District. In subsequent Consolidated Annual Reports, report on the percentage of decreased impervious cover and increased number and square footage of green roofs and other practices that infiltrate, evapotranspire and harvest stormwater within the District.	delete this paragraph	The information is avaialble.

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
15	Waiver to federal facilties?	4.1.1.a, 4.1.1.b	Delete 4.1.1.a and 4.1.1.b	These sections should not be the "Performance standard" for the DC MS4 permit. This section deals with the quantity of storm water. Until and unless storm water quantity has been demonstrated to be a storm water quality problem, it is erroneous to require such standard. The rationale for invoquing control of storm water quantity is the deleterious effect of peak flows in degredating (sscouring) and aggredation (sediment deposition) in waterways. Peak flows causing such phenomena has not been documented in DC! New and redevelopment activities in the cirty have already have already peaked and they are on the decline. In addition, physical constraints may limit application of the remaining sites that may be avaialable for the required standards. Therefore, the benefits from this requirement are minimal. Beyond this fact, requirements (or 'performanance standard' as the draft permit puts it) for federal and non-federal facilities are not the same. Section 4.1.1.b is in acknowledgement of DC's limitation in enforcing its storm water standards to federal facilities and is equivalent to EPA granting a waiver to federal facilties. Non the less, the draft permit assigns the responsibility to DC that dicharges from federal and non-federal facilities "do not cause or contribute to an excursion above any (1) applicable TMDL WLAs; or (2) DC WQS, whichever is more stringent ..." It also assigns the burden of proof on DC. This pauses a significant problem when contamination comes from federal facilties and DC is made to pay the penalties. DC should not accept this condition. DC should request that EPA should issue individual permit for storm water discharges from Federal facilities discharging to either the DC MS4 or directly to DC waterbodies. DC must ask, what happens when a federal facility discharges to the DC MS4 pollutants that "cause or contribute to an excursion above any (1) applicable TMDL WLAs; or (2) DC WQS?". In the state of Delaware EPA issues NPDES permits for federal facilties.
16	4.1.1.b	In addition, pollutants in the discharge must be controlled to meet the standards contained in section 1.4 herein, unless such discharges are fully compensated for by a program for implementing in-lieu or off-site mitigation credits.	???	This section in effect allows discharge of pollutants for a fee. The question is, does the storm water fee currently in place be considered full compensation?
17	4.1.1.c	4.1.1.c. Code and Policy Consistency, Site Plan Review and Verification	delete section	See also comment #15 re 4.1.1.a and 4.1.1.b. The District of Columbia has a site review and inspection process for construction.
18	4.1.1.d	4.1.1.d. Off-Site Mitigation	Within one-year of this Permit, the District shall implement an off-site mitigation program for facilities from which the discharge of pollutants determined to cause or contribute to an excursion above any (1) applicable TMDL WLAs; or (2) DC WQS to the MS4 drainage is technically infeasible and cannot be prevented.	See also comment #15 re 4.1.1.a and 4.1.1.b. The off-site mitigation should apply to storm water quality impairement that cannot be prevented or be made worse as a result of storm water controls such as infiltration and retention.
19	4.1.1.e	4.1.1.e Green Landscaping Incentives Program	delete section	See also comment #15 for 4.1.1.a. This program must be one that DC implements as it sees appropriate and applicable to site conditions in reducing storm water pollution and should not be a permit requirement.

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
20	4.1.2	4.1.2. Retrofit Program for Existing Discharges (sections 1 to 3)	4.1.2. Retrofit and Rehabilitation Programs - Where excessive Bacteria (E. coli), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash occur, the District will require implementation of pollution reduction/elimination mechanism in retrofit and rehabilitation programs.	It is assumed that the purpose of this section is to require allignment of and give credit to the city's Capital Improvement Plan (CIP) projects for storm water quality improvement purposes (transportation rights-of-way is specifically mentioned, sewer system rehabilitation projects may be included). It is to be noted that the planning, design and construction of any one project extends well beyond the term of the permit. Therefore, the permit should not require implementation of any project or specific square footage of any activtiy. Instead, it should address where storm water pollution incidents occurs for all retrofit and rehabilitation projects.
21	4.1.2	Section 4 of 4.1.2 -The District, with facilitation assistance from EPA Region III, will also target major Federal landholders, such as the General Services Administration and the Department of Defense, for outreach and education, with the objective of identifying retrofit opportunities and establishing agreements to comply with the performance standard in 4.1.1.b..	Delete this section.	EPA should issue NPDES permit for federal facilities.
22	4.1.3	4.1.3 Tree Canopy	Delete this section.	It is not clear as to what pollutant measured in DC storm water EPA believes would be removed by tree canopy.
23	4.1.4	4.1.4 Green Roof Projects	Delete this section.	In its storm water quality application, the benefit green roof technology is limmited to reduction of atmospheric deposition. It is not clear as to what pollutant measured in DC storm water EPA believes would be removed by green roof. DC may implement the technology for other benefits, but EPA should not require this technology for the MS4 permit, least associate a performance standard.
24	4.2	4.2 Operation and Maintenance of Stormwater Capture Practices	Delete this section.	If EPA requires any storm water pollution mitigation measures in areas demonstrated to have storm water quality impact, EPA should require that all entities (including DC, federal and private) believed to be a potential source of the pollutant(s) in the storm water to take specific steps aimed at reducing/eliminating the pollutant(s).
25	4.2.3.a and 4.2.3	4.2.3 Stormwater Management Guidebook and Training 4.2.3.a No later than 18 months from the Permit issuance date, the Permittee shall finalize a Stormwater Management Guidebook to be available for wide-spread use by land use planners and developers. The Stormwater Management Guidebook shall provide regular updates, as applicable, in a format that facilitates such regular updates, and shall include objectives and specifications for integration of stormwater management technologies, including on site retention practices, in the areas of:	**Create a separate section for the following text** -- No later than 18 months from the Permit issuance date, the Permittee shall finalize a Stormwater Management Guidebook to be available for wide-spread use by land use planners and developers. The Stormwater Management Guidebook shall provide information on green technology that are available for application for storm water quality control in the District. The Guidebook shall be updated as information becomes available. ~~regular updates, as applicable, in a format that facilitates such regular updates, and shall include objectives and specifications for integration of stormwater management technologies, including on site retention practices, in the areas of~~:	While it is easy to write a textbook type of storm water management guide, it takes far longer to write one that takes into account the paculiar aspects of DC's unique aspects of hydrology (its alteration over time), development practices etc ... Since the Guidebook is to issue specifications to be "used by land use planners and developers" in DC, if not properly researched to take into account site specific conditions which vary considerably throughout the city, it may have negative impact on DC. The work ivolving site specific determination is extensive and the liabilities are too high. This section should be limitted to the suggested language.

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
26	4.3	4.3 Management Plan for District Government Areas	Delete section 4.3. For lack of time to recommend alternative langage, it is suggested to maintain the current (2004) MS4 language for Storm Water Management Program.	All the proposed mangement components, if applicable, should be required of not only "District Government areas", but across the MS4 area (including DC, private, and ferderal areas). If EPA has identified a source with quantified water quality impact, it should issue a seperate NPDES permit to those facilities. It is noted that most of the activities listed under this section relate to DC's municipal functions (for which DC has established legal authority) already funded by taxes collected from the residents. If EPA has specific activity that it recommends the District of Columbia carry out, EPA may identify the water quality impairment(s) (demonstrated by DC storm water quality analysis) and include those activities that will result in quantifiable reduction of that particular pollutant. Short of identified storm water quality problems, the MS4 permit should include all management requirements in general terms to allow the District of Columbia flexibility to employ appropriate and applicable storm water quality control measures as the impairments/suspect sources are discovered.
27	4.4	4.4 Management Plan for Commercial and Institutional Areas	Delete section 4.4. (see #26).	See comments #24 and #26
28	4.5	4.5 Management Plan for Industrial Facilities and Spi Prevention	Delete section 4.5. (see #26)	See comments #24 and #26
29	4.6	4.6 Stormwater Management for Construction Sites	Delete section 4.6. (see #26)	See comments #24 and #26
30	4.7	4.7 Management Plan for Illicit Discharges and Improper Disposal	Delete section 4.7. (see #26)	See comments #24 and #26
31	4.8	4.8 Flood Control Projects	Delete section 4.8 (see #26)	See comments #24 and #26
32	4.9	4.9 Public Education and Participation Program	Delete section 4.9 (see #26)	See comments #24 and #26
33	5.1	5.1 Revised monitoring plan. Within one year of the effective date of this permit the permittee shall develop, public notice and submit to EPA Region III for approval a revised monitoring plan to meet the following objectives:	Within one year of the effective date of this permit the permittee shall develop, public notice and submit to EPA Region III for approval a revised monitoring plan to meet ~~the following objectives~~: discharge requirement for storm water.	The suggested language covers the MS4 discharge permit objectives.
34	5.1 1.	1.Make wet weather loading estimates of the parameters in Table 3 from the MS4 to receiving waters. Number of samples, sampling frequencies and number and locations of sampling stations must be adequate to ensure data are statistically significant and interpretable.	Delete subsection 1 of 5.1	This is one of the 3 required objectives of the required revision for the monitoring plan. It is not clear what EPA's rationale is for the selection of parameters in Table 3. In identifying the parameters for which storm water samples are to be analyzed, one can select from various and on a specific basis. The comprehensive list is one required by 40 CFR.

	The Issue	Current Language	Suggested Language	Justification for Change and other Comments
35	5.1 2.	2. Evaluate the health of the receiving waters, to include biological and physical indicators such as macroinvertebrates and geomorphologic factors. Number of samples, frequencies and locations must be adequate to ensure data are statistically significant and interpretable for long-term trend purposes (not variation among individual years or seasons).	Delete subsection 2 of 5.1	This is the second of the 3 required objectives of the required revision for the monitoring plan. The District of Columbia had a program to "evaluate the health of the receiving waters". It is a federal requirement under the CWA section 106. DC prepares and submits a water quality reports to the EPA. To evaluate the in-stream water quality involves substancial activities beyond evaluation of storm water sources. It involves determinations on various sources other than storm water, such as upstream sources, legacy contamination (ground water and sediment contaminations), and discharges from other than storm water sources. The DC water quality program that implements the evaluation of the health of the receiving waters is currently in part funded by the EPA. This activitiy should not be a requirement under the NPDES MS4. By making it an MS4 requirement DC taxpayer will have to absorb all the CWA section 106 function costs.
36	5.1 3.	Any additional necessary monitoring for purposes of source identification or wasteload allocation tracking	Delete subsection 1 of 5.1	Redundant (see also #33).
37	1. (?)	The Permittee must use the information to evaluate the quality of the stormwater program and the health of the receiving waters at a minimum to include:	Delete phrase	The numbering for this section is off. The statement seems to suggest say that the information (understood to mean the "quantitative data" for the pollutants in question) must be used "to evaluate the quality fo the stormwater program" (understood to mean the programs under the storm water management plan) and the "health of the receiving waters" (understood to mean the in-stream water quality). While the quantitative data must be used to guide the management plan, the storm water quality is not sufficient to determine the "health of the receiving waters". The health of the receiving waters is determined by the amount of pollutants from upstream sources, sediment contamination (legacy), and other discharges.

"Jerusalem Bekele"
<jbekele@msn.com>
06/04/2010 11:17 PM

To Garrison Miller/R3/USEPA/US@EPA
cc
bcc
Subject Re: Mailing List

Hi Garry

I was hoping that the neighborhood folks would wrap up on the comments on the Draft MS4 Permit by today, I guess life's emergencies get on the way.
I am sending you the comments I made and the working files (basically the ones I submitted at the office). there are 3 files: "DC permit..." is the permit text where the number highlighted in blue refer to the comment number in "table_4_..." file. You will see that I did not complete review of the whole Draft permit. Not only the time was short, but some research slowed me down. For example I was not able to locate the documentation of the statistical model developed by DDOE mentioned in Section 7 of the draft permit. The last file "Storm Water Reduction ..." examines the merit of storm water reduction in DC. You will see that I am critical of LIDs for storm water in DC. Unfortunately, DC is a very bad model for the successful storm water application of a great concept.
The LID idea is great for engaging the public. People feel good when they actually do something to improve the environment. I was at the Green Roof Conference that was held in DC this week. I brought back seedlings and many ideas that my neighbors are very excited about. I am sure that my planted concrete patio will win a prize at our next year Brookland neighborhood garden tours I paln to enter. Will send you the before and after shots.

Regards
----- Original Message -----
From: Miller.Garrison@epamail.epa.gov
To: Jerusalem Bekele
Sent: Wednesday, April 21, 2010 8:21 AM
Subject: Re: Mailing List

Jerusalem,
Great to hear from you!
As requested, I have added your email address to our NPDES mailing list to receive future notification of DC permit actions.
Hope all is well with your family.
Take care,
Garry

"Jerusalem Bekele" <jbekele@msn.com> 04/21/2010 07:20 AM

To Garrison Miller/R3/USEPA/US@EPA
cc
Subject Mailing List

Hi Garry

How are you? I hope all is well.
Kindly include my address to EPA's mailing list for public notice and information. I know there is one for NPDES, if there are any other mailing lists please add my e-mail address to those too. I am working with the Advisory Neighborhood Commission members here in my area. It is good to see folks wanting to be involved in environmental issues. I think the Earth Day anniversary news has a lot to do with it. I hope we can sustain the interest.

Thank you

Jerusalem
jbekele@msn.com

DC permit 4-19-10 JBs working file.doc table_4_agency_comments JBekele input.xlsx

Storm Water Reduction for DC in Draft MS4 Permit.docx

Draft NPDES Permit No. DC0000221

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL SEPARATE STORMWATER SYSTEM PERMIT

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*

Government of the District of Columbia
The John A. Wilson Building
1350 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

is authorized to discharge from all portions of the municipal separate storm sewer system owned and operated by the District of Columbia to receiving waters named:

Potomac River, Anacostia River, Rock Creek and stream segments tributary to each such water body

in accordance with the Stormwater Management Program(s) dated February 19, 2009, and related reports, effluent limitations, monitoring requirements and other conditions set forth in Parts I through IX herein.

The effective issuance date of this permit is: _____.

This permit and the authorization to discharge shall expire at midnight, on: _____.

Signed this _____ day of _____, 2010.

_____
Jon M. Capacasa, Director
Water Protection Division
U.S. Environmental Protection Agency
Region III

PERMIT FOR THE DISTRICT OF COLUMBIA'S
MUNICIPAL SEPARATE STORM SEWER SYSTEM

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9. STANDARD PERMIT CONDITIONS FOR NPDES PERMITS
9.1 Duty to Comply
9.2 Inspection and Entry
9.3 Civil and Criminal Penalties for Violations of Permit Conditions
9.4 Duty to Mitigate
9.5 Permit Actions
9.6 Retention of Records
9.7 Signatory Requirements
9.8 Oil and Hazardous Substances Liability
9.9 District Laws, Regulations and Ordinances
9.10 Property Rights
9.11 Severability
9.12 Transfer of Permit
9.13 Construction Authorization
9.14 Historic Preservation
9.15 Endangered Species
9.16 Toxic Pollutants
9.17 Bypass

9.17.1. Bypass not exceeding limitations
9.17.2. Notice
9.17.3. Prohibition of bypass
9.18 Upset
9.19 Reopener Clause for Permits
9.20 Duty to Reapply

10. PERMIT DEFINITIONS

1. DISCHARGES AUTHORIZED UNDER THIS PERMIT

1.1 Permit Area

This permit covers all areas within the corporate boundary of the District of Columbia served by, or otherwise contributing to discharges from, the Municipal Separate Storm Sewer System (MS4) owned or operated by the District of Columbia (hereinafter, "MS4 Permit Area").

1.2 Authorized Discharges

This permit authorizes all stormwater point source discharges to waters of the United States from the District of Columbia's MS4 that comply with the requirements of this permit. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate NPDES permits [1].

This permit authorizes the following non-stormwater discharges to the MS4 when appropriate stormwater activities and controls required through this permit have been applied and which are: (1) discharges resulting from clear water flows, roof drainage, water line flushing, landscape irrigation, ornamental fountains, diverted stream flows, rising ground waters, uncontaminated ground water infiltration to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation waters, springs, footing drains, lawn watering, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, wash water, fire fighting activities, and similar types of activities; and (2) which are managed so that water quality is not impaired and that the requirements of the federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, and EPA regulations are met.

1.3 Limitations to Coverage

1.3.1 Non-stormwater Discharges

The Permittee, as defined herein, shall effectively prohibit non-stormwater discharges into the MS4, except to the extent such discharges are regulated with an NPDES permit [2].

1.3.2 Waivers and Exemptions [3,4]

This permit does not authorize the discharge of any pollutant from the MS4 which arises from or is based on any existing waivers and exemptions," that may otherwise apply and are not consistent with the Federal Clean Water Act and other pertinent guidance, policies, and regulations. This narrative prohibition on the applicability of such waivers and exemptions extends to any activity that would otherwise be authorized under District law, regulations or ordinance but which impedes the reduction or control of pollutants through the use of stormwater

control measures and/or prevents compliance with the narrative /numeric effluent limits of this Permit. Any such discharge not otherwise authorized may constitute a violation of this permit.

1.4 Discharge Limitations

The Permittee must manage, implement and enforce a stormwater management program (SWMP) in accordance with the Clean Water Act and corresponding stormwater NPDES regulations, 40 C.F.R. Part 122, to meet the following requirements:

1. Effectively prohibit pollutants in the stormwater discharges or other unauthorized discharges into the MS4 System as necessary to comply with existing District of Columbia Water Quality standards (DCWQS);

2. Be consistent with applicable waste load allocations (WLAs) for each approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with 33 U.S.C. § 1342(p)(3)(B)(iii); 40 C.F.R. § 122.44(k)(2) and (3); and

33 U.S.C.§ 1342(p)(3)(B)(iii) – Permit requirement - (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

§ 122.44(k)(2) and (3) - Best management practices (BMPs) to control or abate the discharge of pollutants when:
(2) Authorized under section 402(p) of the CWA for the control of storm water discharges;
(3) Numeric effluent limitations are infeasible; or

3. No increase in pollutant loadings from discharges from the MS4 may occur to receiving waters.

Compliance with all performance standards and provisions contained in this Permit shall constitute progress toward compliance with DCWQS.

2. LEGAL AUTHORITY, RESOURCES AND STORMWATER PROGRAM ADMINSTRATION

2.1 Legal Authority[5]

1. The Permittee must have adequate legal authority to control discharges to and from the Municipal Separate Storm Sewer System (MS4) in order to prevent or reduce the discharge of pollutants to achieve water quality objectives. Any deficiencies in the legal authority to carry out these requirements shall be remedied as soon as possible in accordance with the District's legislative process. Any changes to or deficiencies in the legal authority shall be explained in each Annual Report.

2. No later than one year following the effective date of this Permit, the District shall update and implement Chapter 5 of Title 21 of District of Columbia Municipal Regulations (Water Quality and Pollution) ("updated DC Stormwater Regulations"), to address the control of stormwater throughout the MS4 Permit Area. Such regulations shall be at least as protective of water quality as the federal Clean Water Act and its implementing regulations require.

3. The Permittee shall use its existing legal authority to control discharges to and from the Municipal Separate Storm Sewer System (MS4) in order to prevent or reduce the discharge of pollutants to achieve water quality objectives. To the extent deficiencies can be addressed through regulation or other Executive Branch action, the Permtitee shall remedy such deficiencies within 120 days. Deficiencies that can only be addressed through legislative action shall be remedied as expeditiously as possible in accordance with the District's legislative process. Any changes to or deficiencies in the legal authority shall be explained in each Annual Report.

4. The intent of this provision is not to prohibit the Permittee's ability to enter into inter-jurisdictional agreements with other District agencies and/or other jurisdictions affected through this Permit.

5. Review and revise, where applicable, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of the following standards: (1) standards resulting from issuance of District stormwater regulations required by Section 2.1, paragraph 1 herein; and (2) performance standards required by this Permit.

2.2 Fiscal Resources

The Permittee, including all agencies and departments of DC as specified in section 2.3 below, shall provide adequate finances, staff, equipment, and support capabilities to implement the existing Stormwater Management Program (SWMP) dated February 19, 2009 and the provisions of this permit. Each annual report under Part 6 of this Permit shall include a demonstration of adequate fiscal capacity to meet the requirements of this Permit.

2.3 Stormwater Management Program Administration/Permittee Responsibilities[6]

1. The Government of the District of Columbia is the Permittee, and all activities of all agencies, departments, offices and authorities of the District must comply with the requirements of this Permit. The Permittee has designated the District Department of the Environment (DDOE) as the agency responsible for managing the MS4 Stormwater Management Program and all activities necessary to comply with the requirements of this Permit and the Comprehensive Stormwater Management Enhancement Amendment Act of 2008 by coordinating and facilitating a collaborative effort among other city agencies and departments including but not limited to departments designated as "Stormwater Agencies" by the Comprehensive Stormwater Management Enhancement Amendment Act of 2008:

District Department of Transportation (DDOT);
Department of Public Works (DPW);
Office of Planning (OP);
Office of Public Education Facilities Modernization (OPEFM);
Department of Real Estate Services (DRES);
Department of Parks and Recreation; and
DC Water and Sewer Authority (WASA).

Each named entity is responsible for complying with those elements of the permit within its jurisdictional scope and authorities.

2. DDOE shall coordinate, and all agencies, offices, departments and authorities shall implement provisions of the existing MS4 Task Force Memorandum of Understanding (MOU) dated 2000, updated matrix of responsibilities (January 2008), and other institutional agreements, including but not limited to activities identified in the Upgraded Stormwater Management Plan (Feb. 19, 2009), as necessary to coordinate compliance activities among agency partners to implement the provisions of this Permit and the current SWMP. DDOE's major responsibilities under these MOUs and institutional agreements shall include:

a. Convening regular meetings and communication with MS4 Task Force agencies and other committees established to implement this Permit to budget, assign and implement projects, and monitor, inspect and enforce all activities required by the MS4 Permit.

b. Providing technical and administrative support for the MS4 Task Force and other committees established to implement this Permit

c. Evaluating, assessing, and synthesizing results of the monitoring and assessment programs and the effectiveness of the implementation of management practices and coordinating necessary adjustments to the stormwater management program in order to ensure compliance.

d. Coordinating the completion and submission of all deliverables including annual reports and plans required by the MS4 Permit.

e. Reviewing and processing requests from the MS4 Task Force agencies for reimbursement from the Stormwater Enterprise Fund for Permit-related tasks.

f. Projecting revenue needs to meet MS4 Permit requirements, overseeing the District's stormwater fees to fulfill revenue needs, and coordinating with WASA to ensure the District's stormwater fee is collected.

g. Making available to the public and other interested and affected parties, the opportunity to comment on MS4 stormwater management program.

3. Within 180 days of permit issuance, the Permittee shall complete an assessment of additional governmental agencies and departments, non-governmental organizations, watershed groups or other community organizations in the District and adjacent states to partner with to administer required elements of the Permit. Intra- and inter-agency agreements between relevant governmental and nongovernmental organizations shall be established to ensure successful coordination and implementation of stormwater management activities in accordance with the requirements of this Permit. Additional government and nongovernmental organizations and programs to consider include; land use planning, Brownfields redevelopment, fire department, building and safety, public health, parks and recreation, and federal departments and agencies, including but not limited to, the National Park Service, Department of Agriculture, Department of Defense, and General Services Administration, responsible for facilities in the District.

3. **SOURCE IDENTIFICATION**

3.1 Significant Changes Creating Potential Pollutant Sources[7]

The Permittee shall continue to compile and submit pertinent information on known or potential pollution sources, as soon as practicable after it becomes aware of such information, including significant changes in:

land use activities,
population estimates,
runoff characteristics,
major structural controls,
landfills,
publicly owned lands, and
industries impacting the MS4.

For purposes of this section, “significant changes” are changes that have the potential to revise, enhance, modify or otherwise affect the physical, legal, institutional, or administrative characteristics of the above-listed potential pollution sources. This information shall be submitted in each of the Annual Reports submitted to EPA pursuant to the procedures in Part 6.2 herein. For the Stormwater Model, analysis of data for these pollution sources shall be reported according to Part 7 herein.

3.2 Outfalls[8]

To the extent not already otherwise reported, no later than 18 months after issuance of this Permit, the Permittee shall provide an up-to-date inventory (organized by watershed) of all outfalls that discharge through the MS4 including any changes to the identification and mapping of existing permitted outfalls. Such inventory shall include, but not be limited to, the name and address, and a description (such as SIC code) which best reflects the principal products or services provided by each facility which may discharge to the MS4.

3.3 Addressing Potential Pollutant Sources[9]

The Permittee shall implement controls to minimize and prevent discharges of pollutants, including but not limited to Bacteria (E. coli), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash, to receiving waters. Controls shall be designed to prevent and restrict pollutants from coming into contact with stormwater, *e.g.*, restricting the use of lawn fertilizers rather than end-of-pipe treatment. These strategies shall include program priorities and a schedule of activities to address those priorities and an outline of which agencies will be responsible for implementing those strategies. The strategies used to reduce or eliminate these pollutants shall be documented in subsequent Annual Reports and in revisions to the Stormwater Management Plan dated February 19, 2009.

(iii) Source identification.
(A) A description of the historic use of ordinances, guidance or other controls which limited the discharge of non-storm water discharges to any Publicly Owned Treatment Works serving the same area as the municipal separate storm sewer system.
(B) A USGS 7.5 minute topographic map (or equivalent topographic map with a scale between 1:10,000 and 1:24,000 if cost effective) extending one mile beyond the service boundaries of the municipal storm sewer system covered by the permit application. The following information shall be provided:
(1) The location of known municipal storm sewer system outfalls discharging to waters of the United States;
(2) A description of the land use activities (e.g. divisions indicating undeveloped, residential, commercial, agricultural and industrial uses) accompanied with estimates of population densities and projected growth for a ten year period within the drainage area served by the separate storm sewer. For each land use type, an estimate of an average runoff coefficient shall be provided;
(3) The location and a description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;
(4) The location and the permit number of any known discharge to the municipal storm sewer that has been issued a NPDES permit;
(5) The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.); and
(6) The identification of publicly owned parks, recreational areas, and other open lands.

(1) The NPDES program requires permits for the discharge of ``pollutants" from any ``point source" into ``waters of the United States." The terms ``pollutant", ``point source" and ``waters of the United States" are defined at Sec. 122.2.
***
-Discharge when used without qualification means the ``discharge of a pollutant."
-Discharge of a pollutant means:
(a) Any addition of any ``pollutant" or combination of pollutants to ``waters of the United States" from any ``point source," or
(b) Any addition of any pollutant or combination of pollutants to the waters of the ``contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is

being used as a means of transportation.
This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any ``indirect discharger."
***
-Indirect discharger means a nondomestic discharger introducing ``pollutants" to a ``publicly owned treatment works."
***
-Waters of the United States or waters of the U.S. means:
(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(b) All interstate waters, including interstate ``wetlands;"
(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, ``wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
(3) Which are used or could be used for industrial purposes by industries in interstate commerce;
(d) All impoundments of waters otherwise defined as waters of the
-United States under this definition;
(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
(f) The territorial sea; and
(g) ``Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

4. STORMWATER MANAGEMENT PROGRAM (SWMP)[10]

The Permittee shall continue to implement, assess and upgrade the controls, procedures and management practices, described in Part 4 herein and in the current Upgraded SWMP dated February 19, 2009, all requirements of which are incorporated herein, in order to reduce or eliminate the pollutant load, and to protect or restore water quality standards and meet the requirements of the Clean Water Act, its implementing regulations, and relevant District of Columbia laws, regulations and ordinances. The Stormwater Management Program is comprised of all requirements in this Permit, including the program elements listed in Table 1 below. The set of BMPs specified in the Permit can be adapted as opportunities change, as long as interim

compliance deadlines for WLAs are achieved.

The measures required below are terms of this Permit. These Permit requirements do not prohibit the use of 319(h) funds for other related activities that go beyond the requirements of this Permit, nor do they prohibit other sources of funding and/or other programs where legal or contractual requirements preclude direct use for stormwater permitting activities.

TABLE 1[contents of table - 12]
Required Program Stormwater Elements

Required Program Application Element[11]	**Regulatory References**
Adequate Legal Authority	40 C.F.R. § 122.26(d)(2)(I)(C)-(F)
Green technology stormwater management practices, which incorporate technologies and practices across District activities.	Chapter 5 of Title 21 of District of Columbia Municipal Regulations (Water Quality and Pollution), November 27, 2007 and August 1, 2008 Letters of Agreement
Existing Structural and Source Controls	40 C.F.R. § 122.26(d)(2)(iv)(A)(1)
Roadways	40 C.F.R. § 122.26(d)(2)(iv)(A)(3)
Pesticides, Herbicides, and Fertilizers Application	40 C.F.R. § 122.26(d)(2)(iv)(A)(6)
Municipal Waste Sites	40 C.F.R. § 122.26(d)(2)(iv)(A)(5)
Spill Prevention and Response	40 C.F.R. § 122.26(d)(2)(iv)(B)(4)
Infiltration of Seepage	40 C.F.R. § 122.26(d)(2)(iv)(B)(7)
Stormwater Management Program for Commercial and Residential Areas	40 C.F.R. § 122.26(d)(2)(iv)(A)
Manage Critical Source Areas	40 C.F.R. § 122.26(d)(iii)(B)(6)

Stormwater Management for Industrial Facilities	40 C.F.R. § 122.26(d)(2)(iv)(C)
Industrial and High Risk Runoff	40 C.F.R. § 122.26(d)(2)(iv)(C), (iv)(A)(5)
Identify Priority Industrial Facilities	40 C.F.R. § 122.26(d)(2)(iv)(C)(1)
Illicit Discharges and Improper Disposal	40 C.F.R. § 122.26(d)(2)(iv)(B)(1)-(5), (iv)(B)(7)
Flood Control Projects	40 C.F.R. § 122.26(d)(2)(iv)(A)(4)
Public Education and Participation	40 C.F.R. § 122.26(d)(2)(iv)(A)(6), (iv)(B)(5), (iv)(B)(6)
Monitoring and Assessment and Reporting	40 C.F.R. § 122.26(d)(2)(iv)(D)(v)
Monitoring Program	40 C.F.R. § 122.26(d)(2)(iv)(B)(2), (iii), iv(A), (iv)(C)(2)
Characterization Data	40 C.F.R. § 122.26(d)(2)(iii)(B)-(D), 40 C.F.R. § 122.21(g)(7)
Reporting	Section 6 of the Upgraded Stormwater Management Plan (Feb. 19, 2009).

4.1 Standards for Long-Term Stormwater Management [13]

The Permittee shall continue to develop, implement, and enforce a green technology program in accordance with this Permit and the Permittee's Updgraded SWMP (Feb. 19, 2009) that integrates green technology stormwater management practices at the site and neighborhood level through policies, regulations, ordinances and incentive programs in order to protect water quality across the District. The green technology practices shall be designed to mimic pre-development site hydrology through use of on-site stormwater retention measures (e.g., harvesting and using, infiltrating and evapotranspiring runoff).

In accordance with Section 6.2 herein, the first Consolidated Annual Report submitted within this Permit term shall establish a baseline for the following: (1) percentage of impervious cover within the District; and (2) number and square footage of green roofs as defined herein within the District. In subsequent Consolidated Annual Reports, report on the percentage of

decreased impervious cover and increased number and square footage of green roofs and other practices that infiltrate, evapotranspire and harvest stormwater within the District.

4.1.1 Standards for New and Redevelopment

The Permittee shall require stormwater entering the MS4 from new development and redevelopment to be controlled as follows:

The Permittee shall require stormwater entering the MS4 from new development and redevelopment that disturbs land greater than or equal to 5,000 square feet, thereby triggering requirements for stormwater management plan review and approval as part of the District's permitting process, to be controlled as follows:

4.1.1.a Performance Standard for Non-federal Facilities [15]

No later than one year following issuance of this Permit, the Permittee shall, through its Updated DC Stormwater Regulations or other permitting or regulatory mechanisms, implement an enforceable mechanism that will adopt and implement either of the following performance standards:

i. Require the design, construction and maintenance of stormwater controls to achieve on-site retention of "1.2" volume of stormwater from a 24- hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District; or

ii. Require the design, construction and maintenance of stormwater controls to achieve the retention of the predevelopment runoff volume of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District. Determination of the predevelopment runoff volume must be based on a full hydrologic and hydraulic analysis of the site that ensures maintenance of predevelopment hydrographs (volume, rate and duration) for the 1-, 2-, 10- and 100-year 24-hour storm events. The modeled predevelopment condition must be meadow.

4.1.1.b. Performance Standard for Federal Facilities [15]

The District shall ensure through requirements for design, construction and maintenance that federal facilities undertaking new or redevelopment of 5,000 square feet or more comply with one of the following:

i. Adopt the design, construction and maintenance of stormwater controls to achieve on-site retention of 1.7" of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater

harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District; or

ii. Adopt the design, construction and maintenance of stormwater controls to achieve the retention of the predevelopment runoff volume of stormwater from a 24- hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District. Determination of the predevelopment runoff volume must be based on a full hydrologic and hydraulic analysis of the site that ensures maintenance of predevelopment hydrographs (volume, rate and duration) for the 1, 2, 10 and 100 year 24-hour storm events. The modeled predevelopment condition must be meadow.

Discharges controlled in accordance with the standards described in Part 4.1.1.a and 4.1.1.b shall be considered to be as stringent as necessary to ensure that the discharges do not cause or contribute to an excursion above any (1) applicable TMDL WLAs; or (2) DC WQS, whichever is more stringent, so long as the Permittee can demonstrate quantitatively that the Permit conditions meet the WLA.

In addition, pollutants in the discharge must be controlled to meet the standards contained in section 1.4 herein, unless such discharges are fully compensated for by a program for implementing in-lieu or off-site mitigation credits.[16]

4.1.1.c. Code and Policy Consistency, Site Plan Review and Verification [17]

For both 4.1.1.a and 4.1.1.b the District must review and revise, as applicable, stormwater, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of on-site retention. The District must also have a formal process for site plan reviews and a post-construction verification process (e.g., inspections, submittal of as-builts) to ensure that standards are appropriately implemented.

4.1.1.d. Off-Site Mitigation [18]

Within one-year of the effective date of this Permit, the District shall implement an off-site mitigation and Fee-in-Lieu program to be utilized when projects cannot meet stormwater management standards as defined in Sections 4.1.1.a and 4.1.1.b. The program shall include at a minimum: establishment of baseline requirements to be applied for mitigation projects, specific criteria for determining when full compliance with the performance standard cannot technically be met based on physical site constraints, and specific procedures for evaluating when an off-site mitigation is not feasible and in-lieu credits must be substituted to satisfy this requirement. The requirements for off-site mitigation and in-lieu payments shall be sufficient to encourage on-site stormwater management as a first option for meeting stormwater performance. Further, the requirements for off-site mitigation shall be established to meet or exceed the stormwater performance requirements for each project.

The Permittee mitigation program may allow adjustments to retention standards for redevelopment, high density development, transit-oriented development and other development patterns in non-federal facility areas for which the District can quantify water quality, water quantity, climate change adaptation or other environmental benefit(s). All payments in lieu must be deposited in the District's Stormwater Enterprise Fund for use by the District to implement the terms of this Permit.

4.1.1.e Green Landscaping Incentives Program [19]

No later than one year following Permit issuance, the Permittee shall develop an incentive program to increase the quantity and quality of planted areas in the District while allowing flexibility for developers and designers to meet development standards. The Incentive Program shall use such methods as a scoring system to encourage green technology practices such as larger plants, permeable paving, green roofs, vegetated walls, preservation of existing trees, and layering of vegetation along streets and other areas visible to the public.

4.1.2 Retrofit Program for Existing Discharges [20]

1. Performance Standard. Within one year of the effective date of this permit, establish performance metrics for retrofit projects. The starting point for the performance metrics shall be the standard in 4.1.1.a and may include metrics: to count square footage proportionate to the percentage of the retention standard achieved for projects that retain less than that standard; to partially count a proportion of square footage for projects that provide stormwater treatment benefits other than retention for specific TMDL pollutants of concern; and to count removal of impervious surface. Specific site conditions (soils, depth to groundwater, site contamination, the presence of buried utilities, etc.) may constitute justifications for setting a performance standard at something less than the standard in 4.1.1.a. Specific site analysis to make this determination shall be required. As with new and redevelopment, the District may apply off-site mitigation or payment-in-lieu options. The DC Retrofit Program shall manage runoff from 18,000,000 square feet of impervious surfaces over the Permit term. A minimum of 3,600,000 square feet of this objective must be in transportation rights-of-way.

2. The DC Retrofit Program shall include a list to be organized by the three major watersheds in the District (Anacostia, Potomac and Rock Creek).

3. Estimate the potential pollutant load and volume reductions achieved through the DC Retrofit List for the following pollutants: Bacteria (E. coli), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash.

4. The District, with facilitation assistance from EPA Region III, will also target major Federal landholders, such as the General Services Administration and the Department of Defense, for outreach and education, with the objective of identifying retrofit opportunities and establishing agreements to comply with the performance standard in 4.1.1.b.. [21]

4.1.3 Tree Canopy. [22] No later than one year following issuance of this Permit, the Permittee shall develop a strategy to reduce the discharge of stormwater pollutants by expanding tree canopy throughout the city. The Permittee shall identify locations throughout the District where tree plantings and expanded tree boxes are technically feasible and commit to specific schedules for implementation at locations throughout the District, with highest priority given to projects that offer the greatest stormwater retention potential. This effort shall include, at a minimum:

1. Performance Standard. Achieve a minimum annual tree planting rate of at least 4,150 plantings annually within the DC MS4 Permit Area. Ensure that trees are planted and maintained, including requirements for tree boxes, in the manner that will achieve optimal stormwater retention and tree survival rate within the District of Columbia and that such planting complies with the DDOT, Urban Forestry Administration Guidelines, http://app.ddot.dc.gov/ufa/information/planting_guides.shtm.

2. Annually document the total trees planted and make an annual estimate of the volume of stormwater that is being removed from the MS4 system (and combined system, as relevant) in a typical year of rainfall as a result of the maturing tree canopy over the life of the MS4 Permit.

4.1.4. Green Roof Projects. [23] As part of the green technology program plan, identify all District-owned locations throughout the District where green roof projects are technically feasible and commit to specific schedules for implementing these projects at specific locations, with highest priority given to projects that offer the greatest stormwater capture potential. The Permittee shall:

1. Complete a structural assessment of all District properties maintained by DRES and slated for redevelopment to determine current roof conditions and the feasibility for green roof installation, on an ongoing basis.

2. Performance Standard [23]. Upon completion of the structural assessment, the Permittee shall commit to installing 350,000 square feet of green roofs over the Permit cycle on District properties during the term of the Permit (including schools and school administration buildings in order to make progress toward the Mayor's goal of achieving 20% green roof coverage in the District in 20 years.

3. Document the square footage of green roof coverage in the District, whether publicly or privately owned, report any incentive programs implemented during the Permit term, and estimate the volume of stormwater that is being removed from the MS4 system (and combined system, as relevant) in a typical year of rainfall as a result of the combined total green roof facilities in the District.

4.2 Operation and Maintenance of Stormwater Capture Practices [24]

4.2.1 District Owned and Operated Practices. Within two years of the effective date of this permit, develop and implement operation and maintenance protocols and guidance

for District-owned and operated on-site retention practices (new and redevelopment, and retrofits) to include maintenance needs, inspection frequencies, estimated maintenance frequencies, and a tracking systems to document relevant information. Provide training to all relevant municipal employees and contractors, with regular refreshers, as necessary.

In addition, the Permittee shall ensure that every new building and major renovation/rehabilitation project for District-owned properties within the inventory of DRES and OPEFM (e.g., schools and school administration buildings) includes on-site stormwater retention measures, including but not limited to green roofs, stormwater harvest/reuse, and/or other practices that can achieve the retention performance standard.

4.2.2 Non-District Owned and Operated Practices. In conjunction with updating of relevant ordinances and policies, develop accountability mechanisms to ensure maintenance of stormwater control measures on non-District property. Those mechanisms may include combinations of deed restrictions, ordinances, maintenance agreements, or other policies deemed appropriate by the District. The District must also include a long-term verification process of O&M, which may include municipal inspections, 3rd party inspections, owner/operator certification on a frequency deemed appropriate by the District, and/or other mechanisms. The District must maintain an electronic inventory of practices on private property to include this information.

4.2.3. Stormwater Management Guidebook and Training [25]

4.2.3.a No later than 18 months from the Permit issuance date, the Permittee shall finalize a Stormwater Management Guidebook to be available for wide-spread use by land use planners and developers. The Stormwater Management Guidebook shall provide regular updates, as applicable, in a format that facilitates such regular updates, and shall include objectives and specifications for integration of stormwater management technologies, including on site retention practices, in the areas of:

A. Site Assessment.
B. Site Planning and Layout.
C. Vegetative Protection, Revegetation, and Maintenance.
D. Techniques to Minimize Land Disturbance.
E. Techniques to Implement Measures at Various Scales.
F. Integrated Water Resources Management Practices.
G. Designing to meet the required performance standard(s).
H. Flow Modeling Guidance.
I. Hydrologic Analysis.
J. Construction Considerations.
K. Operation and Maintenance

4.2.3.b The Permittee shall continue to provide key industry, regulatory, and other stakeholders with information regarding objectives and specifications of green contained in the Stormwater Management Guidebook through a training program. The Stormwater Management training program will include at a minimum the following:

1. Stormwater management/green technology practices targeted sessions and materials for builders, design professionals, regulators, resource agencies, and stakeholders.

2. Materials and data from stormwater management/green technology practices pilot projects and demonstration projects including case studies.

3. Design and construction methods for integration of stormwater management/green technology practices measures at various project scales.

4. Guidance on performance and cost of various types of stormwater management/green technology practices measures in the District.

4.3 Management Plan for District Government Areas [26]

Procedures to reduce the discharge of pollutants in stormwater runoff shall include, but not be limited to:

4.3.1 Sanitary Sewage System Maintenance Overflow and Spill Prevention Response

The Permittee shall implement a response plan for overflows of the sanitary sewer system into the MS4. The response plan shall clearly identify agencies responsible and telephone numbers and e-mail for any contact and shall contain at a minimum, procedures for:

1. Investigating any complaints received within 24 hours of the incident report.

2. Responding within two hours to overflows for containment.

3. Notifying appropriate sewer and public health agencies when the sanitary sewer overflows to the MS4 within 24 hours.

4.3.2 Public Construction Activities Management

The Permittee shall implement and comply with the Development and Redevelopment and the Construction requirements in Part 4.6 of this permit at all Permittee-owned or operated public construction projects.

The Permittee shall obtain coverage under the applicable EPA Construction General Permit for construction activities and projects that are:

1. Covered under one (or more) Capital Improvement Projects (including but not limited to street repaving, new streets, channel clearing) or contract, and that individually or cumulatively disturb 1 acre or more of land; or

2. Less than 1 acre, but are part of a larger common plan of development that in total disturbs 1 or more acres of land; or

3. Linear construction project(s) that disturb 1 or more acres of land.

4.3.3 Vehicle Maintenance/Material Storage Facilities/ Municipal Operations.

The Permittee shall implement stormwater pollution prevention measures at all Permittee-owned, leased facilities and job sites including but not limited to vehicle/ equipment maintenance facilities, and material storage facilities.

For vehicle and equipment wash areas and municipal facilities constructed, redeveloped, or replaced, the Permittee shall eliminate discharges of wash waters from vehicle and equipment washing into the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

1. Self-contain, and haul off-site for disposal;
2. Equip with a clarifier; or
3. Equip with an alternative pre-treatment device.

4.3.4 Landscape and Recreational Facilities Management/Pesticide, Herbicide Fertilizer and Landscape Irrigation.

The Permittee shall further reduce pollutants and pollutant discharges associated with the storage and application of pesticides, fertilizers, herbicides, the use of other toxic substances and landscape irrigation according to an integrated pest management program (IPM). The IPM shall be an ecosystem based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, use of resistant varieties, and use of low chemical and irrigation input landscapes, in accordance with the provisions of this permit, procedures and practices described in the February 19, 2009 SWMP and regulations.

The Permittee shall further utilize IPM controls to reduce pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied by employees or contractors, to public rights-of-way, parks, and other District property to ensure that:

1. Pesticides are used only if monitoring indicates they are needed according to established guidelines;

2. Fertilizers are used only when soil tests indicate that they are necessary, and only in minimum amounts and for needed purposes (e.g., seed germination).

3. Treatments are made with the goal of removing only the target organism;

4. Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial, non-target organisms, and the environment;

5. No pesticides or fertilizers are applied to an area immediately prior to, during, or immediately after a rain event, or when water is flowing off the area;

6. No banned or unregistered pesticides are stored or applied;

7. All staff applying pesticides are certified or are under the direct supervision of a pesticide applicator certified in the appropriate category;

8. Procedures are implemented to encourage the retention and planting of native and/or non-invasive, naturalized vegetation to reduce water, pesticide and fertilizer needs;

9. Pesticides and fertilizers are stored indoors or under cover on paved surfaces or enclosed in secondary containment and storage areas inspected regularly to reduce the potential for spills; and

10. Landscapes that maximize on-site retention of stormwater, while minimizing mowing, chemical inputs and irrigation are given preference for all new landscape installation.

The Permittee shall ensure that its agencies partner with one another for the purpose of ensuring that pesticide and fertilizer use within its jurisdiction does not threaten water quality.

The Permittee shall partner with other organizations to ensure that pesticide and fertilizer use within their jurisdiction does not threaten water quality.

The Permittee shall continue to conduct education and outreach, as well as provide incentives, to curtail the use of turf-grass fertilizers for the purpose of reducing nitrogen and phosphorous discharges to surface waters. The program shall incentivize the use of vegetative landscapes other than turf grass and other measures to restrict the use of turf grass fertilizers.

The Permittee shall use GIS layers of public land and sewersheds, as well as background data, to identify priority areas for a targeted strategy to reduce the sources of pesticides, herbicides, and fertilizers that contaminate the stormwater runoff, and report progress toward completing the screening characterization in the next Updated SWMP.

Include in each Annual Report 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.

4.3.5 Storm Drain Operation and Management/Solids and Floatables Reduction

The Permittee shall conduct maintenance activities at all new and existing catch basins throughout the life of the Permit.

The Permittee shall comply with the Anacostia River Trash TMDL implementation plan in Part 8 of this Permit and apply the technologies and other activities developed in the Anacostia River Trash TMDL throughout the entire MS4 Permit Area. The Permittee shall continue to report the progress of trash reduction in the Consolidated Annual Report.

4.3.6 Streets, Alleys, Roadways and Sidewalks

The Permittee shall comply with the following performance standards:

1. The Permittee shall ensure that each catch basin within the DC MS4 Permit Area is cleaned at least once annually during the life of the Permit. The Permittee shall continue to use strategies for coordinated catch basin cleaning and street-sweeping that will optimize reduction of stormwater pollutants. Street sweeping shall be conducted in accordance with the following schedule:

TABLE 2
Street Sweeping

Area/Street Classification	Frequency
Arterials-heavily developed commercial and central business districts with considerable vehicular and pedestrian traffic	At least nine (9) times per year
Industrial areas	At least six (6) times per year
Residential-residential areas with limited throughway and pedestrian traffic AND neighborhood streets which are used for local purposes only	At least four (4) times per year
Central Business District/Commercial-neighborhood business districts and main streets with moderate vehicular and pedestrian traffic	At least one time every two weeks

2. Standard road repair practices shall include limiting the amount of soil disturbance to the immediate area under repair. Stormwater conveyances which are denuded should be resodded or reseeded and mulched for rapid revegetation, and these areas should have effective erosion control until stabilized.

3. The Permittee shall continue to evaluate and update 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. The Permittee shall investigate and implement techniques available for reducing pollution from deicing salts in snowmelt runoff and runoff from salt storage facilities. The Permittee shall evaluate and implement the use of porous/permeable surfaces that require less use of deicing materials and activities. This evaluation shall be made a part of an overall investigation of ways to meet the requirements of the Clean Water Act and reported in each Annual Report.

4. The Permittee shall continue to implement and update a program and operating plan to ensure that excessive quantities of snow and ice control materials do not enter the District's water bodies. The Permittee shall report its progress in implementing the program and plan in each Annual Report. Except during a declared Snow Emergency when the Permittee determines that the foremost concern of snow removal activities is public health and safety, it shall avoid snow dumping or storage in areas adjacent to water bodies, wetlands, and areas near public or private drinking water wells which would ultimately reenter the MS4 system.

4.3.7 Infrastructure Maintenance/Pollution Source Control Maintenance

The Permittee shall continue to implement an operation and maintenance program that incorporates good housekeeping components at all municipal facilities located in the DC MS4 Permit Area, including but not limited to; municipal waste water treatment facility, potable drinking water facility, municipal fleet operations, maintenance garages, parks and recreation, street and infrastructure maintenance, and grounds maintenance operations, libraries and schools. The Permittee shall document the program in the Annual Report, as required at Section 6.2 herein. The program shall include at a minimum the following elements:

1. Continue to implement maintenance standards at all municipal facilities that will protect the physical, chemical and biological integrity of receiving waters.

2. Continue to implement an inspection schedule in which to perform inspections to determine if maintenance standards are being met. Inspections shall be performed no less than once per calendar year and shall provide guidance in SWPPP development and implementation, where needed.

3. Continue to implement procedures for record keeping and tracking inspections and maintenance at all municipal facilities.

The Permittee shall continue implementation of the following:

1. The Permittee shall continue to implement an inspection and maintenance program for all Permittee-owned management practices, including post-construction measures.

2. The Permittee shall continue to ensure proper operation of all treatment management practices and maintain them as necessary for proper operation, including all post-construction measures.

3. Any residual water following infrastructure maintenance shall be self-contained and disposed of legally in accordance with the Clean Water Act.

4.3.8 Public Industrial Activities Management/Municipal and Hazardous Facilities.

For any municipal activity associated with industrial activity, as defined by 40 C.F.R. § 122.26, which discharges stormwater to, from and through the DC MS4, the Permittee shall obtain separate coverage under either: (1) the EPA Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) (As modified May 27, 2009); or (2) an individual permit.

4.3.9. Emergency Procedures.

The Permittee may conduct repairs of essential public service systems and infrastructure in emergency situations. An emergency includes only those situations included as conditions necessary for demonstration of an upset at 40 C.F.R. 122.41(n). For each claimed emergency, the Permittee shall submit to the Permitting Authority a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implement to reduce the threat to water quality, no later than required by applicable Clean Water Act regulations.

4.3.10. Municipal Official Training.

The Permittee shall continue to implement an on-going training program for its employees whose planning, design, review, construction, operations or maintenance job functions may impact stormwater program implementation. The training program shall address the importance of protecting water quality, the requirements of this Permit, design, performance, operation and maintenance standards, inspection procedures, selecting appropriate management practices, ways to perform their job activities to prevent or minimize impacts to receiving waters, and procedures for tracking, inspecting and reporting, including potential illicit discharges. The Permittee shall provide follow-up and refresher training at a minimum of once every twelve months, and shall include any changes in procedures, techniques or requirements.

The training program shall include, but is not limited to, those employees who work in the following areas:

Municipal Planning;
Site plan review;
Transportation planning and engineering;
Street/sewer and right-of-way construction and maintenance;
Water and sewer departments;
Parks and recreation department;
Municipal water treatment and waste water treatment;
Fleet maintenance;
Fire and police departments;
Building maintenance and janitorial;
Garage and mechanic crew;
Contractors and subcontractors who may be contracted to work in the above described areas;
Personnel responsible for answering questions about the Permittee's stormwater program, including persons who may take phone calls about the program; and
Any other department of the Permittee that may impact stormwater runoff

4.4 Management Plan for Commercial and Institutional Areas [27]

The District shall establish and implement policies and procedures to reduce the discharge of pollutants in stormwater runoff from all commercial and institutional (including federal) areas.

The Permittee shall maintain stormwater management controls in commercial and institutional land areas in accordance with the following provisions:

The Permittee shall:
1. Track;
2. Inspect; and
3. Ensure compliance with the MS4 permit and municipal ordinances at commercial and institutional facilities.

Commercial and institutional minimum performance measures are:

4.4.1. Inventory of Critical Sources and Source Controls

1. Inventory. The Permittee shall continue to maintain a watershed-based inventory or database of all facilities within its jurisdiction that are critical sources of stormwater pollution. Critical Sources to be tracked may include some or all of the following:

a. Automotive service facilities, *e.g.*, service, fueling and salvage facilities;
b. Industrial activities, as defined at 40 C.F.R. §§ 122.26(b)(14); and

c. Construction sites exceeding one acre, or sites under one acre that are part of a larger common plan of development.

2. Required Information. The Permittee shall include the following minimum fields of information for each critical sources industrial and commercial facility:

a. Name of facility and name of owner/ operator;
b. Address of facility;
c. Size of facility; and
d. Activities conducted at the facility that could impact stormwater.
e. Practices and/or measures to control pollutants.
f. Inspection and maintenance schedules and dates.

The Permittee shall update its inventory of critical sources at least annually. The update may be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (*e.g.*, business licenses, pretreatment permits, sanitary sewer hook-up permits, and similar information).

4.4.2. Inspect Critical Sources

The Permittee shall continue to inspect all commercial facilities identified in Part 4.4.1. herein and any others found to be critical sources twice during the five-year term of the Permit. A minimum interval of six months between the first and the second mandatory compliance inspection is required.

4.4.3. Compliance Assurance.

At each facility identified as a critical source, the Permittee's inspector(s) shall verify that the operator is implementing a control strategy necessary to protect water quality. Where the Permittee determines that existing measures are not adequate to protect water quality, the Permittee shall require additional site-specific controls sufficient to protect water quality.

4.5 Management Plan for Industrial Facilities and Spill Prevention [28]

The District shall establish and implement policies and procedures to reduce the discharge of pollutants in stormwater runoff from all industrial (including relevant federal) facilities.

The Permittee shall:

1. Continue to implement a program to monitor and control pollutants in stormwater discharged from Industrial Facilities located within the MS4 Permit Area, as defined herein, pursuant to the requirements in 40 C.F.R. § 122.26(d)(2)(iv)(C). These facilities shall include, but are not limited to:

a. Private Solid Waste Transfer Stations

b. Hazardous Waste Treatment, Disposal, and/or Recovery Plants

c. Industrial Facilities subject to SARA or EPCRA Title III

d. Industrial Facilities with NPDES Permits

e. Industrial facilities with a discharge to the MS4

2. Continue to maintain and update the industrial facilities database.

3. Continue to perform or provide on-site assistance/inspections and outreach focused on the development of stormwater pollution prevention plans and NPDES permit compliance.

4. The Permittee shall continue to refine and implement procedures to govern the investigation of facilities suspected of contributing pollutants to the MS4, including at a minimum: (i) a review, if applicable, of monitoring data collected by the facility pursuant to its NPDES permit; and (ii) wet weather screening as required by Part 5.2.1 herein (including collecting data on discharges from industrial sites). These procedures shall be submitted as part of each Annual Report required by Part 6.2 herein.

5. Continue to implement the prohibition against illicit discharges, control spills, and prohibit dumping. Continue to implement a program to prevent, contain, and respond to spills that may discharge to the MS4, and report on such implementation submitted in each Annual Report. The spill response program may include a combination of spill response actions by the Permittees (and/or another public or private entity).

6. Report progress in developing and carrying out industrial-related programs in each Annual Report required by Section 6 herein. Provide an explanation as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

4.6 Stormwater Management for Construction Sites [29]

Continue implementation of the Program that reduces the discharge of pollutants from construction sites. In each Annual Report, the Permittee shall evaluate and report to determine if the existing practices meet the requirements of 40 C.F.R. § 122.26(d)(2)(iv)(A) and (D).

Continue the review and approval process of the sediment and erosion control plans under this program. Also, the Permittee shall ensure that all construction projects impacting one acre or greater, or less than one acre when part of a larger common plan of development or sale equal to or larger than one acre, receive EPA NPDES Construction General Permit Coverage and meet EPA Construction Effluent Limitations guidelines. The Permittee shall monitor its effluent for sediment using appropriate methods (e.g., using turbidity as a surrogate for sediment).

Continue to implement an inspection and enforcement plan for carrying out the objectives of the SWMP dated February 19, 2009. Maintain inspections and compliance and enforcement activities at or above the 2008 level. When a violation of local erosion and sediment control ordinances occurs, the Permittee shall follow existing enforcement procedures and practices using standardized reports as part of the inspection process to provide accurate record keeping of inspections of construction sites. The Permittee shall use a listing of all violations and enforcement actions to assess the effectiveness of the Enforcement Program in each Annual Report.

Continue with educational measures for construction site operators (Section 4.9 of this Permit) that consist, at a minimum, of providing guidance manuals and technical publications.

Report progress in developing and carrying out the above construction-related programs in each Annual Report required by Parts 6.2 herein, including: (i) an explanation as to how the implementation of these procedures will meet the requirements of the Clean Water Act; (ii) an explanation as to how the implementation of these procedures, particularly with regard to District "waivers and exemptions", will meet the requirements of the Clean Water Act; and (3) discussion of progress toward meeting TMDL deadlines.

4.7 Management Plan for Illicit Discharges and Improper Disposal. [30]

The Permittee shall perform the following:

1. Continue to implement an ongoing program to detect illicit discharges, pursuant to the SWMP dated February 19, 2009, and Part 4 of this Permit, and to prevent improper disposal into the storm sewer system, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1). Such program shall include, at a minimum the following:

a. An updated schedule of procedures and practices to prevent illicit discharges, as defined at 40 C.F.R. § 122.26(b)(2), and, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1), to detect and remove illicit discharges as defined herein;

b. Continue to implement an illicit connection detection and enforcement program to perform dry weather flow inspections in target areas;

c. Visual inspections of targeted areas; and

d. 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.

e. An enforcement plan for illicit discharges set forth in Part 4 herein. The Permittee shall provide a justification for the control plan in the Annual Report in demonstrating its compliance with the requirements of the Clean Water Act.

f. All necessary inspection, surveillance, and monitoring procedures to remedy and prevent illicit discharges. The Permittee 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 each Annual Report. The inspection plan shall include a schedule and allocation of resources.

g. The Permittee shall continue to 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 each of the Annual Reports.

h. The Permittee shall report the accomplishments of this program in each Annual Report.

2. The Permittee shall continue to 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.

3. The Permittee shall continue to implement the prohibition against the discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste into separate storm sewers. 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. The Permittee shall ensure that such programs are readily available to all private residents and that they are publicized and promoted on a regular basis, pursuant to the Public Education Plan in this permit at Part 4.9 herein.

4. The Permittee shall continue to work with members of the Metropolitan Police Department to enhance illegal dumping enforcement.

5. The Permittee shall implement the District's ban on coal tar pavement products, including conducting outreach and enforcement activities.

6. The Permittee shall implement the District's Anacostia Clean Up and Protection Act of 2009, to ban the use of disposable non-recyclable plastic carryout bags and restrict the use on disposable carryout bags in certain food establishments.

4.8 Flood Control Projects[31]

The Permittee shall:

1. Update the impervious surface analysis of floodplains six months after the approval of the revised the Flood Insurance Rate Maps by the Federal Emergency Management Agency.

2. Assess potential impacts on the water quality and the ability of the receiving water to support beneficial uses for all flood management projects. Evaluate the feasibility of retrofitting existing flood control devices to provide additional pollutant and volume removal from stormwater. Report results of such assessment, mapping program, and feasibility studies in the Annual Report (Part 6.2 herein). In addition, submit the flood control measures necessary to meet the requirements of the Clean Water Act with these Reports/Plans.

3. Review all development proposed in flood plain areas to ensure that the impacts on the water quality of receiving water bodies have been properly addressed. Information regarding impervious surface area located in the flood plains shall be used (in conjunction with other environmental indicators) as a planning tool. The Permittee shall collect data on the percentage of impervious surface area located in flood plain boundaries for all proposed development after the effective date of this permit. The Permittee shall collect similar data for existing development in flood plain areas, in accordance with the mapping program and other activities designed to improve water quality. Critical unmapped areas shall be prioritized by the Permittee with an emphasis on developed and developing acreage. Reports of this work shall be summarized in the Annual Report. An explanation shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

4.9 Public Education and Participation Program[32]

The Permittee shall continue to implement a public education program including but not limited to an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee. The goal of the education program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. An education program may be developed locally or regionally.

The minimum performance measures are:

4.9.1 Education and Outreach. The Permittee shall continue to implement its education and outreach program for the area served by the MS4 that was established during the previous permit cycle. The outreach program shall be designed to achieve measurable improvements in the target audience's understanding of stormwater pollution and steps they can take to reduce their impacts.

The Permittee shall assess current education and outreach efforts and identify areas where additional outreach and education are needed. Audiences and subject areas to be considered include:

1. *General public:*
   •General impacts of stormwater flows into surface waters.

•Impacts from impervious surfaces.
•Source control practices and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping, and rain water reuse.
•A household hazardous waste educational and outreach program to control illicit discharges to the MS4 as required herein.
•Information and education on proper management and disposal of used oil, other automotive fluids, and household chemicals.

2. *General public, businesses, including home-based and mobile businesses:*
•Management practices for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
•Impacts of illicit discharges and how to report them including information for industries about stormwater permitting and pollution prevention plans and the requirement that they develop structural and non-structural control systems

3. *Homeowners, landscapers and property managers:*
•Use of low-chemical nutrient fertilizers, alternatives to fertilizers, alternative landscaping requiring no fertilizers.
•Car washing alternatives with the objective of eliminating phosphorus detergent discharges.
•Yard care techniques that protect water quality.
•Management practices for use and storage of pesticides and fertilizers.
•Management practices for carpet cleaning and auto repair and maintenance.
•Runoff Reduction techniques, including site design, on-site retention, pervious paving, retention of forests and mature trees.
•Stormwater pond maintenance.

4. *Engineers, contractors, developers, review staff and land use planners:*
•Technical standards for construction site sediment and erosion control.
•Runoff Reduction techniques, including site design, on-site reduction, pervious pavement, alternative parking lot design, retention of forests and mature trees.
•Stormwater treatment and flow control controls.
•Impacts of increased stormwater flows into receiving water bodies.

4.9.2. Measurement of Impacts. The Permittee shall continue to measure the understanding and adoption of selected targeted behaviors among the targeted audiences. The resulting measurements shall be used to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.

4.9.3. Recordkeeping. The Permittee shall track and maintain records of public education and outreach activities.

4.9.4. Public Involvement and Participation. The Permittee shall continue to include ongoing opportunities for public involvement through advisory councils, watershed associations and/or committees, participation in developing updates to the stormwater fee

system, stewardship programs, environmental activities or other similar activities. The Permittee shall facilitate opportunities for direct action, educational, and volunteer programs such as riparian planting, volunteer monitoring programs, storm drain marking or stream clean up programs.

The minimum performance measures are:

1. The Permittee shall continue to create opportunities for the public to participate in the decision making processes involving the implementation and update of the Permittee's SWMP. The Permittee shall continue to implement its process for consideration of public comments on their SWMP.

2. The Permittee shall continue to establish a method of routine communication to groups such as watershed associations and environmental organizations that are located in the same watershed/s as the Permittee, or organizations that conduct environmental stewardship projects located in the same watershed/s or in close proximity to the Permittee. This is to make these groups aware of opportunities for their direct involvement and assistance in stormwater activities that are in their watershed.

3. The Permittee shall continue to make all approved MS4 documents required under this Permit available to the public. The current approved SWMP and the latest MS4 annual Permit deliverable documents required under this Permit shall be posted on the Permittee's website.

4. The Permittee shall continue to develop public educational and participation materials in cooperation and coordination with other agencies and organizations in the District with similar responsibilities and goals. Progress reports on public education shall be included in the Annual Report. An explanation shall be provided as to how this effort will reduce pollution loadings to meet the requirements of the Clean Water Act.

The Permittee shall periodically, and at least annually, update its website.

5. MONITORING AND ASSESSMENT OF CONTROLS

5.1 Revised monitoring plan[33]

Within one year of the effective date of this permit the permittee shall develop, public notice and submit to EPA Region III for approval a revised monitoring plan to meet the following objectives:

[34]1. Make wet weather loading estimates of the parameters in Table 3 from the MS4 to receiving waters. Number of samples, sampling frequencies and number and locations of sampling stations must be adequate to ensure data are statistically significant and interpretable.

[35]2. Evaluate the health of the receiving waters, to include biological and physical indicators such as macroinvertebrates and geomorphologic factors. Number of samples, frequencies and locations must be adequate to ensure data are statistically significant and interpretable for long-term trend purposes (not variation among individual years or seasons).

[36]3. Any additional necessary monitoring for purposes of source identification or wasteload allocation tracking.

Table 3
Monitoring Parameters

Parameter
E. Coli
Total nitrogen
Total phosphorus
Total suspended solids
Cadmium
Copper
Lead
Zinc

All chemical analyses required herein shall be performed in accordance with analytical methods approved under 40 C.F.R. Part 136. When there is not an approved analytical method, the applicant may use any suitable method as described in Section 5.7 herein, but must provide a description of the method.

[37]The Permittee must use the information to evaluate the quality of the stormwater program and the health of the receiving waters at a minimum to include:

1. The Permittee shall perform the following activities annually:

A. Estimate annual cumulative pollutant loadings for pollutants listed in Table 3. Pollutant loadings will be reported in DMRs and updates to the existing TMDL Implementation Plans; and

B. In updates to the existing TMDL Implementation Plans, estimate and report the event mean concentrations of pollutants listed in Table 3 in discharges from the monitoring stations in Table 4 herein.

2. The Permittee shall perform the following activities at least once during the permit term, but no later than the fourth year of this permit:

A. Identify and prioritize additional efforts needed to address water quality exceedances, and receiving stream impairments and threats;

B. Identify water quality improvements or degradation

5.2. Interim Monitoring

Until such time as EPA has approved the Revised Monitoring Plan, the Permitee shall implement the following monitoring program:

5.2.1. Wet Weather Discharge Monitoring

The Permittee shall monitor for the parameters identified in Table 3 herein, at the locations listed in Table 4 herein. Monitoring frequency for chemical/physical parameters shall be taken by at least three times per year at a minimum. This does not include a geomorphologic assessment and/or physical habitat assessment. The Permittee shall conduct sampling as provided in 40 C.F.R. § 122.21(g)(7).

The Permittee shall monitor and provide an annual Discharge Monitoring Report for the period of interim monitoring, not to exceed two years.

TABLE 4
Monitoring Stations

A. Anacostia River Sub Watershed Monitoring Sites
1. Gallatin Street & 14th Street N.E. across from the intersection of 14 th St. and Gallatin St. in an outfall (MS-2)
2. Anacostia High School/Anacostia Recreation Center – Corner of 17th St and Minnesota Ave SE
B. Rock Creek Subwatershed Monitoring Sites
1. Walter Reed -- Fort Stevens Drive -- 16th Street and Fort Stevens Road, N.W. at an outfall (MS-6)
2. Soapstone Creek -- Connecticut Avenue and Ablemarle Street N.W. at an outfall (MS-5)
C. Potomac River Subwatershed Monitoring Sites
1. Battery Kemble Creek-49th and Hawthorne Streets, N.W. at an outfall (MS-4)
2. Oxon Run-Mississippi Avenue and 15th Street, S.E. into Oxon Run via an outfall (MS-1)

The District may revise this list of sites in accordance with its revised monitoring plan in Section 5.1 herein. Otherwise, changes to the above MS4 monitoring stations and/or sites for any reason shall be considered a major modification to the permit subject to the reopener clause.

5.2.2 Storm Event Data

In addition to the parameters listed above, the Permittee shall continue to maintain records of the date and duration (in hours) of the storm events sampled; rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff; the duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and a calculated flow estimate of the total volume (in gallons) and nature of the discharge sampled.

5.2.3 Sample Type, Collection, and Analysis

The following requirements apply only to samples collected for Part 5.2.1 herein -- Representative Monitoring.

1. For discharges from holding ponds or other impoundments with a retention period greater than 24 hours, (estimated by dividing the volume of the detention pond by the estimated volume of water discharged during the 24 hours previous to the time that the sample is collected) a minimum of one sample shall be taken for pollutants listed in Table 3 including temperature, DO, pH and specific conductivity. For all parameters, data shall be reported for the entire event of the discharge pursuant to 40 C.F.R. § 122.26(d)(2)(iii).

2. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Samples may be taken with a continuous sampler or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge, with each aliquot being separated by a minimum period of fifteen minutes.

3. Analysis and collection of samples shall be done in accordance with the most recent EPA approved laboratory methods and procedures specified at 40 C.F.R. Part 136 and its subsequent amendments.

5.2.4 Sampling Waiver

When a discharger is unable to collect samples due to adverse climatic conditions, the discharger must submit in lieu of sampling data a description of why samples could not be collected, including available documentation of the event.

Adverse climatic conditions which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high

winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

5.3 Monitoring Plan Implementation

Upon approval of the Revised Monitoring Plan by EPA Region III, or 2 years from the effective date of this permit, whichever comes first, the Permittee shall begin implementation of the Revised Monitoring Plan.

5.4 Dry Weather Monitoring

5.4.1 Dry Weather Screening Program

The Permittee shall continue with ongoing efforts to detect the presence of illicit connections and improper discharges to the MS4 pursuant to the District SWMP dated February 19, 2009. The Permittee shall perform the following: (1) continue to screen known problem sewersheds within the District based on past screening activities; (2) continue to inventory all MS4 outfalls in the District and inspect all outfalls by the end of the Permit term; and (3) ensure that the dry weather screening program has addressed all watersheds within the Permit term. The screening shall be sufficient to estimate the frequency and volume of dry weather discharges and their environmental impact.

5.4.2 Screening Procedures

Screening may be developed and/or modified based on experience gained during actual field screening activities. The Permittee shall establish a protocol which requires screening to ensure that such procedures are occurring, but such protocol need not conform to the procedures published at 40 C.F.R. § 122.26(d)(1)(iv)(D). The Permittee shall describe the protocol actually used in each Annual Report with a justification for its use. The procedures described in the February 19, 2009 SWMP shall be used as guidance.

5.4.3 Follow-up on Dry Weather Screening Results

The Permittee shall continue to implement its enforcement program for locating and ensuring elimination of all suspected sources of illicit connections and improper disposal identified during dry weather screening activities. The Permittee shall report the results of such implementation in each Annual Report.

5.5. Area and/or Source Identification Program

The Permittee shall continue to implement a program to identify, investigate, and address areas and/or sources within its jurisdiction that may be contributing excessive levels of pollutants to the MS4 and receiving waters, including but not limited to those pollutants identified in Table 3 herein.

5.6 Flow Measurements

The Permittee shall continue to select and use appropriate flow measurement devices and methods consistent with accepted scientific practices to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device.

5.7 Monitoring and Analysis Procedures

1. Monitoring must be conducted according to laboratory and test procedures approved under 40 C.F.R. Part 136 and subsequent amendments, unless other test procedures have been specified in the permit.

2. The Permittee is authorized to use a more current or sensitive (i.e., lower) detection method than the one identified in 40 C.F.R. Part 136 exists for a particular parameter, including but not limited to PCBs (Method 1668B) and mercury (Method 1613E). If used, the Permittee shall report using the more current and/or more sensitive method for compliance reporting and monitoring purposes.

3. EPA reserves the right to modify the Permit in order to require a more sensitive method for measuring compliance with any pollutant contamination levels, consistent with 40 CFR, Part 136, should it become necessary.

5.8 Reporting of Monitoring Results

The Permittee shall continue to report monitoring results annually in a Discharge Monitoring Report. Monitoring results obtained during the previous year shall be summarized and reported in the Annual Report postmarked no later than the effective date of the permit of the following year. The original and one copy of the Report are to be submitted to EPA at the following address:

NPDES Permits Branch
U.S. EPA Region III (3WP41)
Water Protection Division
1650 Arch Street
Philadelphia, PA 19103-2029

National Marine Fisheries Service/Northeast Region
Protected Resource Division
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

District Department of the Environment
Water Quality Division
1200 1st St, 6th Floor
Washington, D.C. 20002

5.9 Additional Monitoring by the Permittee

If the Permittee monitors (for the purposes of this permit) any pollutant more frequently than required by this permit, using laboratory and test procedures approved under 40 C.F.R. Part 136 and subsequent amendments or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the annual Discharge Monitoring Report. Such frequency shall also be indicated.

5.10 Retention of Monitoring Information

The Permittee shall continue to retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation for a period of at least five (5) years from the expiration date of this Permit. This period may be extended by request of EPA at any time.

5.11 Record Contents

Records of monitoring information shall include:

1. The date, exact place, time and methods of sampling or measurements:

2. The individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;

4. The individual(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of such analyses.

6. REPORTING REQUIREMENTS

The Permittee shall comply with the reporting requirements identified in this section, including but not limited to the deliverables identified in Table 5 below.

TABLE 5
Permit Deliverables

Submittal	Deadline
Outfall Discharge Monitoring Report	Each year on the effective date of the permit (EDOP) consistent with Paragraph IV.A.1.
Annual Report/Implementation Plan (Consolidated)	Each year on the EDOP.
Potomac River TMDL Implementation Plan	One year after EPA approval of the Potomac River TMDLs.
Anacostia River Trash TMDL Implementation Plan	One year after EPA Approval of the Trash TMDL for the Anacostia River.
SWMP and MS4 Permit Application	Six months prior to the permit expiration date.

6.1 Discharge Monitoring Reports

The Permittee shall provide discharge monitoring reports on the quality of stormwater discharges from the MS4 from monitoring as stipulated in Part 5 of this permit.

6.2 Annual Reporting/Implementation Plan (Consolidated)

The Permittee shall submit an Annual Report/Implementation Plan, which is to be provided to EPA on the effective yearly date of the permit for the duration of the permitting cycle.

6.2.1. Annual Report. The Annual Report portion of the submission shall follow the format of the Permit as written, and include at a minimum, the following elements:

a. A review of the status of program implementation and compliance (or non-compliance) with all schedules of compliance contained in this permit, including documentation as to compliance with performance standards contained in Section 4 herein;
b. A review of monitoring data and any trends in estimated cumulative annual pollutant loadings, including TMDL WLAs and TMDL Implementation Plans;
c. An assessment of the effectiveness of controls established by the February 19, 2009 SWMP;
d. An assessment of the projected cost of the February 19, 2009 SWMP and a description of the Permittee's budget for existing stormwater programs, including: (i) an overview of the Permittee's financial resources and budget, (ii) overall

indebtedness and assets, (iii) sources for funds for stormwater programs; and (iv) a demonstration of adequate fiscal capacity to meet the requirements of this Permit, notwithstanding the (a) the federal Anti-Deficiency Act, 31 U.S.C. §§ 1341, 1342, 1349, 1351, (b) the District of Columbia Anti-Deficiency Act, D.C. Official Code §§ 47-355.01-355.08 (2001), (c) D.C. Official Code § 47-105 (2001), and (d) D.C. Official Code § 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time;

e. A summary describing the number and nature of enforcement actions, inspections, and public education programs and installation of control systems;

f. Identification of water quality improvements or degradation through application of a measurable performance standard as stated throughout this Permit;

g. Results of storm and water quality modeling and its use in planning installation of control systems and maintenance and other activities;

h. An assessment of any February 19, 2009 SWMP modifications needed to reduce the discharge of pollutants to meet the requirements given in 40 C.F.R. § 122.26(d)(2)(iv);

i. Revisions, if necessary, to the assessments of controls and the fiscal analysis reported in the permit application under 40 C.F.R. § 122.26(d)(2)(iv) and (v);

j. A cost-benefit and affordability analysis to determine the commitments for the next year;

k. Methodology to assess the effects of the February 19, 2009 Stormwater Management Program (SWMP) in reducing pollution and achieving the requirements of the Clean Water Act and the requirements of 40 C.F.R. § 122.26(D)(2)(iv),(v), and(vi);

l. Annual expenditures and budget for the year following each annual report;

m. A summary of commitments for the next year and evaluation of the commitments from the previous year;

n. A summary of the monitoring data for stormwater and ambient sampling that is collected in the previous year and the plan, including identification of monitoring locations, to collect additional data for the next year;

o. The percentage of impervious cover reduced annually through the District's Updated Master LID Implementation Plan, including but not limited to the number and square footage of green roofs installed in the District; and

p. Percentage of impervious cover within the District, broken down by the three major watersheds in the District (Anacostia, Potomac and Rock Creek).

6.2.2 Implementation Plan. The Implementation Plan portion of the submission shall analyze in detail the work to be performed in each successive one-year increment by identifying and evaluating the previous year's efforts based on a cost benefit and affordability analysis. The Plan shall include an established measurable performance standard for each of the MS4 Program activities. The basis for each of the performance standards which will be used as tools for evaluating environmental results and determining the success of each MS4 activity listed in the Plan shall be described incorporating, when practicable, an integrated program approach that considers all programs and projects which have a direct as well as an indirect affect on stormwater management quantity and quality within the District. The Plan shall also

provide an update of the fiscal analysis for each year of the permit as required by 40 C.F.R. § 122.26(d)(2)(vi).

The reporting requirements of Table 6 below apply to each of the 12 components of the District's SWMP. All components of the SWMP shall be implemented and updated in accordance with the February 19, 2009 SWMP. Reporting deadline is with each Annual Report.

TABLE 6
Stormwater Management Program Components

SWMP Component
1. Management Plan for Commercial, Residential, and Government Areas
2.Management Plan for Industrial Facilities
3. Management Plan for Construction Sites
4. Flood Control Projects
5. Monitor and Control of Pollutants from Municipal Landfills or Other Municipal Waste Facilities
6. Monitor and Control Pollutants from Hazardous Waste Sites
7. Pesticides, Herbicide, and Fertilizer Application
8. Deicing Activities
9. Snow Removal
10. Management Plan to Detect and Remove Illicit Discharges
11. Enforcement Plan
12. Public Education

These reporting requirements are governed by the schedules presented in Table 5.

i. Reporting on Funding.

The Permitttee shall coordinate and facilitate a collaborative effort among relevant city agencies and departments to develop and recommend the level of expenditures necessary for the activities required in the Annual SWMP Reports and the SWMP Implementation Plans based on a cost-benefit analysis. If the recommended Report(s)/Plan(s) are not funded by the Mayor, the City Council and/or U.S. Congress, then a written explanation will be provided by the District of Columbia Department of the Environment within 30 days after a decision is reached by higher authorities. A written report on the above requests and decisions will also be incorporated into

each Annual Report(s) and Plan(s). In each submittal, an explanation will indicate why the recommended funding was not approved. Once the SWMP Annual Report and SWMP Annual Implementation Plan are developed by this procedure, failure by the District to carry out the minimum requirements in the Reports or Plans would be a violation of this permit.

Based on the level of funding available and a cost-benefit analysis, an evaluation shall be made in each Annual SWMP Implementation Plan as to the benefit of implementing various types of structural and non-structural controls. The effect of the number and type of annual maintenance, inspections, and other program requirements will also be taken into account. Several alternatives will be considered in searching for the optimum approach. The alternatives will be evaluated in terms of a cost-benefit analysis, taking into account the availability of funding and other environmental obligations of the District. The Permittee shall not be entitled to rely on non-affordability as a defense for noncompliance with conditions of this Permit.

6.2.3. Annual Report/Implementation Plan Revisions. Each Annual SWMP Report and SWMP Implementation Plan may be revised with written approval by EPA. The revised Report or Plan will become effective after its approval.

6.2.4 Signature and Certification. The Permittee shall sign and certify the Annual Report/Implementation Plan (consolidated) in accordance with Part 6.2 herein and include a statement or resolution that the Permittee's governing body or agency (or delegated representative) has reviewed or been appraised of the content of such submissions. The Permittee shall provide a description of the procedure used to meet the above requirement.

6.2.5 Effect of Non-Submittal or Non-Signature. Failure to submit an Annual SWMP Report and/or Annual SWMP Implementation Plan, according to the signatory requirements in Part VII.F, and by the deadlines identified in Table 4 herein, is a violation of this permit.

6.2.6 EPA Approval. In reviewing any submittal identified in Table 5, EPA may approve or disapprove each submittal. If EPA disapproves any submittal, EPA shall provide comments to the Permittee. The Permittee shall address such comments in writing within thirty (30) days of receipt of the disapproval from EPA. If EPA determines that the Permittee has not adequately addressed the disapproval/comments, EPA may revise that submittal or portions of that submittal. Such revision by EPA is effective thirty (30) days from receipt by the Permittee. Once approved by EPA, or in the event of EPA disapproval, as revised by EPA, each submission shall be an enforceable element of this permit.

6.3 Updated SWMP and MS4 Permit Application

The Permittee shall develop an Updated SWMP and Permit Application based on the findings presented in each of the Annual SWMP Reports, and Annual SWMP Implementation Plans submitted during the permitting cycle. All the improvements and modifications to the District‘s existing SWMP dated February 19, 2009 shall be made in the Updated SWMP to be submitted six months prior to the expiration date of the permit. The Updated SWMP shall define

the goals of the SWMP and provide an analysis to assure EPA that these goals will be achieved according to the schedule to be included in the Updated Plan. The Updated SWMP shall define what has to be done to meet the requirements of the Clean Water Act and a schedule for accomplishing these tasks.

One of the purposes of the SWMP is to develop a master plan pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(A) to determine the structural and source measures to reduce pollutants from runoff. Such control systems shall include those given in the SWMP dated February 19, 2009.

7. **STORMWATER MODEL**

The Permittee shall continue to update and report all progress made in developing a Stormwater Model and Geographical Information System (GIS) to EPA on an annual basis as an attachment to each Annual Report/Implementation Plan required herein.

On an annual basis, the Permittee shall report on pollutant load reductions throughout the area covered by this Permit using the statistical model developed by DDOE or other appropriate model. In the annual update, the Permittee shall include, at a minimum, other applicable components which are not only limited to those activities identified in Section 6 herein, but which are necessary to demonstrate the effectiveness of the Permittee's Stormwater Management Program toward implementing a sustainable strategy for reducing stormwater pollution runoff to the impaired waters of the District of Columbia.

Assess performance of stormwater on-site retention projects through monitoring, modeling and/or estimating storm retention capacity to determine the volume of stormwater removed from the MS4 system in a typical year of rainfall as a result of implementing stormwater controls. This provision does not require all practices to be individually monitored, only that a reasonable evaluation strategy must provide estimates of overall volume reductions by sewershed.

8. **OTHER APPLICABLE PROVISIONS**

8.1. WQS and TMDL WLA Implementation Plans and Compliance Monitoring.

1. The Permit includes all TMDL WLAs applicable to the District MS4 approved or established as of the effective date of this Permit.

2. No later than one year from the effective date of this Permit, the Permitttee shall submit to the permitting authority updates to the Anacostia and Rock Creek Implementation Plans. This does not pertain to the schedule identified in Table 5 for submission of TMDL Implementation Plans for the Potomac River or the Anacostia River Trash TMDL. Water quality-based effluent limits for stormwater discharges that implement WLAs in TMDLs may be

expressed in the form of management practices under specified circumstances. *See* 33 U.S.C. §1342(p)(3)(B)(iii); 40 C.F.R. §122.44(k)(2)&(3). If management practices alone adequately implement the WLAs, then additional controls will not be necessary. The sediment TMDLs and their implementation plans are incorporated by reference as the implementation plans for achieving the metals, nutrients, and other toxic and non-conventional pollutants that are naturally present in soils as the loading reduction specified in several TMDLs. Many of these pollutants are present as particulates and will be removed with other particles. Dissolved forms of pollutants are often absorbed or adsorbed to particulate matter and can also be removed along with the particulates (i.e., sediment). Further, management practices in similar watersheds or receiving stream, segment of the stream, or other water body are expected to achieve similar reductions. Effluent limitations that reduce turbidity in the stormwater discharge are also expected to achieve reductions of the other pollutants of concern.

3. To be eligible for approval by EPA, each TMDL Implementation Plan and any subsequent updates and/or modifications to them must contain at a minimum:

A. A specified ultimate date for final compliance with the WLA.

B. A set of controls for achieving the MS4 WLA, which may include stormwater pollution reduction and elimination laws and regulations, LID Implementation as set forth in section 4.1.1 herein, municipal operations to reduce the discharge of pollutants in stormwater as set forth in Section 4.2 herein, and other management practices. The set of controls may be adapted as opportunities change, as long as interim deadlines for WLAs are still met.

C. Numeric benchmarks which specify annual pollutant load reductions and the extent of control actions for achieving these annual benchmarks.

D. An interim compliance deadline for achieving the percentage of pollutant load reductions specified in the implementation plan for that WLA by, at the latest, the end of the Permit term.

E. Demonstration, using modeling and/or current best practices, how the WLA will be achieved using the chosen controls, by the date for ultimate achievement. An annual evaluation can be based upon either presumed pollutant reductions from management practices implementation or actual monitoring data. If an annual evaluation of monitoring data indicates that these practices are insufficient progress towards meeting the WLA, the Permittee shall adjust its management towards meeting the water quality standards and appropriate TMDLs.

F. Specific public involvement actions, to engage the public in a meaningful way in the process of developing the TMDL implementation plan, including in the identification of a compliance deadline and selection of pollution controls. The Permittee shall begin including the public in such discussions no later than six months from the date of the TMDL WLA approval.

G. Sufficient monitoring for chemical constituents listed in Table 3 in each TMDL watershed to enable timely, iterative evaluation of the implementation plan, and require management responses if monitoring reveals insufficient progress toward meeting the WLA within the specified timeframe. . For TMDL pollutants not included in Table 3, pollutant load reductions will be estimated using BMP efficiencies in place of monitoring data.The monitoring elements, and pollutant load reductions estimated using BMP efficiencies, shall at a minimum, describe:

i. How the extent of pollution control implementation is being tracked; and
ii. Quantified progress in meeting the implementation benchmarks.

H. The TMDL Implementation Plan elements required in this section will become enforceable permit terms upon approval of such Plans, including the interim and final WLA achievement dates in this section.

In addition to the duty to comply with the discharge limitations in Part 9.1 of this Permit, the Permittee shall demonstrate compliance as described in this Part and in Part 5 herein (Monitoring and Assessment of Controls). In accordance with the schedule identified in Table 5 herein, the Permittee shall further submit implementation plans/modifications to existing plans to reduce discharges consistent with any applicable EPA-approved WLA component of any established TMDL. An applicable TMDL WLA for this Permit means any WLA in any TMDL established on, modified during, or approved by EPA for a receiving stream, segment of a stream, or other water body within the District of Columbia to which the MS4 system discharges.

EPA has identified all applicable TMDL WLAs and the associated reductions from current estimated loadings in approved Agency documents (Refer to the District Department of the Environment's website for a listing of the DC TMDLs on its webpage and the Anacostia River/Rock Creek TMDL Implementation Plans).

For the pollutants listed in Table 3, demonstration of compliance will be calculated using the procedures (i.e., Simple Method) identified in the SWMP dated February 19, 2009, approved Anacostia River TMDL Implementation Plan dated February 19, 2005, , and/or other appropriate modeling tools and data on BMP efficiencies. The Permittee will report such information by comparing the monitoring data for that pollutant to the approved pollutant according to the procedures required by the Permit herein, specific WLAs and its associated stormwater load reductions for the receiving water body.

The Permittee shall report to EPA the results of this analysis through Annual Reports in accordance with the compliance schedule in this Permit. If the analysis concludes that the MS4 discharge monitored for that specific pollutant is not meeting pollutant-specific WLAs, the Permittee shall develop, through the Annual Reports in accordance with the compliance schedule in this Permit, recommendations for correction of the non compliance problems. The Plan/Modifications shall consist of documenting all previous and on-going efforts at achieving

the specific pollutant reductions identified in the TMDL WLA and further demonstrating additional controls sufficient to achieve those reductions through an established performance based benchmark. This benchmark shall be applied against annual projected performance standards for purposes of revising the final implementation plan when determining measurable progress to achieve adequate reduction.

The Permittee shall perform an assessment of each TMDL Implementation Plan, including an assessment of each of the following program elements: street sweeping; inspection and enforcement; public outreach; constructed green technology practices and other management practices; and evaluation of load reductions. The Permittee shall submit this assessment to EPA as part of the Stormwater Management Plan for review and approval. The assessment methodology for each Plan approved shall demonstrate at least an overall stormwater pollutant reduction percentage from the baseline monitoring program for each watershed during the Permit term, for purposes of achieving TMDL WLAs. EPA reserves the right after a review and approval of each plan modification/annual report to modify this permit for purposes of requiring additional numeric and/or narrative effluent controls on the discharge of pollutants from the MS4. EPA shall make the results of any such determination(s) in writing available to the Permittee and other interested persons including, but not limited to members of the District of Columbia MS4 Task Force. Currently, TMDLs are under development for the Potomac River and for the Anacostia River (Refer to Potomac River Summit for a "Trash Free" River by 2013 and Potomac River Watershed Trash Treaty executed in 2005). Upon approval by EPA, the TMDL implementation plan(s) shall be incorporated into the SWMP in accordance with the compliance schedule in Part III.A and Table 4 of this Permit.

The Permittee shall submit to EPA the applicable TMDL Implementation Plans for the Potomac River and for the Anacostia River (Trash TMDL) for review and approval in accordance with Table 5 herein. The Permittee shall prepare for implementation of the TMDLs on the following schedule: the TMDL approvals for the Potomac River are expected to occur in the January 2011 time frame and the Anacostia River Trash TMDL is expected to occur in the March 2010 time frame.

If the analysis concludes that the MS4 discharge monitored for that specific pollutant is not meeting approved implementation plan schedules for the pollutant-specific WLAs, the Permittee shall develop through the Annual Reports in accordance with the compliance schedule in this Permit recommendations for correction of the non-compliance problems.

8.1.1 Potomac River TMDL Implementation Plan

The Permittee shall develop and implement one consolidated Potomac River TMDL Implementation Plan using the format of the previously-approved Anacostia River and Rock Creek Implementation Plans in accordance with Section 8.1 above and with the schedule provided in Table 5 of this Permit. As part of the consolidated Annual Report/Implementation Plan, the Plan shall be assessed and evaluated for WLAs reductions in accordance with the schedule in Section 8.1 above. All elements of the approved subject TMDL Implementation

Plan shall be enforceable conditions of the Permit upon approval by EPA, including interim and final WLA achievement dates.

8.1.2 Anacostia River Trash TMDL Implementation Plan

The Permittee shall develop and implement an Anacostia River TMDL Implementation Plan in accordance with Section 8.1 above and with the schedule provided in Table 5 of this Permit. As part of the consolidated Annual Report/ Implementation Plan and assessed and evaluated for WLAs reductions in accordance with Section 8.1 above. All elements of the approved subject TMDL Implementation Plan shall be enforceable conditions of the Permit upon approval by EPA, including interim and final WLA achievement dates.

8.2 Compliance Monitoring with Water Quality-Based Effluent Limitations

EPA reserves the right to modify the Permit as needed, when monitoring results set forth in Sections 5 and 8 of the permit show that current practices required by this Permit are not sufficient to minimize pollutants in stormwater discharges or other unauthorized discharges into the MS4 System as necessary to comply with standards contained in section 1.4 herein.

8.3 Hickey Run

Throughout the life of the Permit, the Permittee shall implement and complete the proposed replacement/rehabilitation, inspection and enforcement, and public education aspects of the strategy for Hickey Run as described in Figure 5 of the February 19, 2009 SWMP, which is incorporated herein. In addition, the Permittee shall continue efforts to install an end-of-pipe BMP to address TMDL pollutants of concern in Hickey Run

At a minimum, the Permittee shall monitor at the Fort Lincoln-Newtown Inlet site and the three other stations one upstream from the Fort Lincoln-Newton Inlet site and one downstream from that site, to evaluate progress with the Hickey Run Strategy. Such monitoring shall be performed contemporaneously with the Anacostia River Subwatershed Monitoring site (Gallatin Street & 14th St. NE) described in Section 5.0, Table 4, of the Permit.

If monitoring results indicate additional measures are necessary, the Permittee shall implement the catch basin retrofit aspect of the proposed strategy for Hickey Run or other management strategies at least as effective.

9. STANDARD PERMIT CONDITIONS FOR NPDES PERMITS

9.1 Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and may result in an enforcement action; permit termination, revocation and reissuance, or modification; and denial of a permit renewal application.

9.2 Inspection and Entry

The Permittee shall allow EPA, or an authorized representative, and/or the District's contractor(s)/subcontractor(s), upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Permittee's premises at reasonable times where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be maintained under the conditions of this Permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), processes, or operations regulated or required under this Permit; and

4. Sample or monitor at reasonable times, for the purpose of assuring Permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

9.3 Civil and Criminal Penalties for Violations of Permit Conditions

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

The Clean Water Act provides that any person who violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act, or any permit condition or limitation implementing such section, or any requirement imposed in an approved pretreatment program and any person who violates any Order issued by EPA under Section 301(a) of the Act, shall be subject to a civil penalty not to exceed $25,000 per day for each violation, Pursuant to the Civil Monetary Penalty Inflation Adjustment Rule, EPA has raised the statutory maximum penalty for such violations to $37,500 per day for each such violation. 74 Fed. Reg. 626 (Jan. 7, 2009). The Clean Water Act also provides for an action for appropriate relief including a permanent or temporary injunction.

Any person who negligently violates Section 301, 302, 305, 307, 308, 318, or 405 of the Clean Water Act, any permit condition or limitation implementation any such section, shall be punished by a criminal fine of not less than $5,000 nor more than $50,000 per day of such violation, or by imprisonment for not more than 3 years, or by both. Any person who knowingly violates any permit condition or limitation implementing Section 301, 302, 305, 307, 308, 318, or

405 of the Clean Water Act, and who knows at the time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000, or by imprisonment of not more than 15 years, or by both.

9.4 Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

In the event that the Permittee or permitting authority determines that discharges are causing or contributing to a violation of applicable WQS, the Permittee shall take corrective action as soon as possible to eliminate the WQS exceedance or correct the issues and/or problems by requiring the party or parties responsible for the alleged violation(s) comply with Part I.C.1 (Limitations to Coverage) of this Permit. The methods used to correct the WQS exceedances shall be documented in subsequent annual reports and in revisions to the Stormwater Management Plan dated February 19, 2009.

9.5 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this permit;

2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;

4. Information newly acquired by the Agency, including but not limited to the results of the studies, planning, or monitoring described and/or required by this permit;

5. Material and substantial facility modifications, additions, and/or expansions;

6. Any anticipated change in the facility discharge, including any new significant industrial discharge or changes in the quantity or quality of existing industrial discharges that will result in new or increased discharges of pollutants; or

7. A determination that the permitted activity endangers human health or the environment and that it can only be regulated to acceptable levels by permit modification or termination.

The effluent limitations expressed in this Permit are based on compliance with the District of Columbia's water quality standards in accordance with the Clean Water Act. In the

event of a revision of the District of Columbia's water quality standards, this document may be modified by EPA to reflect this revision.

The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. When a permit is modified, only conditions subject to modification are reopened.

9.6 Retention of Records

The Permittee shall continue to retain records of all documents pertinent to this Permit not otherwise required herein, including but not limited copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the expiration date of this Permit. This period may be extended by request of EPA at any time.

9.7 Signatory Requirements

All Discharge Monitoring Reports, stormwater pollution prevention plans, reports, certifications or information either submitted to EPA or that this permit requires be maintained by the Permittee shall be signed by either a principal executive officer or ranking elected official, or a duly authorized representative of that person. A person is a duly authorized representative only if: (i) the authorization is made in writing by a person described above and submitted to EPA; and (ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for an agency. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new notice satisfying the requirements of this paragraph must be submitted to EPA prior or together with any reports, information, or applications to be signed by an authorized representative.

9.8 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Act, 33 U.S.C. § 1321.

9.9 District Laws, Regulations and Ordinances

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable District law, regulation or ordinance identified in the SWMP dated February 19, 2009. In the case of "exemptions and waivers" under District law, regulation or ordinance, Federal law and regulation shall be controlling.

9.10 Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9.11 Severability

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

9.12 Transfer of Permit

In the event of any change in ownership or control of facilities from which the authorized discharge emanates, the permit may be transferred to another person if:

1. The current Permittee notifies the EPA, in writing of the proposed transfer at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

3. The EPA does not notify the current Permittee and the new Permittee of intent to modify, revoke and reissue, or terminate the permit and require that a new application be submitted.

9.13 Construction Authorization

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9.14 Historic Preservation

During the design stage of any project by the Government of the District of Columbia within the scope of this permit that may include ground disturbance, new and existing or retrofit construction, or demolition of a structure, the Government of the District of Columbia shall notify the Historic Preservation liaison and provide the liaison planning documents for the proposed undertaking. The documents shall include project location; scope of work or conditions; photograph of the area/areas to be impacted and the methods and techniques for accomplishing the undertaking. Depending on the complexity of the undertaking, sketches, plans and specifications shall also be submitted for review. The documentation will enable the liaison to assess the applicability of compliance procedures associated with Section 106 of the National Historic Preservation Act. Among the steps in the process are included:

1. The determination of the presence or absence of significant historic properties (architectural, historic or prehistoric). This can include the evaluation of standing structures and the determination of the need for an archaeological survey of the project area.

2. The evaluation of these properties in terms of their eligibility for nomination to the National Register of Historic Places.

3. The determination of the effect that the proposed undertaking will have on these properties.

4. The development of mitigating measures in conjunction with any anticipated effects.

All such evaluations and determinations will be presented to the Government of the District of Columbia for its concurrence.

If an alternate Historic Preservation procedure is approved by EPA in writing during the term of this permit, the alternate procedure will become effective after its approval.

9.15 Endangered Species

The U.S. Fish and Wildlife Service (FWS) has indicated that Hay's Spring Amphipod, a Federally listed endangered species, occurs at several locations in the District of Columbia. The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) has indicated that the endangered shortnose sturgeon occurs in the Potomac River drainage and may occur within the District of Columbia. The FWS and NOAA Fisheries indicate that at the present time there is no evidence that the ongoing stormwater discharges covered by this permit are adversely affecting these Federally-listed species. Stormwater discharges, construction, or any other activity that adversely affects a Federally-listed endangered or threatened species are not authorized under the terms and conditions of this permit.

The monitoring required by this permit will allow further evaluation of potential effects on these threatened and endangered species once monitoring data has been collected and

analyzed. EPA requires that the Permittee submit to NOAA Fisheries, at the same time it submits to EPA, the Annual Outfall Discharge Monitoring Report of the monitoring data which will be used by EPA and NOAA Fisheries to further assess effects on endangered or threatened species. If this data indicates that it is appropriate, requirements of this NPDES permit may be modified to prevent adverse impacts on habitats of endangered and threatened species.

The above-referenced Report of monitoring data is required under this permit to be sent on an annual basis to:

The United States Environmental Protection Agency
Region III (3WP41)
Water Protection Division
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

National Marine Fisheries Service/Northeast Region
Protected Resource Division
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

9.16 Toxic Pollutants

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Act, 33 U.S.C. § 1317(a), for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, the Permittee shall comply with such standard or prohibition even if the permit has not yet been modified to comply with the requirement.

9.17 Bypass

9.17.1. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.

9.17.2 Notice

1. Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it must submit prior notice, if possible at least ten days before the date of the bypass. See 40 C.F.R. § 122.41(m)(3)(i).

2. Unanticipated bypass. The Permittee must submit notice of an unanticipated bypass as required by 40 C.F.R. § 122.41(l)6) (24-hour notice). See 40 C.F.R. § 122.41(m)(3)(ii).

9.17.3 Prohibition of bypass. See 40 C.F.R. § 122.41(m)(4).

1. Bypass is prohibited, and EPA may take enforcement action against the Permittee for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage as defined herein;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The Permittee submitted notices as required herein.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above.

9.18 Upset

Effect of an upset: An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of 40 C.F.R. § 122.41(n) are met.

9.19 Reopener Clause for Permits

The permit may be modified or revoked and reissued, to incorporate any applicable effluent standard or limitation issued or approved under Sections 301, 304, or 307 of the Clean Water Act, and any other applicable provision, such as provided for in the Chesapeake Bay Agreements based on water quality considerations, and if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

2. Controls any pollutant not limited in the permit. The permit, as modified or reissued under this paragraph, shall also contain any other requirements of the Act then applicable; or

3. The permit may be modified, or revoked and reissued to incorporate additional controls that are necessary to ensure that the permit effluent limits are consistent with any applicable TMDL WLA allocated to the discharge of pollutants from the MS4.

This permit may also be reopened, modified, or revoked and reissued as specified in 40 C.F.R. §§ 122.44(c), 122.62, 122.63, 122.64, and 124.5.

9.20 Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, it must apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit. EPA may grant permission to submit an application less than 180 days in advance but no longer than the permit expiration date. In the event that a timely and complete reapplication has been submitted and EPA is unable through no fault of he Permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

10. PERMIT DEFINITIONS

Terms that are not defined herein shall have the meaning accorded them under section 502 of the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, or its implementing regulations, 40 C.F.R. Part 122.

"Annual Report" refers to the consolidated Annual Report and Implementation Plan that the Permittee is required to submit annually as described in section 6.2 herein.

"Bioretention" means the use of engineered soils and vegetation, often though not always with a sand or gravel layer beneath the soil layer, to reduce and retain a target volume of stormwater from a given site through the functions of: pore space and surface ponding storage; infiltration; extended filtration; reuse, and/or evapotranspiration.
"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. See 40 C.F.R. § 122.41(m)(1)(i).

"CWA" means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L. 97-117, 33 U.S.C. §§ 1251 *et seq.*

"Director" means the Regional Administrator of USEPA Region 3 or an authorized representative.

"Discharge" for the purpose of this permit, unless indicated otherwise, refers to discharges from the Municipal Separate Storm Sewer System (MS4).

"Discharge Monitoring Report", "DMR" or "Outfall Discharge Monitoring Report" includes the monitoring and assessment of controls identified in Section 5 herein.

"EPA" means USEPA Region 3.

“Extended Filtration” means the filtration of stormwater through a medium such as engineered bioretention soil, anchored by vegetation that delays the release of a given volume of stormwater from a given site by a minimum of six hours. Extended filtration units typically are lined bioretention units.

The term “Federal Facilities” shall have the meaning contained in “EPA Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act” (Dec. 2009).

"Goal" means the end results the Permittee is to strive to achieve.

“Green Roof” is a low-maintenance vegetated roof system that stores rainwater in a lightweight soil medium, where the water is taken up by plants and transpired into the air.

“Green Technology Practices” applies to new and re-development and means stormwater management practices that are used to mimic pre-development site hydrology by using site design techniques that retain stormwater on-site through infiltration, evapotranspiration, harvest and use.

"Guidance" means assistance in achieving a goal.

"Illicit connection" means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities, pursuant to 40 C.F.R. § 122.26(b)(2).

“Impaired Water” (or “Water Quality Impaired Water” or “Water Quality Limited Segment”): A water is impaired for purposes of this permit if it has been identified by the District or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State water quality standards (these waters are called “water quality limited segments” under 40 C.F.R. 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

“Internal Sampling Station” means a monitoring site which is located within the Municipal Separate Storm Sewer System (MS4) upstream of an outfall pipe which discharges stormwater directly into a receiving water body.

"Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit (i.e., an area where wastes are applied onto or incorporated into the soil surface [excluding manure spreading operations] for treatment or disposal), surface impoundment, injection well, or waste pile.

"Large or Medium municipal separate storm sewer system" means all municipal separate storm sewers that are either: (1) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 C.F.R. Part 122); or (2) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 C.F.R. Part 122); or (3) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

"MS4" refers to either a Large or Medium Municipal Separate Storm Sewer System.

"Municipal Separate Storm Sewer" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (1) owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes; (2) Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); (3) not a combined sewer; and (4) not part of a Publicly-Owned Treatment Works as defined at 40 C.F.R. § 122.2.

“MS4 Permit Area” shall mean all areas within the corporate boundary of the District of Columbia served by, or otherwise contributing to discharges from, municipal separate storm sewers owned or operated by the District of Columbia.

“Offset” means a unit of measurement, either used as monetary or non-monetary compensation, as a substitute or replacement for mitigation of a stormwater control practice that has been determined to be impracticable to implement.

“Performance measure” means for purposes of this Permit, a minimum set of criteria for evaluating progress toward meeting a standard of performance.

“Performance standard” means for purposes of this Permit, a cumulative measure for evaluating attainment of a goal.

"Permittee" refers to the Government of the District of Columbia and all subordinate District and independent agencies, such as the District of Columbia Water and Sewer Authority, directly accountable and responsible to the City Council and Mayor as authorized under the Stormwater Permit Compliance Amendment Act of 2000 and any subsequent amendments for administrating, coordinating, implementing, and managing stormwater for MS4 activities within the boundaries of the District of Columbia.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other

floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

“Pollutant of concern” means a pollutant in an MS4 discharge that may cause or contribute to the violation of a water quality criterion for that pollutant downstream from the discharge.

“Post-Development Hydrology” means the combination of runoff, infiltration and evapotranspiration rates, volumes, durations and temperatures that exist on the site following human-induced land disturbance.

“Pre-Development Hydrology” means the combination of runoff, infiltration and evapotranspiration rates, volumes, durations and temperatures that typically existed on the site before human-induced land disturbance occurred.

“Retrofit” means improvement(s) to an existing or new the stormwater conveyance system.

"Significant spills" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous oil or hazardous substances in excess of reportable quantities under section 311 of the CWA (see 40 C.F.R. § 110.10 and C.F.R. C.F.R. § 117.21) or section 102 of CERCLA (see 40 C.F.R.. § 302.4).

“Stormwater” means the flow of surface water which results from, and which occurs immediately following, a rainfall event, snow melt runoff, and surface runoff and drainage.

“Stormwater management” means (1) for quantitative control, a system of vegetative or structural measures, or both, which reduces the increased volume and rate of surface runoff caused by man-made changes to the land; and (2) for qualitative control, a system of vegetative, structural, and other measures which reduce or eliminate pollutants which might otherwise be carried by surface runoff.

“SWMP” is an acronym for Stormwater Management Plan/Program. For purposes of this permit, the term includes all stormwater activities described in the District's SWMP dated October 19, 2002, updated February 19, 2009, and all other documents and related correspondences embodied under the tier of the program document from the previous Permit and to be generated from this Permit.

“Severe property damage” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 C.F.R. § 122.41(m)(1)(ii).

"Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw

materials used in food processing or production; hazardous oil or hazardous substances in excess of reportable quantities under section 311 of the CWA (see 40 C.F.R. § 110.10; 117.21) or section 102 of CERCLA (see 40 C.F.R. §302.4).

"Total Maximum Daily Load (TMDL) Units" means for purposes of this Permit, the sum of individual waste load allocations (WLAs) and natural background. Unless specifically permitted otherwise in an EPA-approved TMDL report covered under the Permit, TMDLs are expressed in terms of mass per time, toxicity or other appropriate measure such as pollutant pounds of a total average annual load.

"TMDL Implementation Plan" means for purposes of this Permit, a plan and subsequent revisions/updates to that plan that are designed to demonstrate how to achieve compliance with applicable waste load allocations as set forth in the permit requirements described in Section 8.1.4.

"Stormwater Management Program (SWMP)" is a modified and improved SWMP based on the existing SWMP and on information in each of the Annual Reports/Implementation Plans/Discharge Monitoring Reports. The goal of the SWMP is to describe the list of activities that need to be done to meet the requirements of the Clean Water Act, an explanation as to why these activities will meet the Clean Water Act requirements, and a schedule for those activities, taking into account the cost benefit and affordability analysis to be done in each of the Annual Implementation Plans.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 C.F.R. § 122.41(n)(1).

"Waste pile" means any non-containerized accumulation of solid, nonflowing waste.

"Water quality standards" refers to the District of Columbia's Surface and Ground Water Quality Standards codified at Code of District of Columbia Regulations §§ 21-1100 *et seq.*, which are effective on the date of issuance of the Permit and any subsequent amendments which may be adopted during the life of this Permit.

"Waters of the United States" is defined at 40 C.F.R. § 122.2.

Draft NPDES Permit No. DC0000221

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL SEPARATE STORMWATER SYSTEM PERMIT

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*

Government of the District of Columbia
The John A. Wilson Building
1350 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

is authorized to discharge from all portions of the municipal separate storm sewer system owned and operated by the District of Columbia to receiving waters named:

Potomac River, Anacostia River, Rock Creek and stream segments tributary to each such water body

in accordance with the Stormwater Management Program(s) dated February 19, 2009, and related reports, effluent limitations, monitoring requirements and other conditions set forth in Parts I through IX herein.

The effective issuance date of this permit is: _____.

This permit and the authorization to discharge shall expire at midnight, on: _____.

Signed this _____ day of _____, 2010.

_____
Jon M. Capacasa, Director
Water Protection Division
U.S. Environmental Protection Agency
Region III

PERMIT FOR THE DISTRICT OF COLUMBIA'S
MUNICIPAL SEPARATE STORM SEWER SYSTEM

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10. PERMIT DEFINITIONS

1. DISCHARGES AUTHORIZED UNDER THIS PERMIT

1.1 Permit Area

This permit covers all areas within the corporate boundary of the District of Columbia served by, or otherwise contributing to discharges from, the Municipal Separate Storm Sewer System (MS4) owned or operated by the District of Columbia (hereinafter, "MS4 Permit Area").

1.2 Authorized Discharges

This permit authorizes all stormwater point source discharges to waters of the United States from the District of Columbia's MS4 that comply with the requirements of this permit. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate NPDES permits [1].

This permit authorizes the following non-stormwater discharges to the MS4 when appropriate stormwater activities and controls required through this permit have been applied and which are: (1) discharges resulting from clear water flows, roof drainage, water line flushing, landscape irrigation, ornamental fountains, diverted stream flows, rising ground waters, uncontaminated ground water infiltration to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation waters, springs, footing drains, lawn watering, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, wash water, fire fighting activities, and similar types of activities; and (2) which are managed so that water quality is not impaired and that the requirements of the federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, and EPA regulations are met.

1.3 Limitations to Coverage

1.3.1 Non-stormwater Discharges

The Permittee, as defined herein, shall effectively prohibit non-stormwater discharges into the MS4, except to the extent such discharges are regulated with an NPDES permit [2].

1.3.2 Waivers and Exemptions [3,4]

This permit does not authorize the discharge of any pollutant from the MS4 which arises from or is based on any existing waivers and exemptions," that may otherwise apply and are not consistent with the Federal Clean Water Act and other pertinent guidance, policies, and regulations. This narrative prohibition on the applicability of such waivers and exemptions extends to any activity that would otherwise be authorized under District law, regulations or ordinance but which impedes the reduction or control of pollutants through the use of stormwater

control measures and/or prevents compliance with the narrative /numeric effluent limits of this Permit. Any such discharge not otherwise authorized may constitute a violation of this permit.

1.4 Discharge Limitations

The Permittee must manage, implement and enforce a stormwater management program (SWMP) in accordance with the Clean Water Act and corresponding stormwater NPDES regulations, 40 C.F.R. Part 122, to meet the following requirements:

1. Effectively prohibit pollutants in the stormwater discharges or other unauthorized discharges into the MS4 System as necessary to comply with existing District of Columbia Water Quality standards (DCWQS);

2. Be consistent with applicable waste load allocations (WLAs) for each approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with 33 U.S.C. § 1342(p)(3)(B)(iii); 40 C.F.R. § 122.44(k)(2) and (3); and

33 U.S.C.§ 1342(p)(3)(B)(iii) – Permit requirement - (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

§ 122.44(k)(2) and (3) - Best management practices (BMPs) to control or abate the discharge of pollutants when:
(2) Authorized under section 402(p) of the CWA for the control of storm water discharges;
(3) Numeric effluent limitations are infeasible; or

3. No increase in pollutant loadings from discharges from the MS4 may occur to receiving waters.

Compliance with all performance standards and provisions contained in this Permit shall constitute progress toward compliance with DCWQS.

2. LEGAL AUTHORITY, RESOURCES AND STORMWATER PROGRAM ADMINSTRATION

2.1 Legal Authority[5]

1. The Permittee must have adequate legal authority to control discharges to and from the Municipal Separate Storm Sewer System (MS4) in order to prevent or reduce the discharge of pollutants to achieve water quality objectives. Any deficiencies in the legal authority to carry out these requirements shall be remedied as soon as possible in accordance with the District's legislative process. Any changes to or deficiencies in the legal authority shall be explained in each Annual Report.

2. No later than one year following the effective date of this Permit, the District shall update and implement Chapter 5 of Title 21 of District of Columbia Municipal Regulations (Water Quality and Pollution) ("updated DC Stormwater Regulations"), to address the control of stormwater throughout the MS4 Permit Area. Such regulations shall be at least as protective of water quality as the federal Clean Water Act and its implementing regulations require.

3. The Permittee shall use its existing legal authority to control discharges to and from the Municipal Separate Storm Sewer System (MS4) in order to prevent or reduce the discharge of pollutants to achieve water quality objectives. To the extent deficiencies can be addressed through regulation or other Executive Branch action, the Permtitee shall remedy such deficiencies within 120 days. Deficiencies that can only be addressed through legislative action shall be remedied as expeditiously as possible in accordance with the District's legislative process. Any changes to or deficiencies in the legal authority shall be explained in each Annual Report.

4. The intent of this provision is not to prohibit the Permittee's ability to enter into inter-jurisdictional agreements with other District agencies and/or other jurisdictions affected through this Permit.

5. Review and revise, where applicable, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of the following standards: (1) standards resulting from issuance of District stormwater regulations required by Section 2.1, paragraph 1 herein; and (2) performance standards required by this Permit.

2.2 Fiscal Resources

The Permittee, including all agencies and departments of DC as specified in section 2.3 below, shall provide adequate finances, staff, equipment, and support capabilities to implement the existing Stormwater Management Program (SWMP) dated February 19, 2009 and the provisions of this permit. Each annual report under Part 6 of this Permit shall include a demonstration of adequate fiscal capacity to meet the requirements of this Permit.

2.3 Stormwater Management Program Administration/Permittee Responsibilities[6]

1. The Government of the District of Columbia is the Permittee, and all activities of all agencies, departments, offices and authorities of the District must comply with the requirements of this Permit. The Permittee has designated the District Department of the Environment (DDOE) as the agency responsible for managing the MS4 Stormwater Management Program and all activities necessary to comply with the requirements of this Permit and the Comprehensive Stormwater Management Enhancement Amendment Act of 2008 by coordinating and facilitating a collaborative effort among other city agencies and departments including but not limited to departments designated as "Stormwater Agencies" by the Comprehensive Stormwater Management Enhancement Amendment Act of 2008:

District Department of Transportation (DDOT);
Department of Public Works (DPW);
Office of Planning (OP);
Office of Public Education Facilities Modernization (OPEFM);
Department of Real Estate Services (DRES);
Department of Parks and Recreation; and
DC Water and Sewer Authority (WASA).

Each named entity is responsible for complying with those elements of the permit within its jurisdictional scope and authorities.

2. DDOE shall coordinate, and all agencies, offices, departments and authorities shall implement provisions of the existing MS4 Task Force Memorandum of Understanding (MOU) dated 2000, updated matrix of responsibilities (January 2008), and other institutional agreements, including but not limited to activities identified in the Upgraded Stormwater Management Plan (Feb. 19, 2009), as necessary to coordinate compliance activities among agency partners to implement the provisions of this Permit and the current SWMP. DDOE's major responsibilities under these MOUs and institutional agreements shall include:

a. Convening regular meetings and communication with MS4 Task Force agencies and other committees established to implement this Permit to budget, assign and implement projects, and monitor, inspect and enforce all activities required by the MS4 Permit.

b. Providing technical and administrative support for the MS4 Task Force and other committees established to implement this Permit

c. Evaluating, assessing, and synthesizing results of the monitoring and assessment programs and the effectiveness of the implementation of management practices and coordinating necessary adjustments to the stormwater management program in order to ensure compliance.

d. Coordinating the completion and submission of all deliverables including annual reports and plans required by the MS4 Permit.

e. Reviewing and processing requests from the MS4 Task Force agencies for reimbursement from the Stormwater Enterprise Fund for Permit-related tasks.

f. Projecting revenue needs to meet MS4 Permit requirements, overseeing the District's stormwater fees to fulfill revenue needs, and coordinating with WASA to ensure the District's stormwater fee is collected.

g. Making available to the public and other interested and affected parties, the opportunity to comment on MS4 stormwater management program.

3. Within 180 days of permit issuance, the Permittee shall complete an assessment of additional governmental agencies and departments, non-governmental organizations, watershed groups or other community organizations in the District and adjacent states to partner with to administer required elements of the Permit. Intra- and inter-agency agreements between relevant governmental and nongovernmental organizations shall be established to ensure successful coordination and implementation of stormwater management activities in accordance with the requirements of this Permit. Additional government and nongovernmental organizations and programs to consider include; land use planning, Brownfields redevelopment, fire department, building and safety, public health, parks and recreation, and federal departments and agencies, including but not limited to, the National Park Service, Department of Agriculture, Department of Defense, and General Services Administration, responsible for facilities in the District.

3. **SOURCE IDENTIFICATION**

3.1 Significant Changes Creating Potential Pollutant Sources[7]

The Permittee shall continue to compile and submit pertinent information on known or potential pollution sources, as soon as practicable after it becomes aware of such information, including significant changes in:

land use activities,
population estimates,
runoff characteristics,
major structural controls,
landfills,
publicly owned lands, and
industries impacting the MS4.

For purposes of this section, “significant changes” are changes that have the potential to revise, enhance, modify or otherwise affect the physical, legal, institutional, or administrative characteristics of the above-listed potential pollution sources. This information shall be submitted in each of the Annual Reports submitted to EPA pursuant to the procedures in Part 6.2 herein. For the Stormwater Model, analysis of data for these pollution sources shall be reported according to Part 7 herein.

3.2 Outfalls[8]

To the extent not already otherwise reported, no later than 18 months after issuance of this Permit, the Permittee shall provide an up-to-date inventory (organized by watershed) of all outfalls that discharge through the MS4 including any changes to the identification and mapping of existing permitted outfalls. Such inventory shall include, but not be limited to, the name and address, and a description (such as SIC code) which best reflects the principal products or services provided by each facility which may discharge to the MS4.

3.3 Addressing Potential Pollutant Sources[9]

The Permittee shall implement controls to minimize and prevent discharges of pollutants, including but not limited to Bacteria (E. coli), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash, to receiving waters. Controls shall be designed to prevent and restrict pollutants from coming into contact with stormwater, *e.g.*, restricting the use of lawn fertilizers rather than end-of-pipe treatment. These strategies shall include program priorities and a schedule of activities to address those priorities and an outline of which agencies will be responsible for implementing those strategies. The strategies used to reduce or eliminate these pollutants shall be documented in subsequent Annual Reports and in revisions to the Stormwater Management Plan dated February 19, 2009.

(iii) Source identification.
(A) A description of the historic use of ordinances, guidance or other controls which limited the discharge of non-storm water discharges to any Publicly Owned Treatment Works serving the same area as the municipal separate storm sewer system.
(B) A USGS 7.5 minute topographic map (or equivalent topographic map with a scale between 1:10,000 and 1:24,000 if cost effective) extending one mile beyond the service boundaries of the municipal storm sewer system covered by the permit application. The following information shall be provided:
(1) The location of known municipal storm sewer system outfalls discharging to waters of the United States;
(2) A description of the land use activities (e.g. divisions indicating undeveloped, residential, commercial, agricultural and industrial uses) accompanied with estimates of population densities and projected growth for a ten year period within the drainage area served by the separate storm sewer. For each land use type, an estimate of an average runoff coefficient shall be provided;
(3) The location and a description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;
(4) The location and the permit number of any known discharge to the municipal storm sewer that has been issued a NPDES permit;
(5) The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.); and
(6) The identification of publicly owned parks, recreational areas, and other open lands.

(1) The NPDES program requires permits for the discharge of ``pollutants" from any ``point source" into ``waters of the United States." The terms ``pollutant", ``point source" and ``waters of the United States" are defined at Sec. 122.2.
***
-Discharge when used without qualification means the ``discharge of a pollutant."
-Discharge of a pollutant means:
(a) Any addition of any ``pollutant" or combination of pollutants to ``waters of the United States" from any ``point source," or
(b) Any addition of any pollutant or combination of pollutants to the waters of the ``contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is

being used as a means of transportation.
This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any ``indirect discharger."
***
-Indirect discharger means a nondomestic discharger introducing ``pollutants" to a ``publicly owned treatment works."
***
-Waters of the United States or waters of the U.S. means:
(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(b) All interstate waters, including interstate ``wetlands;"
(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, ``wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
(3) Which are used or could be used for industrial purposes by industries in interstate commerce;
(d) All impoundments of waters otherwise defined as waters of the
-United States under this definition;
(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
(f) The territorial sea; and
(g) ``Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

4. STORMWATER MANAGEMENT PROGRAM (SWMP)[10]

The Permittee shall continue to implement, assess and upgrade the controls, procedures and management practices, described in Part 4 herein and in the current Upgraded SWMP dated February 19, 2009, all requirements of which are incorporated herein, in order to reduce or eliminate the pollutant load, and to protect or restore water quality standards and meet the requirements of the Clean Water Act, its implementing regulations, and relevant District of Columbia laws, regulations and ordinances. The Stormwater Management Program is comprised of all requirements in this Permit, including the program elements listed in Table 1 below. The set of BMPs specified in the Permit can be adapted as opportunities change, as long as interim

compliance deadlines for WLAs are achieved.

The measures required below are terms of this Permit. These Permit requirements do not prohibit the use of 319(h) funds for other related activities that go beyond the requirements of this Permit, nor do they prohibit other sources of funding and/or other programs where legal or contractual requirements preclude direct use for stormwater permitting activities.

TABLE 1[contents of table - 12]
Required Program Stormwater Elements

Required Program Application Element[11]	**Regulatory References**
Adequate Legal Authority	40 C.F.R. § 122.26(d)(2)(I)(C)-(F)
Green technology stormwater management practices, which incorporate technologies and practices across District activities.	Chapter 5 of Title 21 of District of Columbia Municipal Regulations (Water Quality and Pollution), November 27, 2007 and August 1, 2008 Letters of Agreement
Existing Structural and Source Controls	40 C.F.R. § 122.26(d)(2)(iv)(A)(1)
Roadways	40 C.F.R. § 122.26(d)(2)(iv)(A)(3)
Pesticides, Herbicides, and Fertilizers Application	40 C.F.R. § 122.26(d)(2)(iv)(A)(6)
Municipal Waste Sites	40 C.F.R. § 122.26(d)(2)(iv)(A)(5)
Spill Prevention and Response	40 C.F.R. § 122.26(d)(2)(iv)(B)(4)
Infiltration of Seepage	40 C.F.R. § 122.26(d)(2)(iv)(B)(7)
Stormwater Management Program for Commercial and Residential Areas	40 C.F.R. § 122.26(d)(2)(iv)(A)
Manage Critical Source Areas	40 C.F.R. § 122.26(d)(iii)(B)(6)

Stormwater Management for Industrial Facilities	40 C.F.R. § 122.26(d)(2)(iv)(C)
Industrial and High Risk Runoff	40 C.F.R. § 122.26(d)(2)(iv)(C), (iv)(A)(5)
Identify Priority Industrial Facilities	40 C.F.R. § 122.26(d)(2)(iv)(C)(1)
Illicit Discharges and Improper Disposal	40 C.F.R. § 122.26(d)(2)(iv)(B)(1)-(5), (iv)(B)(7)
Flood Control Projects	40 C.F.R. § 122.26(d)(2)(iv)(A)(4)
Public Education and Participation	40 C.F.R. § 122.26(d)(2)(iv)(A)(6), (iv)(B)(5), (iv)(B)(6)
Monitoring and Assessment and Reporting	40 C.F.R. § 122.26(d)(2)(iv)(D)(v)
Monitoring Program	40 C.F.R. § 122.26(d)(2)(iv)(B)(2), (iii), iv(A), (iv)(C)(2)
Characterization Data	40 C.F.R. § 122.26(d)(2)(iii)(B)-(D), 40 C.F.R. § 122.21(g)(7)
Reporting	Section 6 of the Upgraded Stormwater Management Plan (Feb. 19, 2009).

4.1 Standards for Long-Term Stormwater Management [13]

The Permittee shall continue to develop, implement, and enforce a green technology program in accordance with this Permit and the Permittee's Updgraded SWMP (Feb. 19, 2009) that integrates green technology stormwater management practices at the site and neighborhood level through policies, regulations, ordinances and incentive programs in order to protect water quality across the District. The green technology practices shall be designed to mimic pre-development site hydrology through use of on-site stormwater retention measures (e.g., harvesting and using, infiltrating and evapotranspiring runoff).

In accordance with Section 6.2 herein, the first Consolidated Annual Report submitted within this Permit term shall establish a baseline for the following: (1) percentage of impervious cover within the District; and (2) number and square footage of green roofs as defined herein within the District. In subsequent Consolidated Annual Reports, report on the percentage of

decreased impervious cover and increased number and square footage of green roofs and other practices that infiltrate, evapotranspire and harvest stormwater within the District.

4.1.1 Standards for New and Redevelopment

The Permittee shall require stormwater entering the MS4 from new development and redevelopment to be controlled as follows:

The Permittee shall require stormwater entering the MS4 from new development and redevelopment that disturbs land greater than or equal to 5,000 square feet, thereby triggering requirements for stormwater management plan review and approval as part of the District's permitting process, to be controlled as follows:

4.1.1.a Performance Standard for Non-federal Facilities [15]

No later than one year following issuance of this Permit, the Permittee shall, through its Updated DC Stormwater Regulations or other permitting or regulatory mechanisms, implement an enforceable mechanism that will adopt and implement either of the following performance standards:

i. Require the design, construction and maintenance of stormwater controls to achieve on-site retention of "1.2" volume of stormwater from a 24- hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District; or

ii. Require the design, construction and maintenance of stormwater controls to achieve the retention of the predevelopment runoff volume of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District. Determination of the predevelopment runoff volume must be based on a full hydrologic and hydraulic analysis of the site that ensures maintenance of predevelopment hydrographs (volume, rate and duration) for the 1-, 2-, 10- and 100-year 24-hour storm events. The modeled predevelopment condition must be meadow.

4.1.1.b. Performance Standard for Federal Facilities [15]

The District shall ensure through requirements for design, construction and maintenance that federal facilities undertaking new or redevelopment of 5,000 square feet or more comply with one of the following:

i. Adopt the design, construction and maintenance of stormwater controls to achieve on-site retention of 1.7" of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater

harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District; or

ii. Adopt the design, construction and maintenance of stormwater controls to achieve the retention of the predevelopment runoff volume of stormwater from a 24- hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all new development and redevelopment greater than 5,000 square feet in the District. Determination of the predevelopment runoff volume must be based on a full hydrologic and hydraulic analysis of the site that ensures maintenance of predevelopment hydrographs (volume, rate and duration) for the 1, 2, 10 and 100 year 24-hour storm events. The modeled predevelopment condition must be meadow.

Discharges controlled in accordance with the standards described in Part 4.1.1.a and 4.1.1.b shall be considered to be as stringent as necessary to ensure that the discharges do not cause or contribute to an excursion above any (1) applicable TMDL WLAs; or (2) DC WQS, whichever is more stringent, so long as the Permittee can demonstrate quantitatively that the Permit conditions meet the WLA.

In addition, pollutants in the discharge must be controlled to meet the standards contained in section 1.4 herein, unless such discharges are fully compensated for by a program for implementing in-lieu or off-site mitigation credits.[16]

4.1.1.c. Code and Policy Consistency, Site Plan Review and Verification [17]

For both 4.1.1.a and 4.1.1.b the District must review and revise, as applicable, stormwater, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of on-site retention. The District must also have a formal process for site plan reviews and a post-construction verification process (e.g., inspections, submittal of as-builts) to ensure that standards are appropriately implemented.

4.1.1.d. Off-Site Mitigation [18]

Within one-year of the effective date of this Permit, the District shall implement an off-site mitigation and Fee-in-Lieu program to be utilized when projects cannot meet stormwater management standards as defined in Sections 4.1.1.a and 4.1.1.b. The program shall include at a minimum: establishment of baseline requirements to be applied for mitigation projects, specific criteria for determining when full compliance with the performance standard cannot technically be met based on physical site constraints, and specific procedures for evaluating when an off-site mitigation is not feasible and in-lieu credits must be substituted to satisfy this requirement. The requirements for off-site mitigation and in-lieu payments shall be sufficient to encourage on-site stormwater management as a first option for meeting stormwater performance. Further, the requirements for off-site mitigation shall be established to meet or exceed the stormwater performance requirements for each project.

The Permittee mitigation program may allow adjustments to retention standards for redevelopment, high density development, transit-oriented development and other development patterns in non-federal facility areas for which the District can quantify water quality, water quantity, climate change adaptation or other environmental benefit(s). All payments in lieu must be deposited in the District's Stormwater Enterprise Fund for use by the District to implement the terms of this Permit.

4.1.1.e Green Landscaping Incentives Program [19]

No later than one year following Permit issuance, the Permittee shall develop an incentive program to increase the quantity and quality of planted areas in the District while allowing flexibility for developers and designers to meet development standards. The Incentive Program shall use such methods as a scoring system to encourage green technology practices such as larger plants, permeable paving, green roofs, vegetated walls, preservation of existing trees, and layering of vegetation along streets and other areas visible to the public.

4.1.2 Retrofit Program for Existing Discharges [20]

1. Performance Standard. Within one year of the effective date of this permit, establish performance metrics for retrofit projects. The starting point for the performance metrics shall be the standard in 4.1.1.a and may include metrics: to count square footage proportionate to the percentage of the retention standard achieved for projects that retain less than that standard; to partially count a proportion of square footage for projects that provide stormwater treatment benefits other than retention for specific TMDL pollutants of concern; and to count removal of impervious surface. Specific site conditions (soils, depth to groundwater, site contamination, the presence of buried utilities, etc.) may constitute justifications for setting a performance standard at something less than the standard in 4.1.1.a. Specific site analysis to make this determination shall be required. As with new and redevelopment, the District may apply off-site mitigation or payment-in-lieu options. The DC Retrofit Program shall manage runoff from 18,000,000 square feet of impervious surfaces over the Permit term. A minimum of 3,600,000 square feet of this objective must be in transportation rights-of-way.

2. The DC Retrofit Program shall include a list to be organized by the three major watersheds in the District (Anacostia, Potomac and Rock Creek).

3. Estimate the potential pollutant load and volume reductions achieved through the DC Retrofit List for the following pollutants: Bacteria (E. coli), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash.

4. The District, with facilitation assistance from EPA Region III, will also target major Federal landholders, such as the General Services Administration and the Department of Defense, for outreach and education, with the objective of identifying retrofit opportunities and establishing agreements to comply with the performance standard in 4.1.1.b.. [21]

4.1.3 Tree Canopy. [22] No later than one year following issuance of this Permit, the Permittee shall develop a strategy to reduce the discharge of stormwater pollutants by expanding tree canopy throughout the city. The Permittee shall identify locations throughout the District where tree plantings and expanded tree boxes are technically feasible and commit to specific schedules for implementation at locations throughout the District, with highest priority given to projects that offer the greatest stormwater retention potential. This effort shall include, at a minimum:

1. Performance Standard. Achieve a minimum annual tree planting rate of at least 4,150 plantings annually within the DC MS4 Permit Area. Ensure that trees are planted and maintained, including requirements for tree boxes, in the manner that will achieve optimal stormwater retention and tree survival rate within the District of Columbia and that such planting complies with the DDOT, Urban Forestry Administration Guidelines, http://app.ddot.dc.gov/ufa/information/planting_guides.shtm.

2. Annually document the total trees planted and make an annual estimate of the volume of stormwater that is being removed from the MS4 system (and combined system, as relevant) in a typical year of rainfall as a result of the maturing tree canopy over the life of the MS4 Permit.

4.1.4. Green Roof Projects. [23] As part of the green technology program plan, identify all District-owned locations throughout the District where green roof projects are technically feasible and commit to specific schedules for implementing these projects at specific locations, with highest priority given to projects that offer the greatest stormwater capture potential. The Permittee shall:

1. Complete a structural assessment of all District properties maintained by DRES and slated for redevelopment to determine current roof conditions and the feasibility for green roof installation, on an ongoing basis.

2. Performance Standard [23]. Upon completion of the structural assessment, the Permittee shall commit to installing 350,000 square feet of green roofs over the Permit cycle on District properties during the term of the Permit (including schools and school administration buildings in order to make progress toward the Mayor's goal of achieving 20% green roof coverage in the District in 20 years.

3. Document the square footage of green roof coverage in the District, whether publicly or privately owned, report any incentive programs implemented during the Permit term, and estimate the volume of stormwater that is being removed from the MS4 system (and combined system, as relevant) in a typical year of rainfall as a result of the combined total green roof facilities in the District.

4.2 Operation and Maintenance of Stormwater Capture Practices [24]

4.2.1 District Owned and Operated Practices. Within two years of the effective date of this permit, develop and implement operation and maintenance protocols and guidance

for District-owned and operated on-site retention practices (new and redevelopment, and retrofits) to include maintenance needs, inspection frequencies, estimated maintenance frequencies, and a tracking systems to document relevant information. Provide training to all relevant municipal employees and contractors, with regular refreshers, as necessary.

In addition, the Permittee shall ensure that every new building and major renovation/rehabilitation project for District-owned properties within the inventory of DRES and OPEFM (e.g., schools and school administration buildings) includes on-site stormwater retention measures, including but not limited to green roofs, stormwater harvest/reuse, and/or other practices that can achieve the retention performance standard.

4.2.2 Non-District Owned and Operated Practices. In conjunction with updating of relevant ordinances and policies, develop accountability mechanisms to ensure maintenance of stormwater control measures on non-District property. Those mechanisms may include combinations of deed restrictions, ordinances, maintenance agreements, or other policies deemed appropriate by the District. The District must also include a long-term verification process of O&M, which may include municipal inspections, 3rd party inspections, owner/operator certification on a frequency deemed appropriate by the District, and/or other mechanisms. The District must maintain an electronic inventory of practices on private property to include this information.

4.2.3. Stormwater Management Guidebook and Training [25]

4.2.3.a No later than 18 months from the Permit issuance date, the Permittee shall finalize a Stormwater Management Guidebook to be available for wide-spread use by land use planners and developers. The Stormwater Management Guidebook shall provide regular updates, as applicable, in a format that facilitates such regular updates, and shall include objectives and specifications for integration of stormwater management technologies, including on site retention practices, in the areas of:

A. Site Assessment.
B. Site Planning and Layout.
C. Vegetative Protection, Revegetation, and Maintenance.
D. Techniques to Minimize Land Disturbance.
E. Techniques to Implement Measures at Various Scales.
F. Integrated Water Resources Management Practices.
G. Designing to meet the required performance standard(s).
H. Flow Modeling Guidance.
I. Hydrologic Analysis.
J. Construction Considerations.
K. Operation and Maintenance

4.2.3.b The Permittee shall continue to provide key industry, regulatory, and other stakeholders with information regarding objectives and specifications of green contained in the Stormwater Management Guidebook through a training program. The Stormwater Management training program will include at a minimum the following:

1. Stormwater management/green technology practices targeted sessions and materials for builders, design professionals, regulators, resource agencies, and stakeholders.

2. Materials and data from stormwater management/green technology practices pilot projects and demonstration projects including case studies.

3. Design and construction methods for integration of stormwater management/green technology practices measures at various project scales.

4. Guidance on performance and cost of various types of stormwater management/green technology practices measures in the District.

4.3 Management Plan for District Government Areas [26]

Procedures to reduce the discharge of pollutants in stormwater runoff shall include, but not be limited to:

4.3.1 Sanitary Sewage System Maintenance Overflow and Spill Prevention Response

The Permittee shall implement a response plan for overflows of the sanitary sewer system into the MS4. The response plan shall clearly identify agencies responsible and telephone numbers and e-mail for any contact and shall contain at a minimum, procedures for:

1. Investigating any complaints received within 24 hours of the incident report.

2. Responding within two hours to overflows for containment.

3. Notifying appropriate sewer and public health agencies when the sanitary sewer overflows to the MS4 within 24 hours.

4.3.2 Public Construction Activities Management

The Permittee shall implement and comply with the Development and Redevelopment and the Construction requirements in Part 4.6 of this permit at all Permittee-owned or operated public construction projects.

The Permittee shall obtain coverage under the applicable EPA Construction General Permit for construction activities and projects that are:

1. Covered under one (or more) Capital Improvement Projects (including but not limited to street repaving, new streets, channel clearing) or contract, and that individually or cumulatively disturb 1 acre or more of land; or

2. Less than 1 acre, but are part of a larger common plan of development that in total disturbs 1 or more acres of land; or

3. Linear construction project(s) that disturb 1 or more acres of land.

4.3.3 Vehicle Maintenance/Material Storage Facilities/ Municipal Operations.

The Permittee shall implement stormwater pollution prevention measures at all Permittee-owned, leased facilities and job sites including but not limited to vehicle/ equipment maintenance facilities, and material storage facilities.

For vehicle and equipment wash areas and municipal facilities constructed, redeveloped, or replaced, the Permittee shall eliminate discharges of wash waters from vehicle and equipment washing into the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

1. Self-contain, and haul off-site for disposal;
2. Equip with a clarifier; or
3. Equip with an alternative pre-treatment device.

4.3.4 Landscape and Recreational Facilities Management/Pesticide, Herbicide Fertilizer and Landscape Irrigation.

The Permittee shall further reduce pollutants and pollutant discharges associated with the storage and application of pesticides, fertilizers, herbicides, the use of other toxic substances and landscape irrigation according to an integrated pest management program (IPM). The IPM shall be an ecosystem based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, use of resistant varieties, and use of low chemical and irrigation input landscapes, in accordance with the provisions of this permit, procedures and practices described in the February 19, 2009 SWMP and regulations.

The Permittee shall further utilize IPM controls to reduce pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied by employees or contractors, to public rights-of-way, parks, and other District property to ensure that:

1. Pesticides are used only if monitoring indicates they are needed according to established guidelines;

2. Fertilizers are used only when soil tests indicate that they are necessary, and only in minimum amounts and for needed purposes (e.g., seed germination).

3. Treatments are made with the goal of removing only the target organism;

4. Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial, non-target organisms, and the environment;

5. No pesticides or fertilizers are applied to an area immediately prior to, during, or immediately after a rain event, or when water is flowing off the area;

6. No banned or unregistered pesticides are stored or applied;

7. All staff applying pesticides are certified or are under the direct supervision of a pesticide applicator certified in the appropriate category;

8. Procedures are implemented to encourage the retention and planting of native and/or non-invasive, naturalized vegetation to reduce water, pesticide and fertilizer needs;

9. Pesticides and fertilizers are stored indoors or under cover on paved surfaces or enclosed in secondary containment and storage areas inspected regularly to reduce the potential for spills; and

10. Landscapes that maximize on-site retention of stormwater, while minimizing mowing, chemical inputs and irrigation are given preference for all new landscape installation.

The Permittee shall ensure that its agencies partner with one another for the purpose of ensuring that pesticide and fertilizer use within its jurisdiction does not threaten water quality.

The Permittee shall partner with other organizations to ensure that pesticide and fertilizer use within their jurisdiction does not threaten water quality.

The Permittee shall continue to conduct education and outreach, as well as provide incentives, to curtail the use of turf-grass fertilizers for the purpose of reducing nitrogen and phosphorous discharges to surface waters. The program shall incentivize the use of vegetative landscapes other than turf grass and other measures to restrict the use of turf grass fertilizers.

The Permittee shall use GIS layers of public land and sewersheds, as well as background data, to identify priority areas for a targeted strategy to reduce the sources of pesticides, herbicides, and fertilizers that contaminate the stormwater runoff, and report progress toward completing the screening characterization in the next Updated SWMP.

Include in each Annual Report 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.

4.3.5 Storm Drain Operation and Management/Solids and Floatables Reduction

The Permittee shall conduct maintenance activities at all new and existing catch basins throughout the life of the Permit.

The Permittee shall comply with the Anacostia River Trash TMDL implementation plan in Part 8 of this Permit and apply the technologies and other activities developed in the Anacostia River Trash TMDL throughout the entire MS4 Permit Area. The Permittee shall continue to report the progress of trash reduction in the Consolidated Annual Report.

4.3.6 Streets, Alleys, Roadways and Sidewalks

The Permittee shall comply with the following performance standards:

1. The Permittee shall ensure that each catch basin within the DC MS4 Permit Area is cleaned at least once annually during the life of the Permit. The Permittee shall continue to use strategies for coordinated catch basin cleaning and street-sweeping that will optimize reduction of stormwater pollutants. Street sweeping shall be conducted in accordance with the following schedule:

TABLE 2
Street Sweeping

Area/Street Classification	Frequency
Arterials-heavily developed commercial and central business districts with considerable vehicular and pedestrian traffic	At least nine (9) times per year
Industrial areas	At least six (6) times per year
Residential-residential areas with limited throughway and pedestrian traffic AND neighborhood streets which are used for local purposes only	At least four (4) times per year
Central Business District/Commercial-neighborhood business districts and main streets with moderate vehicular and pedestrian traffic	At least one time every two weeks

2. Standard road repair practices shall include limiting the amount of soil disturbance to the immediate area under repair. Stormwater conveyances which are denuded should be resodded or reseeded and mulched for rapid revegetation, and these areas should have effective erosion control until stabilized.

3. The Permittee shall continue to evaluate and update 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. The Permittee shall investigate and implement techniques available for reducing pollution from deicing salts in snowmelt runoff and runoff from salt storage facilities. The Permittee shall evaluate and implement the use of porous/permeable surfaces that require less use of deicing materials and activities. This evaluation shall be made a part of an overall investigation of ways to meet the requirements of the Clean Water Act and reported in each Annual Report.

4. The Permittee shall continue to implement and update a program and operating plan to ensure that excessive quantities of snow and ice control materials do not enter the District's water bodies. The Permittee shall report its progress in implementing the program and plan in each Annual Report. Except during a declared Snow Emergency when the Permittee determines that the foremost concern of snow removal activities is public health and safety, it shall avoid snow dumping or storage in areas adjacent to water bodies, wetlands, and areas near public or private drinking water wells which would ultimately reenter the MS4 system.

4.3.7 Infrastructure Maintenance/Pollution Source Control Maintenance

The Permittee shall continue to implement an operation and maintenance program that incorporates good housekeeping components at all municipal facilities located in the DC MS4 Permit Area, including but not limited to; municipal waste water treatment facility, potable drinking water facility, municipal fleet operations, maintenance garages, parks and recreation, street and infrastructure maintenance, and grounds maintenance operations, libraries and schools. The Permittee shall document the program in the Annual Report, as required at Section 6.2 herein. The program shall include at a minimum the following elements:

1. Continue to implement maintenance standards at all municipal facilities that will protect the physical, chemical and biological integrity of receiving waters.

2. Continue to implement an inspection schedule in which to perform inspections to determine if maintenance standards are being met. Inspections shall be performed no less than once per calendar year and shall provide guidance in SWPPP development and implementation, where needed.

3. Continue to implement procedures for record keeping and tracking inspections and maintenance at all municipal facilities.

The Permittee shall continue implementation of the following:

1. The Permittee shall continue to implement an inspection and maintenance program for all Permittee-owned management practices, including post-construction measures.

2. The Permittee shall continue to ensure proper operation of all treatment management practices and maintain them as necessary for proper operation, including all post-construction measures.

3. Any residual water following infrastructure maintenance shall be self-contained and disposed of legally in accordance with the Clean Water Act.

4.3.8 Public Industrial Activities Management/Municipal and Hazardous Facilities.

For any municipal activity associated with industrial activity, as defined by 40 C.F.R. § 122.26, which discharges stormwater to, from and through the DC MS4, the Permittee shall obtain separate coverage under either: (1) the EPA Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) (As modified May 27, 2009); or (2) an individual permit.

4.3.9. Emergency Procedures.

The Permittee may conduct repairs of essential public service systems and infrastructure in emergency situations. An emergency includes only those situations included as conditions necessary for demonstration of an upset at 40 C.F.R. 122.41(n). For each claimed emergency, the Permittee shall submit to the Permitting Authority a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implement to reduce the threat to water quality, no later than required by applicable Clean Water Act regulations.

4.3.10. Municipal Official Training.

The Permittee shall continue to implement an on-going training program for its employees whose planning, design, review, construction, operations or maintenance job functions may impact stormwater program implementation. The training program shall address the importance of protecting water quality, the requirements of this Permit, design, performance, operation and maintenance standards, inspection procedures, selecting appropriate management practices, ways to perform their job activities to prevent or minimize impacts to receiving waters, and procedures for tracking, inspecting and reporting, including potential illicit discharges. The Permittee shall provide follow-up and refresher training at a minimum of once every twelve months, and shall include any changes in procedures, techniques or requirements.

The training program shall include, but is not limited to, those employees who work in the following areas:

Municipal Planning;
Site plan review;
Transportation planning and engineering;
Street/sewer and right-of-way construction and maintenance;
Water and sewer departments;
Parks and recreation department;
Municipal water treatment and waste water treatment;
Fleet maintenance;
Fire and police departments;
Building maintenance and janitorial;
Garage and mechanic crew;
Contractors and subcontractors who may be contracted to work in the above described areas;
Personnel responsible for answering questions about the Permittee's stormwater program, including persons who may take phone calls about the program; and
Any other department of the Permittee that may impact stormwater runoff

4.4 Management Plan for Commercial and Institutional Areas [27]

The District shall establish and implement policies and procedures to reduce the discharge of pollutants in stormwater runoff from all commercial and institutional (including federal) areas.

The Permittee shall maintain stormwater management controls in commercial and institutional land areas in accordance with the following provisions:

The Permittee shall:
1. Track;
2. Inspect; and
3. Ensure compliance with the MS4 permit and municipal ordinances at commercial and institutional facilities.

Commercial and institutional minimum performance measures are:

4.4.1. Inventory of Critical Sources and Source Controls

1. Inventory. The Permittee shall continue to maintain a watershed-based inventory or database of all facilities within its jurisdiction that are critical sources of stormwater pollution. Critical Sources to be tracked may include some or all of the following:

a. Automotive service facilities, *e.g.*, service, fueling and salvage facilities;
b. Industrial activities, as defined at 40 C.F.R. §§ 122.26(b)(14); and

c. Construction sites exceeding one acre, or sites under one acre that are part of a larger common plan of development.

2. Required Information. The Permittee shall include the following minimum fields of information for each critical sources industrial and commercial facility:

a. Name of facility and name of owner/ operator;
b. Address of facility;
c. Size of facility; and
d. Activities conducted at the facility that could impact stormwater.
e. Practices and/or measures to control pollutants.
f. Inspection and maintenance schedules and dates.

The Permittee shall update its inventory of critical sources at least annually. The update may be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (*e.g.*, business licenses, pretreatment permits, sanitary sewer hook-up permits, and similar information).

4.4.2. Inspect Critical Sources

The Permittee shall continue to inspect all commercial facilities identified in Part 4.4.1. herein and any others found to be critical sources twice during the five-year term of the Permit. A minimum interval of six months between the first and the second mandatory compliance inspection is required.

4.4.3. Compliance Assurance.

At each facility identified as a critical source, the Permittee's inspector(s) shall verify that the operator is implementing a control strategy necessary to protect water quality. Where the Permittee determines that existing measures are not adequate to protect water quality, the Permittee shall require additional site-specific controls sufficient to protect water quality.

4.5 Management Plan for Industrial Facilities and Spill Prevention [28]

The District shall establish and implement policies and procedures to reduce the discharge of pollutants in stormwater runoff from all industrial (including relevant federal) facilities.

The Permittee shall:

1. Continue to implement a program to monitor and control pollutants in stormwater discharged from Industrial Facilities located within the MS4 Permit Area, as defined herein, pursuant to the requirements in 40 C.F.R. § 122.26(d)(2)(iv)(C). These facilities shall include, but are not limited to:

a. Private Solid Waste Transfer Stations

b. Hazardous Waste Treatment, Disposal, and/or Recovery Plants

c. Industrial Facilities subject to SARA or EPCRA Title III

d. Industrial Facilities with NPDES Permits

e. Industrial facilities with a discharge to the MS4

2. Continue to maintain and update the industrial facilities database.

3. Continue to perform or provide on-site assistance/inspections and outreach focused on the development of stormwater pollution prevention plans and NPDES permit compliance.

4. The Permittee shall continue to refine and implement procedures to govern the investigation of facilities suspected of contributing pollutants to the MS4, including at a minimum: (i) a review, if applicable, of monitoring data collected by the facility pursuant to its NPDES permit; and (ii) wet weather screening as required by Part 5.2.1 herein (including collecting data on discharges from industrial sites). These procedures shall be submitted as part of each Annual Report required by Part 6.2 herein.

5. Continue to implement the prohibition against illicit discharges, control spills, and prohibit dumping. Continue to implement a program to prevent, contain, and respond to spills that may discharge to the MS4, and report on such implementation submitted in each Annual Report. The spill response program may include a combination of spill response actions by the Permittees (and/or another public or private entity).

6. Report progress in developing and carrying out industrial-related programs in each Annual Report required by Section 6 herein. Provide an explanation as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

4.6 Stormwater Management for Construction Sites [29]

Continue implementation of the Program that reduces the discharge of pollutants from construction sites. In each Annual Report, the Permittee shall evaluate and report to determine if the existing practices meet the requirements of 40 C.F.R. § 122.26(d)(2)(iv)(A) and (D).

Continue the review and approval process of the sediment and erosion control plans under this program. Also, the Permittee shall ensure that all construction projects impacting one acre or greater, or less than one acre when part of a larger common plan of development or sale equal to or larger than one acre, receive EPA NPDES Construction General Permit Coverage and meet EPA Construction Effluent Limitations guidelines. The Permittee shall monitor its effluent for sediment using appropriate methods (e.g., using turbidity as a surrogate for sediment).

Continue to implement an inspection and enforcement plan for carrying out the objectives of the SWMP dated February 19, 2009. Maintain inspections and compliance and enforcement activities at or above the 2008 level. When a violation of local erosion and sediment control ordinances occurs, the Permittee shall follow existing enforcement procedures and practices using standardized reports as part of the inspection process to provide accurate record keeping of inspections of construction sites. The Permittee shall use a listing of all violations and enforcement actions to assess the effectiveness of the Enforcement Program in each Annual Report.

Continue with educational measures for construction site operators (Section 4.9 of this Permit) that consist, at a minimum, of providing guidance manuals and technical publications.

Report progress in developing and carrying out the above construction-related programs in each Annual Report required by Parts 6.2 herein, including: (i) an explanation as to how the implementation of these procedures will meet the requirements of the Clean Water Act; (ii) an explanation as to how the implementation of these procedures, particularly with regard to District "waivers and exemptions", will meet the requirements of the Clean Water Act; and (3) discussion of progress toward meeting TMDL deadlines.

4.7 Management Plan for Illicit Discharges and Improper Disposal. [30]

The Permittee shall perform the following:

1. Continue to implement an ongoing program to detect illicit discharges, pursuant to the SWMP dated February 19, 2009, and Part 4 of this Permit, and to prevent improper disposal into the storm sewer system, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1). Such program shall include, at a minimum the following:

a. An updated schedule of procedures and practices to prevent illicit discharges, as defined at 40 C.F.R. § 122.26(b)(2), and, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1), to detect and remove illicit discharges as defined herein;

b. Continue to implement an illicit connection detection and enforcement program to perform dry weather flow inspections in target areas;

c. Visual inspections of targeted areas; and

d. 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.

e. An enforcement plan for illicit discharges set forth in Part 4 herein. The Permittee shall provide a justification for the control plan in the Annual Report in demonstrating its compliance with the requirements of the Clean Water Act.

f. All necessary inspection, surveillance, and monitoring procedures to remedy and prevent illicit discharges. The Permittee 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 each Annual Report. The inspection plan shall include a schedule and allocation of resources.

g. The Permittee shall continue to 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 each of the Annual Reports.

h. The Permittee shall report the accomplishments of this program in each Annual Report.

2. The Permittee shall continue to 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.

3. The Permittee shall continue to implement the prohibition against the discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste into separate storm sewers. 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. The Permittee shall ensure that such programs are readily available to all private residents and that they are publicized and promoted on a regular basis, pursuant to the Public Education Plan in this permit at Part 4.9 herein.

4. The Permittee shall continue to work with members of the Metropolitan Police Department to enhance illegal dumping enforcement.

5. The Permittee shall implement the District's ban on coal tar pavement products, including conducting outreach and enforcement activities.

6. The Permittee shall implement the District's Anacostia Clean Up and Protection Act of 2009, to ban the use of disposable non-recyclable plastic carryout bags and restrict the use on disposable carryout bags in certain food establishments.

4.8 Flood Control Projects[31]

The Permittee shall:

1. Update the impervious surface analysis of floodplains six months after the approval of the revised the Flood Insurance Rate Maps by the Federal Emergency Management Agency.

2. Assess potential impacts on the water quality and the ability of the receiving water to support beneficial uses for all flood management projects. Evaluate the feasibility of retrofitting existing flood control devices to provide additional pollutant and volume removal from stormwater. Report results of such assessment, mapping program, and feasibility studies in the Annual Report (Part 6.2 herein). In addition, submit the flood control measures necessary to meet the requirements of the Clean Water Act with these Reports/Plans.

3. Review all development proposed in flood plain areas to ensure that the impacts on the water quality of receiving water bodies have been properly addressed. Information regarding impervious surface area located in the flood plains shall be used (in conjunction with other environmental indicators) as a planning tool. The Permittee shall collect data on the percentage of impervious surface area located in flood plain boundaries for all proposed development after the effective date of this permit. The Permittee shall collect similar data for existing development in flood plain areas, in accordance with the mapping program and other activities designed to improve water quality. Critical unmapped areas shall be prioritized by the Permittee with an emphasis on developed and developing acreage. Reports of this work shall be summarized in the Annual Report. An explanation shall be provided as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

4.9 Public Education and Participation Program[32]

The Permittee shall continue to implement a public education program including but not limited to an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee. The goal of the education program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. An education program may be developed locally or regionally.

The minimum performance measures are:

4.9.1 Education and Outreach. The Permittee shall continue to implement its education and outreach program for the area served by the MS4 that was established during the previous permit cycle. The outreach program shall be designed to achieve measurable improvements in the target audience's understanding of stormwater pollution and steps they can take to reduce their impacts.

The Permittee shall assess current education and outreach efforts and identify areas where additional outreach and education are needed. Audiences and subject areas to be considered include:

1. *General public:*
   •General impacts of stormwater flows into surface waters.

•Impacts from impervious surfaces.
•Source control practices and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping, and rain water reuse.
•A household hazardous waste educational and outreach program to control illicit discharges to the MS4 as required herein.
•Information and education on proper management and disposal of used oil, other automotive fluids, and household chemicals.

2. *General public, businesses, including home-based and mobile businesses:*
•Management practices for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
•Impacts of illicit discharges and how to report them including information for industries about stormwater permitting and pollution prevention plans and the requirement that they develop structural and non-structural control systems

3. *Homeowners, landscapers and property managers:*
•Use of low-chemical nutrient fertilizers, alternatives to fertilizers, alternative landscaping requiring no fertilizers.
•Car washing alternatives with the objective of eliminating phosphorus detergent discharges.
•Yard care techniques that protect water quality.
•Management practices for use and storage of pesticides and fertilizers.
•Management practices for carpet cleaning and auto repair and maintenance.
•Runoff Reduction techniques, including site design, on-site retention, pervious paving, retention of forests and mature trees.
•Stormwater pond maintenance.

4. *Engineers, contractors, developers, review staff and land use planners:*
•Technical standards for construction site sediment and erosion control.
•Runoff Reduction techniques, including site design, on-site reduction, pervious pavement, alternative parking lot design, retention of forests and mature trees.
•Stormwater treatment and flow control controls.
•Impacts of increased stormwater flows into receiving water bodies.

4.9.2. Measurement of Impacts. The Permittee shall continue to measure the understanding and adoption of selected targeted behaviors among the targeted audiences. The resulting measurements shall be used to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.

4.9.3. Recordkeeping. The Permittee shall track and maintain records of public education and outreach activities.

4.9.4. Public Involvement and Participation. The Permittee shall continue to include ongoing opportunities for public involvement through advisory councils, watershed associations and/or committees, participation in developing updates to the stormwater fee

system, stewardship programs, environmental activities or other similar activities. The Permittee shall facilitate opportunities for direct action, educational, and volunteer programs such as riparian planting, volunteer monitoring programs, storm drain marking or stream clean up programs.

The minimum performance measures are:

1. The Permittee shall continue to create opportunities for the public to participate in the decision making processes involving the implementation and update of the Permittee's SWMP. The Permittee shall continue to implement its process for consideration of public comments on their SWMP.

2. The Permittee shall continue to establish a method of routine communication to groups such as watershed associations and environmental organizations that are located in the same watershed/s as the Permittee, or organizations that conduct environmental stewardship projects located in the same watershed/s or in close proximity to the Permittee. This is to make these groups aware of opportunities for their direct involvement and assistance in stormwater activities that are in their watershed.

3. The Permittee shall continue to make all approved MS4 documents required under this Permit available to the public. The current approved SWMP and the latest MS4 annual Permit deliverable documents required under this Permit shall be posted on the Permittee's website.

4. The Permittee shall continue to develop public educational and participation materials in cooperation and coordination with other agencies and organizations in the District with similar responsibilities and goals. Progress reports on public education shall be included in the Annual Report. An explanation shall be provided as to how this effort will reduce pollution loadings to meet the requirements of the Clean Water Act.

The Permittee shall periodically, and at least annually, update its website.

5. MONITORING AND ASSESSMENT OF CONTROLS

5.1 Revised monitoring plan[33]

Within one year of the effective date of this permit the permittee shall develop, public notice and submit to EPA Region III for approval a revised monitoring plan to meet the following objectives:

[34]1. Make wet weather loading estimates of the parameters in Table 3 from the MS4 to receiving waters. Number of samples, sampling frequencies and number and locations of sampling stations must be adequate to ensure data are statistically significant and interpretable.

[35]2. Evaluate the health of the receiving waters, to include biological and physical indicators such as macroinvertebrates and geomorphologic factors. Number of samples, frequencies and locations must be adequate to ensure data are statistically significant and interpretable for long-term trend purposes (not variation among individual years or seasons).

[36]3. Any additional necessary monitoring for purposes of source identification or wasteload allocation tracking.

Table 3
Monitoring Parameters

Parameter
E. Coli
Total nitrogen
Total phosphorus
Total suspended solids
Cadmium
Copper
Lead
Zinc

All chemical analyses required herein shall be performed in accordance with analytical methods approved under 40 C.F.R. Part 136. When there is not an approved analytical method, the applicant may use any suitable method as described in Section 5.7 herein, but must provide a description of the method.

[37]The Permittee must use the information to evaluate the quality of the stormwater program and the health of the receiving waters at a minimum to include:

1. The Permittee shall perform the following activities annually:

A. Estimate annual cumulative pollutant loadings for pollutants listed in Table 3. Pollutant loadings will be reported in DMRs and updates to the existing TMDL Implementation Plans; and

B. In updates to the existing TMDL Implementation Plans, estimate and report the event mean concentrations of pollutants listed in Table 3 in discharges from the monitoring stations in Table 4 herein.

2. The Permittee shall perform the following activities at least once during the permit term, but no later than the fourth year of this permit:

A. Identify and prioritize additional efforts needed to address water quality exceedances, and receiving stream impairments and threats;

B. Identify water quality improvements or degradation

5.2. Interim Monitoring

Until such time as EPA has approved the Revised Monitoring Plan, the Permitee shall implement the following monitoring program:

5.2.1. Wet Weather Discharge Monitoring

The Permittee shall monitor for the parameters identified in Table 3 herein, at the locations listed in Table 4 herein. Monitoring frequency for chemical/physical parameters shall be taken by at least three times per year at a minimum. This does not include a geomorphologic assessment and/or physical habitat assessment. The Permittee shall conduct sampling as provided in 40 C.F.R. § 122.21(g)(7).

The Permittee shall monitor and provide an annual Discharge Monitoring Report for the period of interim monitoring, not to exceed two years.

TABLE 4
Monitoring Stations

A. Anacostia River Sub Watershed Monitoring Sites
1. Gallatin Street & 14th Street N.E. across from the intersection of 14 th St. and Gallatin St. in an outfall (MS-2)
2. Anacostia High School/Anacostia Recreation Center – Corner of 17th St and Minnesota Ave SE
B. Rock Creek Subwatershed Monitoring Sites
1. Walter Reed -- Fort Stevens Drive -- 16th Street and Fort Stevens Road, N.W. at an outfall (MS-6)
2. Soapstone Creek -- Connecticut Avenue and Ablemarle Street N.W. at an outfall (MS-5)
C. Potomac River Subwatershed Monitoring Sites
1. Battery Kemble Creek-49th and Hawthorne Streets, N.W. at an outfall (MS-4)
2. Oxon Run-Mississippi Avenue and 15th Street, S.E. into Oxon Run via an outfall (MS-1)

The District may revise this list of sites in accordance with its revised monitoring plan in Section 5.1 herein. Otherwise, changes to the above MS4 monitoring stations and/or sites for any reason shall be considered a major modification to the permit subject to the reopener clause.

5.2.2 Storm Event Data

In addition to the parameters listed above, the Permittee shall continue to maintain records of the date and duration (in hours) of the storm events sampled; rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff; the duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and a calculated flow estimate of the total volume (in gallons) and nature of the discharge sampled.

5.2.3 Sample Type, Collection, and Analysis

The following requirements apply only to samples collected for Part 5.2.1 herein -- Representative Monitoring.

1. For discharges from holding ponds or other impoundments with a retention period greater than 24 hours, (estimated by dividing the volume of the detention pond by the estimated volume of water discharged during the 24 hours previous to the time that the sample is collected) a minimum of one sample shall be taken for pollutants listed in Table 3 including temperature, DO, pH and specific conductivity. For all parameters, data shall be reported for the entire event of the discharge pursuant to 40 C.F.R. § 122.26(d)(2)(iii).

2. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Samples may be taken with a continuous sampler or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge, with each aliquot being separated by a minimum period of fifteen minutes.

3. Analysis and collection of samples shall be done in accordance with the most recent EPA approved laboratory methods and procedures specified at 40 C.F.R. Part 136 and its subsequent amendments.

5.2.4 Sampling Waiver

When a discharger is unable to collect samples due to adverse climatic conditions, the discharger must submit in lieu of sampling data a description of why samples could not be collected, including available documentation of the event.

Adverse climatic conditions which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high

winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

5.3 Monitoring Plan Implementation

Upon approval of the Revised Monitoring Plan by EPA Region III, or 2 years from the effective date of this permit, whichever comes first, the Permittee shall begin implementation of the Revised Monitoring Plan.

5.4 Dry Weather Monitoring

5.4.1 Dry Weather Screening Program

The Permittee shall continue with ongoing efforts to detect the presence of illicit connections and improper discharges to the MS4 pursuant to the District SWMP dated February 19, 2009. The Permittee shall perform the following: (1) continue to screen known problem sewersheds within the District based on past screening activities; (2) continue to inventory all MS4 outfalls in the District and inspect all outfalls by the end of the Permit term; and (3) ensure that the dry weather screening program has addressed all watersheds within the Permit term. The screening shall be sufficient to estimate the frequency and volume of dry weather discharges and their environmental impact.

5.4.2 Screening Procedures

Screening may be developed and/or modified based on experience gained during actual field screening activities. The Permittee shall establish a protocol which requires screening to ensure that such procedures are occurring, but such protocol need not conform to the procedures published at 40 C.F.R. § 122.26(d)(1)(iv)(D). The Permittee shall describe the protocol actually used in each Annual Report with a justification for its use. The procedures described in the February 19, 2009 SWMP shall be used as guidance.

5.4.3 Follow-up on Dry Weather Screening Results

The Permittee shall continue to implement its enforcement program for locating and ensuring elimination of all suspected sources of illicit connections and improper disposal identified during dry weather screening activities. The Permittee shall report the results of such implementation in each Annual Report.

5.5. Area and/or Source Identification Program

The Permittee shall continue to implement a program to identify, investigate, and address areas and/or sources within its jurisdiction that may be contributing excessive levels of pollutants to the MS4 and receiving waters, including but not limited to those pollutants identified in Table 3 herein.

5.6 Flow Measurements

The Permittee shall continue to select and use appropriate flow measurement devices and methods consistent with accepted scientific practices to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device.

5.7 Monitoring and Analysis Procedures

1. Monitoring must be conducted according to laboratory and test procedures approved under 40 C.F.R. Part 136 and subsequent amendments, unless other test procedures have been specified in the permit.

2. The Permittee is authorized to use a more current or sensitive (i.e., lower) detection method than the one identified in 40 C.F.R. Part 136 exists for a particular parameter, including but not limited to PCBs (Method 1668B) and mercury (Method 1613E). If used, the Permittee shall report using the more current and/or more sensitive method for compliance reporting and monitoring purposes.

3. EPA reserves the right to modify the Permit in order to require a more sensitive method for measuring compliance with any pollutant contamination levels, consistent with 40 CFR, Part 136, should it become necessary.

5.8 Reporting of Monitoring Results

The Permittee shall continue to report monitoring results annually in a Discharge Monitoring Report. Monitoring results obtained during the previous year shall be summarized and reported in the Annual Report postmarked no later than the effective date of the permit of the following year. The original and one copy of the Report are to be submitted to EPA at the following address:

NPDES Permits Branch
U.S. EPA Region III (3WP41)
Water Protection Division
1650 Arch Street
Philadelphia, PA 19103-2029

National Marine Fisheries Service/Northeast Region
Protected Resource Division
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

District Department of the Environment
Water Quality Division
1200 1st St, 6th Floor
Washington, D.C. 20002

5.9 Additional Monitoring by the Permittee

If the Permittee monitors (for the purposes of this permit) any pollutant more frequently than required by this permit, using laboratory and test procedures approved under 40 C.F.R. Part 136 and subsequent amendments or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the annual Discharge Monitoring Report. Such frequency shall also be indicated.

5.10 Retention of Monitoring Information

The Permittee shall continue to retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation for a period of at least five (5) years from the expiration date of this Permit. This period may be extended by request of EPA at any time.

5.11 Record Contents

Records of monitoring information shall include:

1. The date, exact place, time and methods of sampling or measurements:

2. The individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;

4. The individual(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of such analyses.

6. REPORTING REQUIREMENTS

The Permittee shall comply with the reporting requirements identified in this section, including but not limited to the deliverables identified in Table 5 below.

TABLE 5
Permit Deliverables

Submittal	Deadline
Outfall Discharge Monitoring Report	Each year on the effective date of the permit (EDOP) consistent with Paragraph IV.A.1.
Annual Report/Implementation Plan (Consolidated)	Each year on the EDOP.
Potomac River TMDL Implementation Plan	One year after EPA approval of the Potomac River TMDLs.
Anacostia River Trash TMDL Implementation Plan	One year after EPA Approval of the Trash TMDL for the Anacostia River.
SWMP and MS4 Permit Application	Six months prior to the permit expiration date.

6.1 Discharge Monitoring Reports

The Permittee shall provide discharge monitoring reports on the quality of stormwater discharges from the MS4 from monitoring as stipulated in Part 5 of this permit.

6.2 Annual Reporting/Implementation Plan (Consolidated)

The Permittee shall submit an Annual Report/Implementation Plan, which is to be provided to EPA on the effective yearly date of the permit for the duration of the permitting cycle.

6.2.1. Annual Report. The Annual Report portion of the submission shall follow the format of the Permit as written, and include at a minimum, the following elements:

a. A review of the status of program implementation and compliance (or non-compliance) with all schedules of compliance contained in this permit, including documentation as to compliance with performance standards contained in Section 4 herein;
b. A review of monitoring data and any trends in estimated cumulative annual pollutant loadings, including TMDL WLAs and TMDL Implementation Plans;
c. An assessment of the effectiveness of controls established by the February 19, 2009 SWMP;
d. An assessment of the projected cost of the February 19, 2009 SWMP and a description of the Permittee's budget for existing stormwater programs, including: (i) an overview of the Permittee's financial resources and budget, (ii) overall

indebtedness and assets, (iii) sources for funds for stormwater programs; and (iv) a demonstration of adequate fiscal capacity to meet the requirements of this Permit, notwithstanding the (a) the federal Anti-Deficiency Act, 31 U.S.C. §§ 1341, 1342, 1349, 1351, (b) the District of Columbia Anti-Deficiency Act, D.C. Official Code §§ 47-355.01-355.08 (2001), (c) D.C. Official Code § 47-105 (2001), and (d) D.C. Official Code § 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time;

e. A summary describing the number and nature of enforcement actions, inspections, and public education programs and installation of control systems;

f. Identification of water quality improvements or degradation through application of a measurable performance standard as stated throughout this Permit;

g. Results of storm and water quality modeling and its use in planning installation of control systems and maintenance and other activities;

h. An assessment of any February 19, 2009 SWMP modifications needed to reduce the discharge of pollutants to meet the requirements given in 40 C.F.R. § 122.26(d)(2)(iv);

i. Revisions, if necessary, to the assessments of controls and the fiscal analysis reported in the permit application under 40 C.F.R. § 122.26(d)(2)(iv) and (v);

j. A cost-benefit and affordability analysis to determine the commitments for the next year;

k. Methodology to assess the effects of the February 19, 2009 Stormwater Management Program (SWMP) in reducing pollution and achieving the requirements of the Clean Water Act and the requirements of 40 C.F.R. § 122.26(D)(2)(iv),(v), and(vi);

l. Annual expenditures and budget for the year following each annual report;

m. A summary of commitments for the next year and evaluation of the commitments from the previous year;

n. A summary of the monitoring data for stormwater and ambient sampling that is collected in the previous year and the plan, including identification of monitoring locations, to collect additional data for the next year;

o. The percentage of impervious cover reduced annually through the District's Updated Master LID Implementation Plan, including but not limited to the number and square footage of green roofs installed in the District; and

p. Percentage of impervious cover within the District, broken down by the three major watersheds in the District (Anacostia, Potomac and Rock Creek).

6.2.2 Implementation Plan. The Implementation Plan portion of the submission shall analyze in detail the work to be performed in each successive one-year increment by identifying and evaluating the previous year's efforts based on a cost benefit and affordability analysis. The Plan shall include an established measurable performance standard for each of the MS4 Program activities. The basis for each of the performance standards which will be used as tools for evaluating environmental results and determining the success of each MS4 activity listed in the Plan shall be described incorporating, when practicable, an integrated program approach that considers all programs and projects which have a direct as well as an indirect affect on stormwater management quantity and quality within the District. The Plan shall also

provide an update of the fiscal analysis for each year of the permit as required by 40 C.F.R. § 122.26(d)(2)(vi).

The reporting requirements of Table 6 below apply to each of the 12 components of the District's SWMP. All components of the SWMP shall be implemented and updated in accordance with the February 19, 2009 SWMP. Reporting deadline is with each Annual Report.

TABLE 6
Stormwater Management Program Components

SWMP Component
1. Management Plan for Commercial, Residential, and Government Areas
2.Management Plan for Industrial Facilities
3. Management Plan for Construction Sites
4. Flood Control Projects
5. Monitor and Control of Pollutants from Municipal Landfills or Other Municipal Waste Facilities
6. Monitor and Control Pollutants from Hazardous Waste Sites
7. Pesticides, Herbicide, and Fertilizer Application
8. Deicing Activities
9. Snow Removal
10. Management Plan to Detect and Remove Illicit Discharges
11. Enforcement Plan
12. Public Education

These reporting requirements are governed by the schedules presented in Table 5.

i. Reporting on Funding.

The Permitttee shall coordinate and facilitate a collaborative effort among relevant city agencies and departments to develop and recommend the level of expenditures necessary for the activities required in the Annual SWMP Reports and the SWMP Implementation Plans based on a cost-benefit analysis. If the recommended Report(s)/Plan(s) are not funded by the Mayor, the City Council and/or U.S. Congress, then a written explanation will be provided by the District of Columbia Department of the Environment within 30 days after a decision is reached by higher authorities. A written report on the above requests and decisions will also be incorporated into

each Annual Report(s) and Plan(s). In each submittal, an explanation will indicate why the recommended funding was not approved. Once the SWMP Annual Report and SWMP Annual Implementation Plan are developed by this procedure, failure by the District to carry out the minimum requirements in the Reports or Plans would be a violation of this permit.

Based on the level of funding available and a cost-benefit analysis, an evaluation shall be made in each Annual SWMP Implementation Plan as to the benefit of implementing various types of structural and non-structural controls. The effect of the number and type of annual maintenance, inspections, and other program requirements will also be taken into account. Several alternatives will be considered in searching for the optimum approach. The alternatives will be evaluated in terms of a cost-benefit analysis, taking into account the availability of funding and other environmental obligations of the District. The Permittee shall not be entitled to rely on non-affordability as a defense for noncompliance with conditions of this Permit.

6.2.3. Annual Report/Implementation Plan Revisions. Each Annual SWMP Report and SWMP Implementation Plan may be revised with written approval by EPA. The revised Report or Plan will become effective after its approval.

6.2.4 Signature and Certification. The Permittee shall sign and certify the Annual Report/Implementation Plan (consolidated) in accordance with Part 6.2 herein and include a statement or resolution that the Permittee's governing body or agency (or delegated representative) has reviewed or been appraised of the content of such submissions. The Permittee shall provide a description of the procedure used to meet the above requirement.

6.2.5 Effect of Non-Submittal or Non-Signature. Failure to submit an Annual SWMP Report and/or Annual SWMP Implementation Plan, according to the signatory requirements in Part VII.F, and by the deadlines identified in Table 4 herein, is a violation of this permit.

6.2.6 EPA Approval. In reviewing any submittal identified in Table 5, EPA may approve or disapprove each submittal. If EPA disapproves any submittal, EPA shall provide comments to the Permittee. The Permittee shall address such comments in writing within thirty (30) days of receipt of the disapproval from EPA. If EPA determines that the Permittee has not adequately addressed the disapproval/comments, EPA may revise that submittal or portions of that submittal. Such revision by EPA is effective thirty (30) days from receipt by the Permittee. Once approved by EPA, or in the event of EPA disapproval, as revised by EPA, each submission shall be an enforceable element of this permit.

6.3 Updated SWMP and MS4 Permit Application

The Permittee shall develop an Updated SWMP and Permit Application based on the findings presented in each of the Annual SWMP Reports, and Annual SWMP Implementation Plans submitted during the permitting cycle. All the improvements and modifications to the District‘s existing SWMP dated February 19, 2009 shall be made in the Updated SWMP to be submitted six months prior to the expiration date of the permit. The Updated SWMP shall define

the goals of the SWMP and provide an analysis to assure EPA that these goals will be achieved according to the schedule to be included in the Updated Plan. The Updated SWMP shall define what has to be done to meet the requirements of the Clean Water Act and a schedule for accomplishing these tasks.

One of the purposes of the SWMP is to develop a master plan pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(A) to determine the structural and source measures to reduce pollutants from runoff. Such control systems shall include those given in the SWMP dated February 19, 2009.

7. **STORMWATER MODEL**

The Permittee shall continue to update and report all progress made in developing a Stormwater Model and Geographical Information System (GIS) to EPA on an annual basis as an attachment to each Annual Report/Implementation Plan required herein.

On an annual basis, the Permittee shall report on pollutant load reductions throughout the area covered by this Permit using the statistical model developed by DDOE or other appropriate model. In the annual update, the Permittee shall include, at a minimum, other applicable components which are not only limited to those activities identified in Section 6 herein, but which are necessary to demonstrate the effectiveness of the Permittee's Stormwater Management Program toward implementing a sustainable strategy for reducing stormwater pollution runoff to the impaired waters of the District of Columbia.

Assess performance of stormwater on-site retention projects through monitoring, modeling and/or estimating storm retention capacity to determine the volume of stormwater removed from the MS4 system in a typical year of rainfall as a result of implementing stormwater controls. This provision does not require all practices to be individually monitored, only that a reasonable evaluation strategy must provide estimates of overall volume reductions by sewershed.

8. **OTHER APPLICABLE PROVISIONS**

8.1. WQS and TMDL WLA Implementation Plans and Compliance Monitoring.

1. The Permit includes all TMDL WLAs applicable to the District MS4 approved or established as of the effective date of this Permit.

2. No later than one year from the effective date of this Permit, the Permitttee shall submit to the permitting authority updates to the Anacostia and Rock Creek Implementation Plans. This does not pertain to the schedule identified in Table 5 for submission of TMDL Implementation Plans for the Potomac River or the Anacostia River Trash TMDL. Water quality-based effluent limits for stormwater discharges that implement WLAs in TMDLs may be

expressed in the form of management practices under specified circumstances. *See* 33 U.S.C. §1342(p)(3)(B)(iii); 40 C.F.R. §122.44(k)(2)&(3). If management practices alone adequately implement the WLAs, then additional controls will not be necessary. The sediment TMDLs and their implementation plans are incorporated by reference as the implementation plans for achieving the metals, nutrients, and other toxic and non-conventional pollutants that are naturally present in soils as the loading reduction specified in several TMDLs. Many of these pollutants are present as particulates and will be removed with other particles. Dissolved forms of pollutants are often absorbed or adsorbed to particulate matter and can also be removed along with the particulates (i.e., sediment). Further, management practices in similar watersheds or receiving stream, segment of the stream, or other water body are expected to achieve similar reductions. Effluent limitations that reduce turbidity in the stormwater discharge are also expected to achieve reductions of the other pollutants of concern.

3. To be eligible for approval by EPA, each TMDL Implementation Plan and any subsequent updates and/or modifications to them must contain at a minimum:

A. A specified ultimate date for final compliance with the WLA.

B. A set of controls for achieving the MS4 WLA, which may include stormwater pollution reduction and elimination laws and regulations, LID Implementation as set forth in section 4.1.1 herein, municipal operations to reduce the discharge of pollutants in stormwater as set forth in Section 4.2 herein, and other management practices. The set of controls may be adapted as opportunities change, as long as interim deadlines for WLAs are still met.

C. Numeric benchmarks which specify annual pollutant load reductions and the extent of control actions for achieving these annual benchmarks.

D. An interim compliance deadline for achieving the percentage of pollutant load reductions specified in the implementation plan for that WLA by, at the latest, the end of the Permit term.

E. Demonstration, using modeling and/or current best practices, how the WLA will be achieved using the chosen controls, by the date for ultimate achievement. An annual evaluation can be based upon either presumed pollutant reductions from management practices implementation or actual monitoring data. If an annual evaluation of monitoring data indicates that these practices are insufficient progress towards meeting the WLA, the Permittee shall adjust its management towards meeting the water quality standards and appropriate TMDLs.

F. Specific public involvement actions, to engage the public in a meaningful way in the process of developing the TMDL implementation plan, including in the identification of a compliance deadline and selection of pollution controls. The Permittee shall begin including the public in such discussions no later than six months from the date of the TMDL WLA approval.

G. Sufficient monitoring for chemical constituents listed in Table 3 in each TMDL watershed to enable timely, iterative evaluation of the implementation plan, and require management responses if monitoring reveals insufficient progress toward meeting the WLA within the specified timeframe. . For TMDL pollutants not included in Table 3, pollutant load reductions will be estimated using BMP efficiencies in place of monitoring data.The monitoring elements, and pollutant load reductions estimated using BMP efficiencies, shall at a minimum, describe:

i. How the extent of pollution control implementation is being tracked; and
ii. Quantified progress in meeting the implementation benchmarks.

H. The TMDL Implementation Plan elements required in this section will become enforceable permit terms upon approval of such Plans, including the interim and final WLA achievement dates in this section.

In addition to the duty to comply with the discharge limitations in Part 9.1 of this Permit, the Permittee shall demonstrate compliance as described in this Part and in Part 5 herein (Monitoring and Assessment of Controls). In accordance with the schedule identified in Table 5 herein, the Permittee shall further submit implementation plans/modifications to existing plans to reduce discharges consistent with any applicable EPA-approved WLA component of any established TMDL. An applicable TMDL WLA for this Permit means any WLA in any TMDL established on, modified during, or approved by EPA for a receiving stream, segment of a stream, or other water body within the District of Columbia to which the MS4 system discharges.

EPA has identified all applicable TMDL WLAs and the associated reductions from current estimated loadings in approved Agency documents (Refer to the District Department of the Environment's website for a listing of the DC TMDLs on its webpage and the Anacostia River/Rock Creek TMDL Implementation Plans).

For the pollutants listed in Table 3, demonstration of compliance will be calculated using the procedures (i.e., Simple Method) identified in the SWMP dated February 19, 2009, approved Anacostia River TMDL Implementation Plan dated February 19, 2005, , and/or other appropriate modeling tools and data on BMP efficiencies. The Permittee will report such information by comparing the monitoring data for that pollutant to the approved pollutant according to the procedures required by the Permit herein, specific WLAs and its associated stormwater load reductions for the receiving water body.

The Permittee shall report to EPA the results of this analysis through Annual Reports in accordance with the compliance schedule in this Permit. If the analysis concludes that the MS4 discharge monitored for that specific pollutant is not meeting pollutant-specific WLAs, the Permittee shall develop, through the Annual Reports in accordance with the compliance schedule in this Permit, recommendations for correction of the non compliance problems. The Plan/Modifications shall consist of documenting all previous and on-going efforts at achieving

the specific pollutant reductions identified in the TMDL WLA and further demonstrating additional controls sufficient to achieve those reductions through an established performance based benchmark. This benchmark shall be applied against annual projected performance standards for purposes of revising the final implementation plan when determining measurable progress to achieve adequate reduction.

The Permittee shall perform an assessment of each TMDL Implementation Plan, including an assessment of each of the following program elements: street sweeping; inspection and enforcement; public outreach; constructed green technology practices and other management practices; and evaluation of load reductions. The Permittee shall submit this assessment to EPA as part of the Stormwater Management Plan for review and approval. The assessment methodology for each Plan approved shall demonstrate at least an overall stormwater pollutant reduction percentage from the baseline monitoring program for each watershed during the Permit term, for purposes of achieving TMDL WLAs. EPA reserves the right after a review and approval of each plan modification/annual report to modify this permit for purposes of requiring additional numeric and/or narrative effluent controls on the discharge of pollutants from the MS4. EPA shall make the results of any such determination(s) in writing available to the Permittee and other interested persons including, but not limited to members of the District of Columbia MS4 Task Force. Currently, TMDLs are under development for the Potomac River and for the Anacostia River (Refer to Potomac River Summit for a "Trash Free" River by 2013 and Potomac River Watershed Trash Treaty executed in 2005). Upon approval by EPA, the TMDL implementation plan(s) shall be incorporated into the SWMP in accordance with the compliance schedule in Part III.A and Table 4 of this Permit.

The Permittee shall submit to EPA the applicable TMDL Implementation Plans for the Potomac River and for the Anacostia River (Trash TMDL) for review and approval in accordance with Table 5 herein. The Permittee shall prepare for implementation of the TMDLs on the following schedule: the TMDL approvals for the Potomac River are expected to occur in the January 2011 time frame and the Anacostia River Trash TMDL is expected to occur in the March 2010 time frame.

If the analysis concludes that the MS4 discharge monitored for that specific pollutant is not meeting approved implementation plan schedules for the pollutant-specific WLAs, the Permittee shall develop through the Annual Reports in accordance with the compliance schedule in this Permit recommendations for correction of the non-compliance problems.

8.1.1 Potomac River TMDL Implementation Plan

The Permittee shall develop and implement one consolidated Potomac River TMDL Implementation Plan using the format of the previously-approved Anacostia River and Rock Creek Implementation Plans in accordance with Section 8.1 above and with the schedule provided in Table 5 of this Permit. As part of the consolidated Annual Report/Implementation Plan, the Plan shall be assessed and evaluated for WLAs reductions in accordance with the schedule in Section 8.1 above. All elements of the approved subject TMDL Implementation

Plan shall be enforceable conditions of the Permit upon approval by EPA, including interim and final WLA achievement dates.

8.1.2 Anacostia River Trash TMDL Implementation Plan

The Permittee shall develop and implement an Anacostia River TMDL Implementation Plan in accordance with Section 8.1 above and with the schedule provided in Table 5 of this Permit. As part of the consolidated Annual Report/ Implementation Plan and assessed and evaluated for WLAs reductions in accordance with Section 8.1 above. All elements of the approved subject TMDL Implementation Plan shall be enforceable conditions of the Permit upon approval by EPA, including interim and final WLA achievement dates.

8.2 Compliance Monitoring with Water Quality-Based Effluent Limitations

EPA reserves the right to modify the Permit as needed, when monitoring results set forth in Sections 5 and 8 of the permit show that current practices required by this Permit are not sufficient to minimize pollutants in stormwater discharges or other unauthorized discharges into the MS4 System as necessary to comply with standards contained in section 1.4 herein.

8.3 Hickey Run

Throughout the life of the Permit, the Permittee shall implement and complete the proposed replacement/rehabilitation, inspection and enforcement, and public education aspects of the strategy for Hickey Run as described in Figure 5 of the February 19, 2009 SWMP, which is incorporated herein. In addition, the Permittee shall continue efforts to install an end-of-pipe BMP to address TMDL pollutants of concern in Hickey Run

At a minimum, the Permittee shall monitor at the Fort Lincoln-Newtown Inlet site and the three other stations one upstream from the Fort Lincoln-Newton Inlet site and one downstream from that site, to evaluate progress with the Hickey Run Strategy. Such monitoring shall be performed contemporaneously with the Anacostia River Subwatershed Monitoring site (Gallatin Street & 14th St. NE) described in Section 5.0, Table 4, of the Permit.

If monitoring results indicate additional measures are necessary, the Permittee shall implement the catch basin retrofit aspect of the proposed strategy for Hickey Run or other management strategies at least as effective.

9. STANDARD PERMIT CONDITIONS FOR NPDES PERMITS

9.1 Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and may result in an enforcement action; permit termination, revocation and reissuance, or modification; and denial of a permit renewal application.

9.2 Inspection and Entry

The Permittee shall allow EPA, or an authorized representative, and/or the District's contractor(s)/subcontractor(s), upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Permittee's premises at reasonable times where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be maintained under the conditions of this Permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), processes, or operations regulated or required under this Permit; and

4. Sample or monitor at reasonable times, for the purpose of assuring Permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

9.3 Civil and Criminal Penalties for Violations of Permit Conditions

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

The Clean Water Act provides that any person who violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act, or any permit condition or limitation implementing such section, or any requirement imposed in an approved pretreatment program and any person who violates any Order issued by EPA under Section 301(a) of the Act, shall be subject to a civil penalty not to exceed $25,000 per day for each violation, Pursuant to the Civil Monetary Penalty Inflation Adjustment Rule, EPA has raised the statutory maximum penalty for such violations to $37,500 per day for each such violation. 74 Fed. Reg. 626 (Jan. 7, 2009). The Clean Water Act also provides for an action for appropriate relief including a permanent or temporary injunction.

Any person who negligently violates Section 301, 302, 305, 307, 308, 318, or 405 of the Clean Water Act, any permit condition or limitation implementation any such section, shall be punished by a criminal fine of not less than $5,000 nor more than $50,000 per day of such violation, or by imprisonment for not more than 3 years, or by both. Any person who knowingly violates any permit condition or limitation implementing Section 301, 302, 305, 307, 308, 318, or

405 of the Clean Water Act, and who knows at the time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000, or by imprisonment of not more than 15 years, or by both.

9.4 Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

In the event that the Permittee or permitting authority determines that discharges are causing or contributing to a violation of applicable WQS, the Permittee shall take corrective action as soon as possible to eliminate the WQS exceedance or correct the issues and/or problems by requiring the party or parties responsible for the alleged violation(s) comply with Part I.C.1 (Limitations to Coverage) of this Permit. The methods used to correct the WQS exceedances shall be documented in subsequent annual reports and in revisions to the Stormwater Management Plan dated February 19, 2009.

9.5 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this permit;

2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;

4. Information newly acquired by the Agency, including but not limited to the results of the studies, planning, or monitoring described and/or required by this permit;

5. Material and substantial facility modifications, additions, and/or expansions;

6. Any anticipated change in the facility discharge, including any new significant industrial discharge or changes in the quantity or quality of existing industrial discharges that will result in new or increased discharges of pollutants; or

7. A determination that the permitted activity endangers human health or the environment and that it can only be regulated to acceptable levels by permit modification or termination.

The effluent limitations expressed in this Permit are based on compliance with the District of Columbia's water quality standards in accordance with the Clean Water Act. In the

event of a revision of the District of Columbia's water quality standards, this document may be modified by EPA to reflect this revision.

The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. When a permit is modified, only conditions subject to modification are reopened.

9.6 Retention of Records

The Permittee shall continue to retain records of all documents pertinent to this Permit not otherwise required herein, including but not limited copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the expiration date of this Permit. This period may be extended by request of EPA at any time.

9.7 Signatory Requirements

All Discharge Monitoring Reports, stormwater pollution prevention plans, reports, certifications or information either submitted to EPA or that this permit requires be maintained by the Permittee shall be signed by either a principal executive officer or ranking elected official, or a duly authorized representative of that person. A person is a duly authorized representative only if: (i) the authorization is made in writing by a person described above and submitted to EPA; and (ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for an agency. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new notice satisfying the requirements of this paragraph must be submitted to EPA prior or together with any reports, information, or applications to be signed by an authorized representative.

9.8 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Act, 33 U.S.C. § 1321.

9.9 District Laws, Regulations and Ordinances

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable District law, regulation or ordinance identified in the SWMP dated February 19, 2009. In the case of "exemptions and waivers" under District law, regulation or ordinance, Federal law and regulation shall be controlling.

9.10 Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9.11 Severability

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

9.12 Transfer of Permit

In the event of any change in ownership or control of facilities from which the authorized discharge emanates, the permit may be transferred to another person if:

1. The current Permittee notifies the EPA, in writing of the proposed transfer at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

3. The EPA does not notify the current Permittee and the new Permittee of intent to modify, revoke and reissue, or terminate the permit and require that a new application be submitted.

9.13 Construction Authorization

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9.14 Historic Preservation

During the design stage of any project by the Government of the District of Columbia within the scope of this permit that may include ground disturbance, new and existing or retrofit construction, or demolition of a structure, the Government of the District of Columbia shall notify the Historic Preservation liaison and provide the liaison planning documents for the proposed undertaking. The documents shall include project location; scope of work or conditions; photograph of the area/areas to be impacted and the methods and techniques for accomplishing the undertaking. Depending on the complexity of the undertaking, sketches, plans and specifications shall also be submitted for review. The documentation will enable the liaison to assess the applicability of compliance procedures associated with Section 106 of the National Historic Preservation Act. Among the steps in the process are included:

1. The determination of the presence or absence of significant historic properties (architectural, historic or prehistoric). This can include the evaluation of standing structures and the determination of the need for an archaeological survey of the project area.

2. The evaluation of these properties in terms of their eligibility for nomination to the National Register of Historic Places.

3. The determination of the effect that the proposed undertaking will have on these properties.

4. The development of mitigating measures in conjunction with any anticipated effects.

All such evaluations and determinations will be presented to the Government of the District of Columbia for its concurrence.

If an alternate Historic Preservation procedure is approved by EPA in writing during the term of this permit, the alternate procedure will become effective after its approval.

9.15 Endangered Species

The U.S. Fish and Wildlife Service (FWS) has indicated that Hay's Spring Amphipod, a Federally listed endangered species, occurs at several locations in the District of Columbia. The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) has indicated that the endangered shortnose sturgeon occurs in the Potomac River drainage and may occur within the District of Columbia. The FWS and NOAA Fisheries indicate that at the present time there is no evidence that the ongoing stormwater discharges covered by this permit are adversely affecting these Federally-listed species. Stormwater discharges, construction, or any other activity that adversely affects a Federally-listed endangered or threatened species are not authorized under the terms and conditions of this permit.

The monitoring required by this permit will allow further evaluation of potential effects on these threatened and endangered species once monitoring data has been collected and

analyzed. EPA requires that the Permittee submit to NOAA Fisheries, at the same time it submits to EPA, the Annual Outfall Discharge Monitoring Report of the monitoring data which will be used by EPA and NOAA Fisheries to further assess effects on endangered or threatened species. If this data indicates that it is appropriate, requirements of this NPDES permit may be modified to prevent adverse impacts on habitats of endangered and threatened species.

The above-referenced Report of monitoring data is required under this permit to be sent on an annual basis to:

The United States Environmental Protection Agency
Region III (3WP41)
Water Protection Division
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

National Marine Fisheries Service/Northeast Region
Protected Resource Division
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

9.16 Toxic Pollutants

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Act, 33 U.S.C. § 1317(a), for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, the Permittee shall comply with such standard or prohibition even if the permit has not yet been modified to comply with the requirement.

9.17 Bypass

9.17.1. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.

9.17.2 Notice

1. Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it must submit prior notice, if possible at least ten days before the date of the bypass. See 40 C.F.R. § 122.41(m)(3)(i).

2. Unanticipated bypass. The Permittee must submit notice of an unanticipated bypass as required by 40 C.F.R. § 122.41(l)6) (24-hour notice). See 40 C.F.R. § 122.41(m)(3)(ii).

9.17.3 Prohibition of bypass. See 40 C.F.R. § 122.41(m)(4).

1. Bypass is prohibited, and EPA may take enforcement action against the Permittee for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage as defined herein;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The Permittee submitted notices as required herein.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above.

9.18 Upset

Effect of an upset: An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of 40 C.F.R. § 122.41(n) are met.

9.19 Reopener Clause for Permits

The permit may be modified or revoked and reissued, to incorporate any applicable effluent standard or limitation issued or approved under Sections 301, 304, or 307 of the Clean Water Act, and any other applicable provision, such as provided for in the Chesapeake Bay Agreements based on water quality considerations, and if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

2. Controls any pollutant not limited in the permit. The permit, as modified or reissued under this paragraph, shall also contain any other requirements of the Act then applicable; or

3. The permit may be modified, or revoked and reissued to incorporate additional controls that are necessary to ensure that the permit effluent limits are consistent with any applicable TMDL WLA allocated to the discharge of pollutants from the MS4.

This permit may also be reopened, modified, or revoked and reissued as specified in 40 C.F.R. §§ 122.44(c), 122.62, 122.63, 122.64, and 124.5.

9.20 Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, it must apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit. EPA may grant permission to submit an application less than 180 days in advance but no longer than the permit expiration date. In the event that a timely and complete reapplication has been submitted and EPA is unable through no fault of he Permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

10. PERMIT DEFINITIONS

Terms that are not defined herein shall have the meaning accorded them under section 502 of the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, or its implementing regulations, 40 C.F.R. Part 122.

"Annual Report" refers to the consolidated Annual Report and Implementation Plan that the Permittee is required to submit annually as described in section 6.2 herein.

"Bioretention" means the use of engineered soils and vegetation, often though not always with a sand or gravel layer beneath the soil layer, to reduce and retain a target volume of stormwater from a given site through the functions of: pore space and surface ponding storage; infiltration; extended filtration; reuse, and/or evapotranspiration.
"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. See 40 C.F.R. § 122.41(m)(1)(i).

"CWA" means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L. 97-117, 33 U.S.C. §§ 1251 *et seq.*

"Director" means the Regional Administrator of USEPA Region 3 or an authorized representative.

"Discharge" for the purpose of this permit, unless indicated otherwise, refers to discharges from the Municipal Separate Storm Sewer System (MS4).

"Discharge Monitoring Report", "DMR" or "Outfall Discharge Monitoring Report" includes the monitoring and assessment of controls identified in Section 5 herein.

"EPA" means USEPA Region 3.

“Extended Filtration” means the filtration of stormwater through a medium such as engineered bioretention soil, anchored by vegetation that delays the release of a given volume of stormwater from a given site by a minimum of six hours. Extended filtration units typically are lined bioretention units.

The term “Federal Facilities” shall have the meaning contained in “EPA Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act” (Dec. 2009).

"Goal" means the end results the Permittee is to strive to achieve.

“Green Roof” is a low-maintenance vegetated roof system that stores rainwater in a lightweight soil medium, where the water is taken up by plants and transpired into the air.

“Green Technology Practices” applies to new and re-development and means stormwater management practices that are used to mimic pre-development site hydrology by using site design techniques that retain stormwater on-site through infiltration, evapotranspiration, harvest and use.

"Guidance" means assistance in achieving a goal.

"Illicit connection" means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities, pursuant to 40 C.F.R. § 122.26(b)(2).

“Impaired Water” (or “Water Quality Impaired Water” or “Water Quality Limited Segment”): A water is impaired for purposes of this permit if it has been identified by the District or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State water quality standards (these waters are called “water quality limited segments” under 40 C.F.R. 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

“Internal Sampling Station” means a monitoring site which is located within the Municipal Separate Storm Sewer System (MS4) upstream of an outfall pipe which discharges stormwater directly into a receiving water body.

"Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit (i.e., an area where wastes are applied onto or incorporated into the soil surface [excluding manure spreading operations] for treatment or disposal), surface impoundment, injection well, or waste pile.

"Large or Medium municipal separate storm sewer system" means all municipal separate storm sewers that are either: (1) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 C.F.R. Part 122); or (2) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 C.F.R. Part 122); or (3) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

"MS4" refers to either a Large or Medium Municipal Separate Storm Sewer System.

"Municipal Separate Storm Sewer" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (1) owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes; (2) Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); (3) not a combined sewer; and (4) not part of a Publicly-Owned Treatment Works as defined at 40 C.F.R. § 122.2.

“MS4 Permit Area” shall mean all areas within the corporate boundary of the District of Columbia served by, or otherwise contributing to discharges from, municipal separate storm sewers owned or operated by the District of Columbia.

“Offset” means a unit of measurement, either used as monetary or non-monetary compensation, as a substitute or replacement for mitigation of a stormwater control practice that has been determined to be impracticable to implement.

“Performance measure” means for purposes of this Permit, a minimum set of criteria for evaluating progress toward meeting a standard of performance.

“Performance standard” means for purposes of this Permit, a cumulative measure for evaluating attainment of a goal.

"Permittee" refers to the Government of the District of Columbia and all subordinate District and independent agencies, such as the District of Columbia Water and Sewer Authority, directly accountable and responsible to the City Council and Mayor as authorized under the Stormwater Permit Compliance Amendment Act of 2000 and any subsequent amendments for administrating, coordinating, implementing, and managing stormwater for MS4 activities within the boundaries of the District of Columbia.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other

floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

“Pollutant of concern” means a pollutant in an MS4 discharge that may cause or contribute to the violation of a water quality criterion for that pollutant downstream from the discharge.

“Post-Development Hydrology” means the combination of runoff, infiltration and evapotranspiration rates, volumes, durations and temperatures that exist on the site following human-induced land disturbance.

“Pre-Development Hydrology” means the combination of runoff, infiltration and evapotranspiration rates, volumes, durations and temperatures that typically existed on the site before human-induced land disturbance occurred.

“Retrofit” means improvement(s) to an existing or new the stormwater conveyance system.

"Significant spills" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous oil or hazardous substances in excess of reportable quantities under section 311 of the CWA (see 40 C.F.R. § 110.10 and C.F.R. C.F.R. § 117.21) or section 102 of CERCLA (see 40 C.F.R.. § 302.4).

“Stormwater” means the flow of surface water which results from, and which occurs immediately following, a rainfall event, snow melt runoff, and surface runoff and drainage.

“Stormwater management” means (1) for quantitative control, a system of vegetative or structural measures, or both, which reduces the increased volume and rate of surface runoff caused by man-made changes to the land; and (2) for qualitative control, a system of vegetative, structural, and other measures which reduce or eliminate pollutants which might otherwise be carried by surface runoff.

“SWMP” is an acronym for Stormwater Management Plan/Program. For purposes of this permit, the term includes all stormwater activities described in the District's SWMP dated October 19, 2002, updated February 19, 2009, and all other documents and related correspondences embodied under the tier of the program document from the previous Permit and to be generated from this Permit.

“Severe property damage” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 C.F.R. § 122.41(m)(1)(ii).

"Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw

materials used in food processing or production; hazardous oil or hazardous substances in excess of reportable quantities under section 311 of the CWA (see 40 C.F.R. § 110.10; 117.21) or section 102 of CERCLA (see 40 C.F.R. §302.4).

"Total Maximum Daily Load (TMDL) Units" means for purposes of this Permit, the sum of individual waste load allocations (WLAs) and natural background. Unless specifically permitted otherwise in an EPA-approved TMDL report covered under the Permit, TMDLs are expressed in terms of mass per time, toxicity or other appropriate measure such as pollutant pounds of a total average annual load.

"TMDL Implementation Plan" means for purposes of this Permit, a plan and subsequent revisions/updates to that plan that are designed to demonstrate how to achieve compliance with applicable waste load allocations as set forth in the permit requirements described in Section 8.1.4.

"Stormwater Management Program (SWMP)" is a modified and improved SWMP based on the existing SWMP and on information in each of the Annual Reports/Implementation Plans/Discharge Monitoring Reports. The goal of the SWMP is to describe the list of activities that need to be done to meet the requirements of the Clean Water Act, an explanation as to why these activities will meet the Clean Water Act requirements, and a schedule for those activities, taking into account the cost benefit and affordability analysis to be done in each of the Annual Implementation Plans.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 C.F.R. § 122.41(n)(1).

"Waste pile" means any non-containerized accumulation of solid, nonflowing waste.

"Water quality standards" refers to the District of Columbia's Surface and Ground Water Quality Standards codified at Code of District of Columbia Regulations §§ 21-1100 *et seq.*, which are effective on the date of issuance of the Permit and any subsequent amendments which may be adopted during the life of this Permit.

"Waters of the United States" is defined at 40 C.F.R. § 122.2.

This write-up is prepared as part of the review of the Draft DC MS4 permit. A paragraph-by-paragraph comment was attempted. The Permit requires DC to implement quite an extensive set of tasks.

It was noted that a large part of the activities required of DC is **to reduce the storm water runoff**. To the extent, the Draft Permit lays down a ”Standard” under sections 4.1.1.a and 4.1.1.b.

And, after implementing controls (the permit is also specific what controls) DC is to

> “Assess performance of stormwater on-site retention projects through monitoring, modeling and/or estimating storm retention capacity to determine the volume of stormwater removed from the MS4 system in a typical year of rainfall as a result of implementing stormwater controls. This provision does not require all practices to be individually monitored, only that a reasonable evaluation strategy must provide estimates of overall volume reductions by sewershed.” (Draft MS4 Permit Section 7).

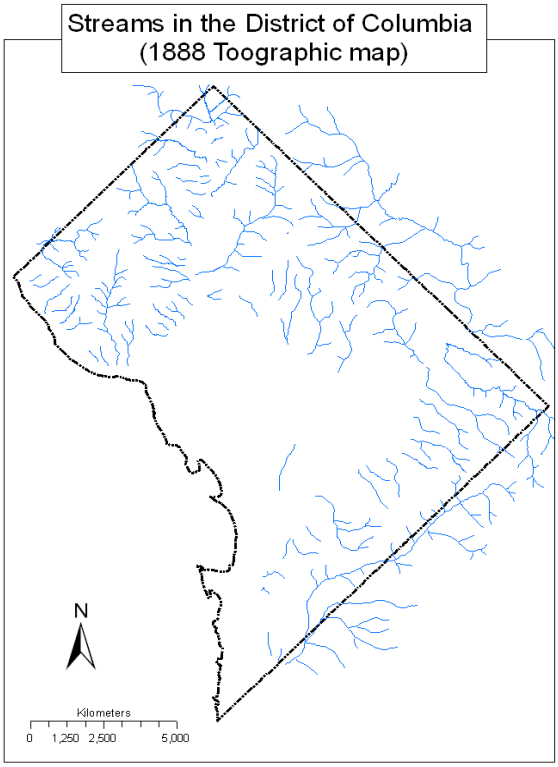
These notes examine the technical issues and the merit of storm water reduction as a performance standard in the District of Columbia MS4 permit.

The relevant peculiar features of the District of Columbia are noted to give an indication as to where certain technologies will yield no storm water control benefit (or may even be detrimental).

An example is given where, for a 15 year, 6-hour storm, the most aggressive LID will only give a 2% storm runoff reduction.

This write-up is to demonstrate that:

1. The level of reduction achieved through LID is insignificant
2. Volume reduction in not a storm water quality issue in DC and should not be an NPDES requirement



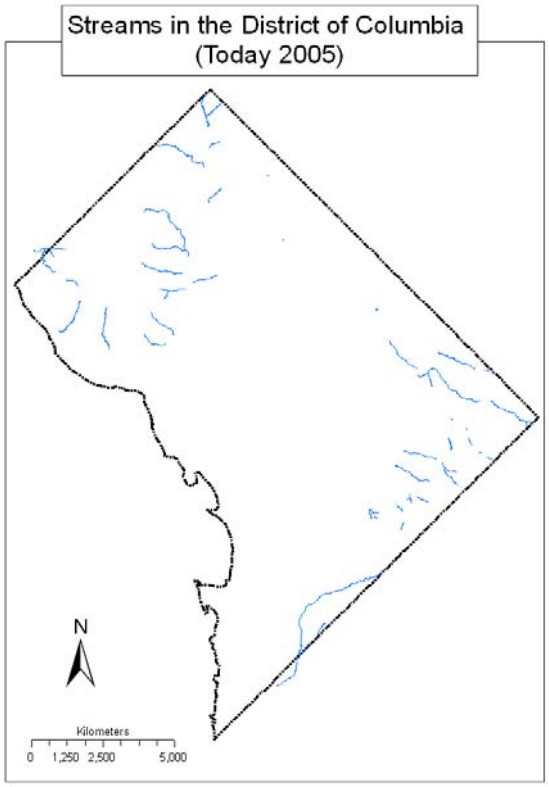


Figure 1. Pre-development Second and Higher Order Streams

Figure 2. Post-development Streams

Figure 1 and Figure 2 show the pre and post development second and higher order streams in the District of Columbia (DC).

Footnote: *Figure 1 does not represent a true "pre-development" condition. By 1888, the area south of Florida Avenue (then known as Boundary Road) had been developed as part of the establishment of the Federal city. This central portion of the city, where several federal buildings are situated, was already devoid of streams. Where did the streams go? They were encased in large drainage pipes which carry the flows and all the city's waste water directly to the rivers. Later, the flows were directed to be treated with waste water at Blue Plains Treatment Plant and the drainage system forms DC's combined sewer system. Today, Tiber Creek, among the significant streams in early DC, and the infiltrated water that fed it, continues to run to Blue plains. The combined sewer area and will not be discussed in any detail here. However some important facts related to storm water control measures in the combined sewer area are worth mentioning very briefly:*

Storm water control by infiltration is not beneficial (and may even be detrimental) in the combined sewer area. Infiltration augments ground water and the fate of the ground water is of consequence. Several large buildings, including federal buildings, in the combined sewer area have sump pumps to control ground water intrusion into below-ground living/working spaces. The sump pump effluent is discharged to the combined sewer drains. These pumps work day and night 24 hours a day, 7 days a week. The flow from these pumps is considerable: it is documented that from only seven federal building alone more than 4 million gallons per day of clean ground water is discharged to the combined sewer drains. Not only we treat all that ground water, during a rainfall event, this sump pump effluent that is discharged to Blue plains displaces the storm water runoff that would otherwise be treated at the plant resulting in combined sewer overflow (CSO). Infiltration increases the ground water, the pumped ground water reduces plant capacity. Capturing the sump pump effluent and using it to water plants goes a long way in reducing CSO! Certainly the federal government can help in capturing ground water effluent from its buildings. Again, this write-up is not for CSO issues – time permitting another note will be prepared for the subject.

Below are a series of "Facts" that are referenced in later discussions.

Fact #1.

DC had a multitude of second and higher order streams (other than the Anacostia, Potomac and Rock Creek). The streams are relatively very close to each other. Only few streams survive today, and all surviving streams are in the DC MS4 area.

Fact #2

At many locations in DC, the layouts of the separate storm drains are in such a way that they run parallel to the original streams. An example is shown below. Figures 3 shows the natural drainage with the original stream. Figure 4 shows the storm drains and relative location of the original stream. The slight shift may be an artifact of the mapping process, and one can say that the storm drain was placed directly on the streambed.

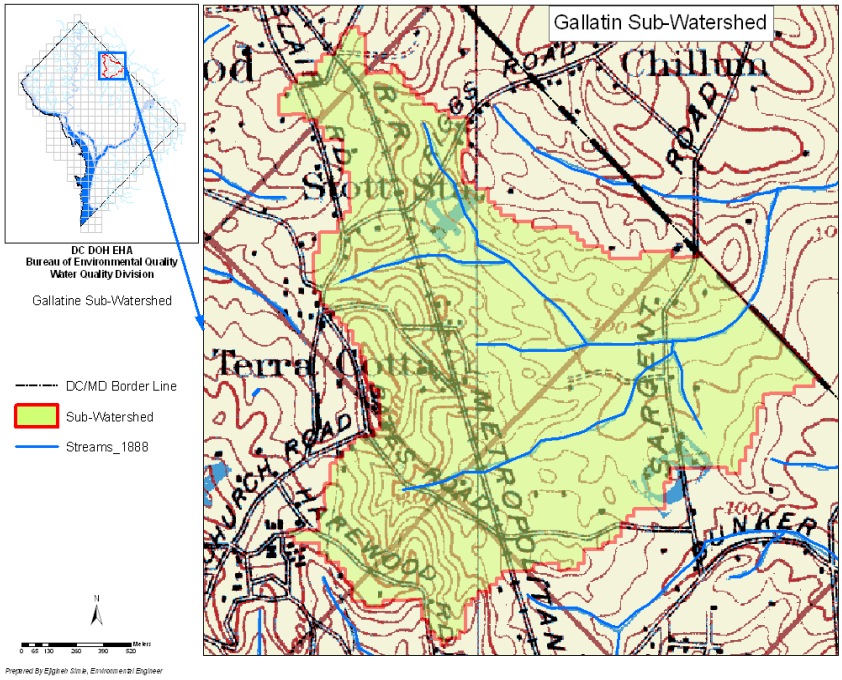
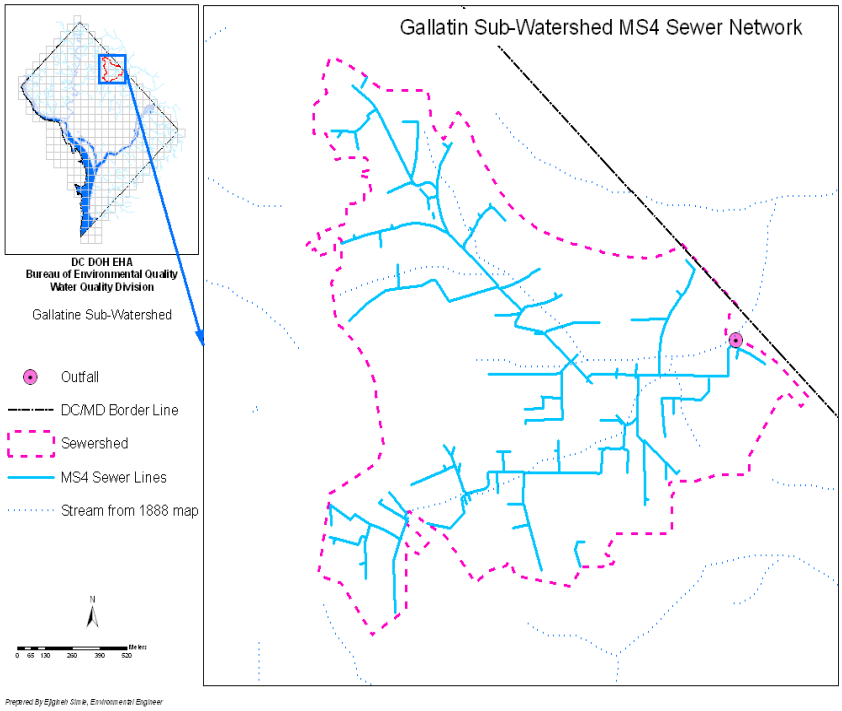


Figure 3. Pre-development Topography Showing



Stream

Figure 4. Separate Storm Sewer System Encasing Stream

Fact # 3

No information as to the actual drainage design is available at the time of the drafting of this note. It is not known as to where, how and how much of the ground water that had fed the original stream enters the storm drain, today many of the DC MS4 outfalls carry continuous dry weather flow: evidence of the streams that are captured in a manner shown under Fact #2. The headwaters of some of the surviving streams originate at outfall(s). An example of such stream is Hickey Run which was at least twice its current length.

Fact # 4

A large proportion (maybe up to 70 percent) of the DC MS4 area is composed of parkland, low and medium density residential uses.

Fact # 5

Development in a large portion of the DC MS4 area has occurred over five or more decades ago (can be verified by the dates of the housing stock and infrastructure development).

Fact #6

At some locations, the natural drainage has been altered by storm drains. The drainage area as determined by topography may not coincide with the pre-development or post-development drainage area. For example in the watershed considered above, drainage area is dictated by the location of the catch basin associated with the storm drain; thus the variation between the watershed (based on topography and the 'sewershed', based on the storm water conveyance system. Figure 5. Shows the watershed and sewershed.

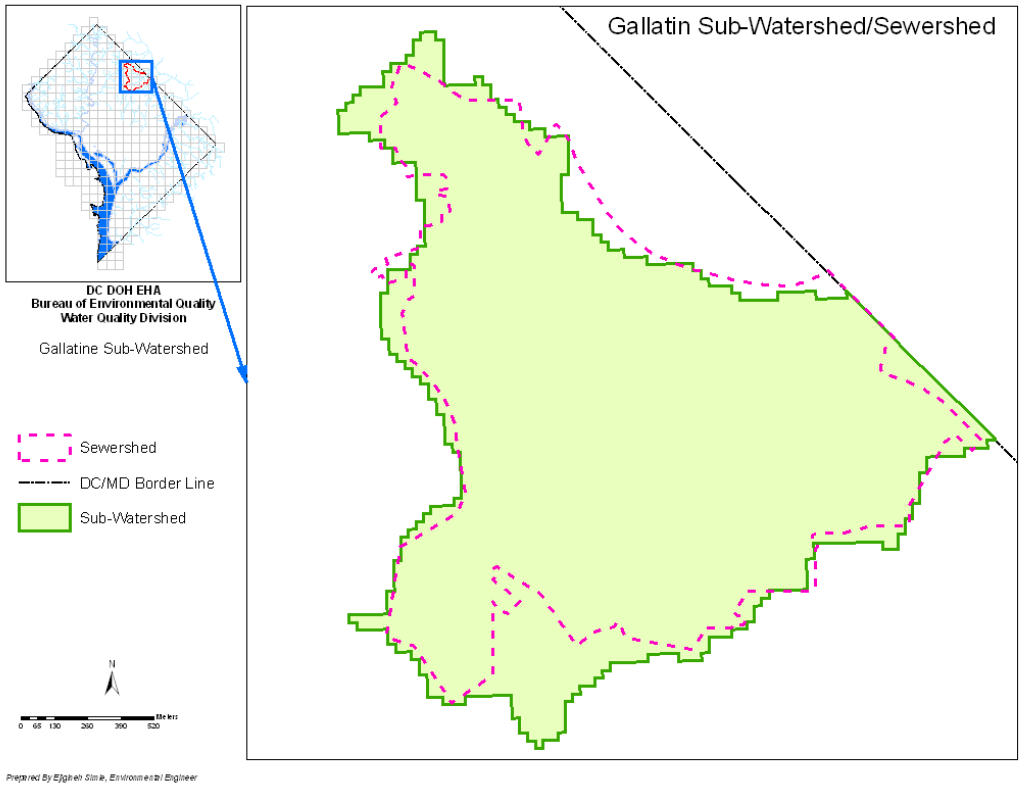


Figure 5. Watershed and Sewershed

There are two major ways by which storm water runoff may have an adverse environmental impact.

Impact Type 1.

The first and most obvious way is that pollutants are carried by storm water to the waterbodies, thus degrading the water quality.

Impact Type 2.

The second way is that there will be an increase in volume and velocity of storm water runoff to the extent that it will alter the natural flow of a stream causing harm to aquatic ecosystems and causing considerable flooding damage to property. More specifically, under the high velocity and volume of the storm water runoff, aquatic life in the stream is basically washed away and the stream bed is scoured introducing suspended sediment to the water column (in-stream degradation/aggradation, as distinct from sediment transported **to** the stream. The latter is "Impact Type 1").

The cause of "Impact Type 2" is an increase in impervious area in the watershed from excessive development. Increase in impervious area decreases the "time-of-travel" (the time it takes for a drop of rainfall that hits the ground to reach a stream) creating a peak flow (a flow much larger than the natural stream flow) that may overwhelm the stream. The main objective is then to alter the flow pattern so as to reduce the peak flow to ensure that the aquatic life at the lower end of the food chain is not washed away by the currents and the necessary water clarity is maintained. Preferably, we would seek to "mimic predevelopment hydrology". The

idea is to restore and maintain the predevelopment (natural) equilibrium under which the aquatic ecosystem strives.

The actions for the attainment of predevelopment hydrology require the adoption of design, construction and operational practices to control a predetermined (normally the augmented) quantity of storm water flow from the discharges. For example, 2 inches volume of storm water from a given rain event may be determined to achieve that quantity of storm water to be retained. Engineered solutions (LIDs – such as green roof, permeable pavement, infiltration systems, tree canopy etc …) are utilized to achieve site requirements (note: the type of LIDs considered under Impact Type 2 are those systems that may have minor benefit in retaining pollutants or treating storm water). The aim is to establish, through implementation of a number of (and combination of) controls, that will result in a functional equivalent to the natural flow regime.

Let us examine which waterbodies in the District of Columbia will be harmed as a result of large (increased) volume and velocity of storm water runoff from the DC MS4 areas.

DC MS4 Area Watersheds Draining to the Three Major Waterbodies:

Assertion #1:

The total volume and velocity of storm water runoff draining from the Anacostia River watershed of DC MS4 area directly to the Anacostia River through outfalls located on the Anacostia River do not introduce significant volume and velocity increase to harm the aquatic ecosystem of the Anacostia River.

Assertion #2

The total volume and velocity of storm water runoff draining from the Rock Creek watershed of DC MS4 area directly to the Rock Creek through outfalls located on Rock Creek do not introduce significant volume and velocity increase to harm the aquatic ecosystem of Rock Creek.

Assertion #3

The total volume and velocity of storm water runoff draining from the Potomac River watershed of DC MS4 area directly to the Potomac River through outfalls located on the Potomac River do not introduce significant volume and velocity increase to harm the aquatic ecosystem of the Potomac River.

These assertions are made on the basis of the fact that DC's contribution to the total area (developed or undeveloped) as compared to the total area in the entire watershed is very small. Consequently, the increase of flow due storm water runoff from DC's MS4 area in the Anacostia, Potomac and Rock Creek watersheds is much smaller than the total flow in the rivers, that may be already augmented by the flow from upstream sources.

In addition, the manner in which this extra volume due to storm water runoff from the DC MS4 area is delivered to the rivers is also relevant. Table 3.2-1 of the District of Columbia Upgraded Storm Water Management Plan, October 19, 2002, lists the major outfall distribution within DC's subwatersheds in the

categories of combined sewer overflow, emergency sewer overflow, storm water discharge and "other". The number of outfalls directly delivering storm water to the Anacostia River, the Potomac River and Rock Creek is 63, 21 and 42, respectively. The fact that the storm water is introduced to these waterbodies at numerous locations is further evidence that the volume and rate of storm water from the DC MS4 area does not create an adverse impact described under "Impact Type 2" above (scouring). In fact, several outfalls in the Anacostia River display aggradation, the result of an adverse impact described under "Impact Type 1" and NOT an impact described under "Impact Type 2".

The conclusion is that, increased flow conditions due to the DC MS4 area draining directly to the Anacostia River, Potomac River and Rock Creek, do not contribute to the degradation described under "Impact Type 2" in these waterbodies. Therefore, specific storm water controls, volume reduction/retention, LIDs such as green roof, permeable pavement, infiltration systems and tree canopy etc … in the MS4 watersheds draining directly to the Anacostia River, Potomac River and Rock Creek are not necessary for water quality purposes and <u>should not be a requirement or performance measure for compliance to the District of Columbia MS4 Permit.</u>

<u>MS4 Area Watersheds Draining to Second Order Streams:</u>

Can we mimic predevelopment hydrology?

As shown in Figure 1, the predevelopment condition in DC is characterized by an intensive network of small streams (Fact 1). Such high concentration of streams in a small area means that the time-of-travel (the time it takes for a drop of rainfall that hits the ground to reach a stream) is very short. In areas where the storm drains follow the predevelopment streambed (Fact 2 and Fact 3), one can assert that the pre and post development hydrology is similar. However, in some areas where the storm drains extend beyond (or falls short of) the predevelopment watershed boundaries, the predevelopment hydrology cannot be replicated without major infrastructure work (literally digging up neighborhoods). The question then becomes, should we seek to mimic the pre development hydrology? The answer to this question should be driven by observed aquatic life denudation and/or streambed scour of the stream in question. In general, in watersheds where development has occurred in distant past (Fact #5), streams establish a "new equilibrium". This means that the flora and fauna and aquatic life has taken hold or has adapted to the existing environment. In this case it may be counterproductive (or even detrimental) to try and mimic predevelopment hydrology. A case-by-case determination has to be made. In any event, the predevelopment conditions for the DC watersheds draining to second order streams will be different than a meadow.

A detailed storm water assessment report entitled "Evaluation of Storm Sewer System: Palisades Neighborhood, September 2008, EPMC-3A" was conducted by DC WASA on a small riparian neighborhood in the Potomac River watershed. The study area is in the DC MS4 area. The study was prompted by a chronic flooding problem in the area. In addition to the sewer and pertinent watershed assessments, a computer model was used to carry out hydrologic and hydraulic analysis for various low impact development and land use scenarios.

Some of the results of the modeling with regard to storm water runoff reduction as a result 1) impervious area reduction in general, and 2) Implementation of LID within the watershed in particular are of interest. Below are the results for various scenarios for a 15-year, 6-hour design storm.

Impervious Area Reduction

Impervious Area Reduction	Total Runoff Volume Reduction (percent)	
25%	8%	
50%	16%	
100%	33%	

LID and Green Roof Scenarios

Impervious Area Reduction	Runoff Volume Reduction (percent)	
Conservative LID(a)	1.2%	
Aggressive LID(b)	2.0%	
5% Green Roof(c)	0.4%	

(a) – assumes 50% impervious value for any pervious pavement surfaces
(b) – assumes that pervious pavements are 100% pervious and also capable of storing an additional 2 inches of rainfall
(c) – assumes 5% of houses in the entire study area would implement green roof. It is noted that participation rate in green roof is expected to be low "because most if not all, of the homes in the study area have steep-pitched roofs that aren't conducive to adoption of green roof technology without extensive retrofitting."

It can be seen that, for this particular subwatershed, LID achieves almost no storm water reduction (only 2%) to be of any consequence to reducing adverse impacts described under "Impact Type 2". Even if we assume that the LID can function as a system that will achieve mitigation of pollutants carried by storm water described under "Impact Type 1", the reduction will be insignificant!

Similar studies can be made for other subwatersheds. The model outlined in the WASA report can serve as a model for watersheds draining to second order streams.

Here, the conclusion supported by this study is that, impervious area reduction through LIDs such as green roof, permeable pavers etc… are not effective storm water pollution controls. Therefore, specific storm water controls, volume reduction/retention, LIDs such as green roof, permeable pavement, infiltration systems and tree canopy etc … in the MS4 watersheds draining directly to DC's streams are not necessary for water quality purposes and <u>should not be a requirement or performance measure for compliance to the District of Columbia MS4 Permit.</u>