FACT SHEET

National Pollutant Discharge Elimination System (NPDES)
Municipal Separate Storm Sewer System (MS4)
Permit No. DC0000221 (Government of the District of Columbia)

NPDES PERMIT NUMBER: DC0000221 (Reissuance)

PERMITTEE NAME AND MAILING ADDRESS:

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

MS4 ADMINISTRATOR NAME AND MAILING ADDRESS:

Director, District Department of Energy and Environment
1200 First Street, N.E., 6th Floor
Washington, D.C. 20002

FACILITY LOCATION:

District of Columbia's Municipal Separate Storm Sewer System (MS4)

RECEIVING WATERS:

Potomac River, Anacostia River, Rock Creek, and Stream Segments Tributary
To Each Such Water Body

ACTION TO BE TAKEN:

EPA is today finalizing reissuance of the District of Columbia NPDES MS4 Permit. The Final Permit is intended to replace the 2011 Permit, which was modified in 2012 (hereinafter referred to as the 2012 Final Revised Permit), and was administratively continued past the October 7, 2016 expiration date. The reissued Permit takes effect on June 22, 2018.

The reissued permit has been designed around many of the Stormwater Management Program elements established under the last permit as well as the District of Columbia's (hereinafter referred to as the District) *Consolidated TMDL Implementation Plan* (2016) and the *Revised Monitoring Strategy* (2016), both requirements of the 2012 Final Revised Permit. Consistent with the 2012 Final Revised Permit, EPA has incorporated into the Final Permit a number of enforceable limits and adaptive management benchmarks; these will allow the Agency and the public to monitor the District's progress in reducing and managing the effects of urban stormwater runoff on receiving waters in and around the District.

On November 17, 2016 EPA offered a draft permit for public notice and comment. Although the comment period initially was set for 45 days, EPA extended the comment period to a total of 60 days at the request of some commenters. The comment period closed on January 17, 2017. EPA received comments from 138 individuals and organizations. In considering all of those comments and incorporating many of them into final permit language, EPA determined that some changes were substantive enough to justify a second public notice and comment period. Accordingly, EPA offered a revised draft permit for public notice and comment on August 25, 2017. Although the comment period initially was set for 30 days, EPA extended the comment period to a total of 60 days at the request of some commenters. That comment period closed on October 24, 2017. EPA received four (4) sets of comments during this second public notice and comment period. Responses to all comments received from both rounds of public notice and comment are provided in a separate Response to Comments document that is being published concurrently with the reissued Final Permit and this Fact Sheet.

EPA has carefully considered all comments received and has made modifications to the Final Permit in response to many of them. Even where EPA has not made changes directly in response to a particular comment or as specifically suggested, all comments have influenced the overall set of provisions in this permit. EPA has weighed public and private interests and water quality concerns and balanced them with resources available to the District to implement a robust stormwater program. EPA greatly appreciates the time and effort made by all commenters to improve the Final Permit.

Generally, this Fact Sheet addresses only provisions that are new, notably different from the 2012 Final Revised Permit, or that may be confusing without additional context. Provisions that were first introduced in prior District MS4 permits are discussed in the accompanying Fact Sheets for each such issuance.[1] Very minor changes, made for the purpose of providing clarity, consistency, or ease of reading, are not discussed in this Fact Sheet.

FEDERAL AUTHORITIES FOR REQUIREMENTS IN THE FINAL PERMIT:

Though not exhaustive, the following table lists many of the legal authorities for major provisions contained in the Final Permit. EPA also refers readers to the Standard Permit Conditions (Part 6) of the Final Permit for additional regulatory requirements.

Required Program Application Element	Regulatory References
Adequate Legal Authority	40 C.F.R. § 122.26(d)(2)(i)(A)-(F)
Adequate Fiscal Resources	40 C.F.R. § 122.26(d)(1)(vi)
Existing Structural and Source Controls	40 C.F.R. § 122.26(d)(2)(iv)(A)(1)
Implementing measures necessary to achieve TMDL WLAs	40 C.F.R. § 122.44(d)(1)(vii)(B)

[1] *See* Fact Sheets for all draft and final permits since 2004, https://www3.epa.gov/reg3wapd/npdes/dcpermits.htm

Using BMPs to meet water quality objectives, as appropriate	40 C.F.R. § 122.44(k)
Compliance schedules and deadlines	40 C.F.R. § 122.47
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)
Assessment of Controls	40 C.F.R. § 122.26(d)(2)(iv)(D)(v)
Monitoring	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)
Monitoring Reports	40 C.F.R. § 122.44(i)
Annual Reports, including Electronic Annual Reports after December 1, 2020	40 CFR § 122.42(c) 40 CFR § 122.27
Other Reporting	40 C.F.R. § 122.41(l)

THE PERMIT:

Part 1. DISCHARGES AUTHORIZED UNDER THIS PERMIT

1.1 MS4 Permit Area

The Final Permit covers all areas within the jurisdictional boundary of the District of Columbia ("DC" or "the District") served by or contributing to discharges from the Municipal Separate Storm Sewer System (MS4) owned or operated by the Government of the District of Columbia. The Final Permit also covers other MS4 discharges operated by other entities within DC if those discharges do not have coverage under a separate NPDES permit; these are largely federal systems such as those on lands operated by the National Park Service.

In an abundance of caution, EPA has added the clarifier "in the MS4 Permit Area" in several places in the Final Permit where there may otherwise be some confusion. However, this is technically not necessary as this permit only regulates discharges from the MS4.

1.2 Permittee

The 2011 DC MS4 Permit contained a requirement for the District to coordinate among its various agencies and authorities for purposes of stormwater administration. In 2012, EPA modified the 2011 Permit, in part to clarify the role of the Permittee. The 2012 Final Revised Permit simplified the definition of "Permittee" to "the Government of the District of Columbia". However, the detailed list of the departments, offices and DC Water remained in the permit, along with an outline of various duties. In the Fact Sheet for that permit modification, the Agency "provide[d] clarity that the Government of the District of Columbia is the sole permittee." In proposing the 2012 Modification, EPA provided the following rationale for the clarification:

> *The EPA recognizes that the Government of the District of Columbia has the institutional policies, regulations, and agreements to make internal determinations about which District entities shall implement the various provisions of the permit. The EPA realizes that a number of departments, agencies, and authorities of the Government of the District of Columbia will be engaged in carrying out particular responsibilities under the permit. However, the permit does not purport to identify which of these entities are responsible for any particular requirement, as this does not fall within the EPA's purview as the permitting authority. The EPA will continue to work directly with DDOE, the current stormwater administrator.*

Consistent with the rationale for simplifying the definition of "Permittee" in the 2012 Revised Final Permit, EPA removed as no longer necessary Section 2.3 (Stormwater Management Program Administration/Permittee Responsibilities) of the 2012 Final Revised Permit, and greatly simplified the description of Permittee. The Final Permit now reads as follows:

The "Permittee" is the Government of the District of Columbia. The Permittee has designated the District Department of Energy and Environment (DOEE) as the agency responsible for managing the MS4 Stormwater Management Program (SWMP). If the permittee designates a different responsible agency, it must notify EPA in writing within one week.

1.3 Authorized Discharges

This provision is largely unchanged from the 2012 Final Revised Permit, except that "wash waters" have been removed from this section as an authorized discharge because the Final Permit includes a more specific provision for wash waters in Subsection 3.3.2.4.

1.4 Permittee Authorities and Obligations

1.4.1 Permittee Legal Authority

The Final Permit reflects activities undertaken and completed by the Permittee with respect to legal authority expansions during the prior permit term, as evidenced by Section 2.1 of the 2015 Annual Report, which contains a detailed summary of laws and regulations that provide the District with authority to control stormwater pollution within the MS4 drainage area.

In addition, the Permittee has satisfied the permit application requirements to demonstrate adequate legal authority, 40 C.F.R. § 122.26(d)(2)(i).[2]

1.4.3 Permittee Fiscal Resources

The District has complied with the fiscal resource requirements of the federal regulation regarding its application for stormwater discharges by including the following in its renewal application: "[a] description of the financial resources currently available to the municipality to complete Part 2 of the permit application. A description of the municipality's budget for existing storm water programs, including an overview of the municipality's financial resources and budget, including overall indebtedness and assets, and sources of funds for storm water programs." 40 C.F.R. § 122.26(d)(1)(vi) *see also* 40 C.F.R. §122.26(d)(2)(vi).

The Final Permit requires the Permittee to "provide sufficient finances, staff, equipment and support capabilities to implement the provisions of this permit, including, but not limited to, the Stormwater Management Program required herein." EPA understands that the Permittee intends to maintain a dedicated funding source for the program, in addition to the other resources and incentives that support stormwater-related efforts. The Permittee must certify to this requirement in each Annual Report (see Annual Report Template, Question 1).

1.5 Discharge Limits

[2] *See* SWMP; referenced in Application, http://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Final%20SWMP%201-15-16.pdf

EPA explained the framework for discharge limits in the Final Fact Sheet for the 2011 permit. Because the relationship between water quality standards and maximum extent practicable is fundamental to the development of MS4 permits, and therefore just as applicable to the Final Permit as to the 2011 permit, EPA excerpts parts of that discussion here:

> *Today's Final Permit is premised upon EPA's longstanding view that the MS4 NPDES permit program is both an iterative and an adaptive management process for pollutant reduction and for achieving applicable water quality standard and/or total maximum daily load (TMDL) compliance. See generally, "National Pollutant Discharge Elimination System Permit Application Regulations for Stormwater Discharges," 55 F.R. 47990 (Nov. 16, 1990).*
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> *EPA is aware that many permittees, especially those in highly urbanized areas such as the District, likely will be unable to attain all applicable water quality standards within one or more MS4 permit cycles. Rather the attainment of applicable water quality standards as an incremental process is authorized under section 402(p)(3)(B)(iii) of the Clean Water Act, 33 U.S.C. § 1342(p)(3)(B)(iii), which requires an MS4 permit "to reduce the discharge of pollutants to the maximum extent practicable" (MEP) "and such other provisions" deemed appropriate to control pollutants in municipal stormwater discharges. To be clear, the goal of EPA's stormwater program is attainment of applicable water quality standards, but Congress expected that many municipal stormwater dischargers would need several permit cycles to achieve that goal.*
>
> *Specifically, the Agency expects that attainment of applicable water quality standards in waters to which the District's MS4 discharges, requires staged implementation and increasingly more stringent requirements over several permitting cycles. During each cycle, EPA will continue to review deliverables from the District to ensure that its activities constitute sufficient progress toward standards attainment. With each permit reissuance EPA will continue to increase stringency until such time as standards are met in all receiving waters. Therefore today's Final Permit is clear that attainment of applicable water quality standards and consistency with the assumptions and requirements of any applicable WLA are requirements of the Permit, but, given the iterative nature of this requirement under CWA Section 402(p)(3)(B)(iii), the Final Permit is also clear that "compliance with all performance standards and provisions contained in the Final Permit shall constitute adequate progress toward compliance with DCWQS and WLAs for this permit term".*
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> *EPA believes that permitting authorities have the obligation to write permits with clear and enforceable provisions and thus the determination of what is the "maximum extent practicable" under a permit is one that must be made by the permitting authority and translated into provisions that are understandable and measurable. In this Final Permit EPA has carefully evaluated the maturity of the District stormwater program and the water quality status of the receiving waters, including TMDL wasteload allocations. In determining whether certain measures, actions and performance standards are practicable, EPA has also looked at other programs and measures around the country for*

feasibility of implementation. Therefore, today's Final Permit does not qualify any provision with MEP thus leaving this determination to the discretion of the District. Instead each provision has already been determined to be the maximum extent practicable for this permit term for this discharger.[3]

The explanation provided in 2011 continues to apply to today's Final Permit.

EPA emphasizes that *all* measures in the Final Permit are pivotal in making progress toward attaining applicable wasteload allocations (WLAs) and other water quality objectives. Stormwater controls required by the Final Permit include a balance of prevention and protection measures, which are intended to minimize the likelihood of additional impairments occurring, and reduction and remediation measures, which are intended to address current impairments. The table below identifies which provisions of the Final Permit are intended to address each applicable pollutant of concern.

TMDL Pollutants and Applicable Planning and Implementation Requirements

Pollutants	TMDLs	Permit Requirements	
		Planning (Part 2)	Implementation (Part 3)
Nutrients			
Nitrogen, Phosphorus	• Anacostia Nutrients and BOD (2008) • Chesapeake Bay Phosphorus, Nitrogen and Sediment (2010)	2.2 2.4 2.5.1	3.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 3.4, 3.5, 3.6, 3.7.5, 3.7.7, 3.8, 3.9, 3.10
Conventional Pollutants			
Biochemical Oxygen Demand (BOD)	• Kingman Lake TSS, Oil and Grease, BOD (2003) • Anacostia Nutrients and BOD (2008)	2.2, 2.6	3.2, 3.3.2, 3.3.8, 3.4, 3.6, 3.7.6, 3.7.7, 3.8, 3.9, 3.10
Total Suspended Solids (TSS), Sediment	• Kingman Lake TSS, Oil and Grease, BOD (2003) • Watts Branch TSS (2003) • Anacostia TSS (2007) • Chesapeake Bay Phosphorus, Nitrogen and Sediment (2010)	2.2, 2.4, 2.5.1, 2.6	3.2, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 3.3.7, 3.4, 3.5, 3.6, 3.7.7, 3.8, 3.9, 3.10
Bacteria	• Anacostia & Tributaries Bacteria (2003 & 2014) • Kingman Lake Bacteria (2003 & 2014) • Potomac & Tributaries Bacteria (2004 & 2014) • Tidal Basin and Ship Channel Bacteria (2004 & 2014)	2.2, 2.2.2.1	3.2, 3.3.1, 3.4, 3.6, 3.8, 3.9, 3.10

[3] *See* DC MS4 Final Fact Sheet for 2011 permit issuance, https://www3.epa.gov/reg3wapd/pdf/pdf_npdes/stormwater/DCMS4/FinalPermit2011/DCMS4FINALDCfactsheet093011.pdf

	• Chesapeake and Ohio Canal Bacteria (2004 & 2014) • Rock Creek Bacteria (2004 & 2014) • Oxon Run Organics, Metals, and Bacteria (2004)		
Metals			
Arsenic, Copper, Lead, Mercury, Zinc	• Anacostia & Tributaries Metals and Organics (2003) • Kingman Lake Organics and Metals (2003) • Potomac Tributaries Organics and Metals (2004) • Oxon Run Organics, Metals, and Bacteria (2004) • Rock Creek Organics and Tributaries Metals (2004, revised 2016)	2.2, 2.5.1	3.2, 3.3.2, 3.3.3, 3.3.4, 3.3.6, 3.4, 3.6, 3.7.6, 3.8, 3.9, 3.10
Organics			
Polyaromatic Hydrocarbons (PAHs), Chlordane, Heptachlor Epoxide, Dieldrin, DDT, DDE, DDD, PCBs	• Anacostia & Tributaries Metals and Organics (2003) • Kingman Lake Organics and Metals (2003) • Potomac and Anacostia Tidal PCB (2007) • Potomac Tributaries Organics and Metals (2004) • Oxon Run Organics, Metals, and Bacteria (2004) • Rock Creek Organics and Tributaries Metals (2004)	2.2, 2.2.2.2	3.2, 3.3.2, 3.3.3, 3.4, 3.6, 3.7.4, 3.7.6, 3.8, 3.9, 3.10
Other Pollutants			
Oil & Grease	• Anacostia Oil & Grease (2003) • Kingman Lake TSS, Oil and Grease, BOD (2003)	2.2, 2.5.1	3.2, 3.3.2, 3.3.4, 3.4, 3.6, 3.7.6 3.8, 3.9, 3.10
Trash	• Anacostia Trash (2010)	2.2, 2.5.1	3.2, 3.3.2, 3.3.4, 3.3.6, 3.4, 3.7.1, 3.7.2, 3.7.3, 3.8, 3.9, 3.10

As explained in the Definitions section (Part 8) of the Final Permit, "milestones" are quantifiable interim objectives towards attainment of a WLA proposed by the permittee. When EPA incorporates a milestone into the permit, it becomes an enforceable permit limit. EPA has made some minor edits to the Final Permit to ensure that this distinction is clear and the terms are used appropriately in different contexts.

1.5.3.1 Limits

The Acres Managed Limit

In the 2012 Final Revised Permit, EPA established the requirement for on-site retention because it is an effective means of preventing and minimizing discharges of stormwater, and its multiple entrained pollutants, to surface waters.[4] Therefore, a metric for the amount of stormwater captured in on-site stormwater retention controls can be used as an indicator of the amount of pollutants that have been kept out of receiving streams.

An important discharge limit included in the Final Permit, which is new for the District stormwater management program, is expressed as "Acres Managed". The Permittee developed the Acres Managed metric as a way to track implementation for a subset of stormwater controls, primarily those that involve retention of stormwater. In concert with model development, the Permittee has also applied this metric to a small set of additional control measures, such as green roofs and tree plantings, that also have the functional capacity to retain stormwater. As defined in the Final Permit, one Acre Managed is one acre of land treated by stormwater control measures to the applicable standard established in the Permittee's stormwater regulations or consistent with the relevant voluntary program.

Example 1: A development project required to meet the 1.2-inch retention standard for Development and Redevelopment $\geq$ 5,000 square feet (Subsection 3.2.2) implements 1.2 inches of retention across 5 acres, through any combination of on-site and/or off-site retention controls = five (5) Acres Managed.

Example 2: A Public Right-of-Way Project subject to the District's "MEP" process (Subsection 3.2.4) implements 1.8 inches of on-site retention across 2 acres = two (2) Acres Managed.

Example 3: A Public Right-of-Way Project subject to the District's "MEP" process (Subsection 3.2.4) implements 0.9 inches of on-site retention across 2 acres = two (2) Acres Managed.

Example 4: A redevelopment project required to meet the 0.8-inch on-site retention standard for Substantial Improvement Projects (Subsection 3.2.5) across one half-acre, through any combination of on-site and off-site retention controls = one half (0.5) Acre Managed.

Example 5: A homeowner voluntarily implementing porous pavement through the District's RiverSmart Homes Program (Subsection 3.2.10) achieves 0.6 inches of on-site retention across one quarter acre = one quarter (1/4) Acre Managed.

EPA acknowledges that this accounting system is imperfect, and continues to evaluate the most effective ways to measure and track all of these activities and the commensurate pollutant reductions. EPA expects to continue discussions with the Permittee during this permit term to ensure that there will be a solid foundation for tracking and modeling pollutant

[4] *See* the 2010 Draft Fact Sheet for a more in-depth discussion, https://www3.epa.gov/reg3wapd/pdf/pdf_npdes/stormwater/DCMS4/DraftPermit2010/DCMS4DraftFactSheet_04-19-10.pdf

reductions well into the future. The Acres Managed framework described above represents the current state of development of a metric to account for implementation of stormwater retention measures.

It is fairly straightforward to apply the Acres Managed metric to stormwater controls that retain stormwater directly, as that was the initial context for this metric. However, the Permittee's stormwater program includes several other activities that are important to achieving necessary pollutant reductions. It is possible, but more complicated, to apply the Acres Managed metric to implementation measures such as street sweeping and catch basin cleaning. Equally likely, Acres Managed may not be the best metric for these types of stormwater controls, and alternate numeric metrics should be established.

EPA has included a new provision in the permit (Subsection 2.5.2) that will allow the Permittee to propose to EPA methods for estimating pollutant reductions where there currently are no such methods, so that those pollutant reductions may be counted toward meeting permit requirements. The methods may include translation to Acres Managed, if appropriate, or may express the reduction in pounds, colonies per liter, or other applicable unit. The following table includes most of the major stormwater control measures in the Final Permit and articulates the current metrics and permit limits. In some cases, metrics and/or numeric limits linked directly (e.g., pounds or tons) or indirectly (e.g., Acres Managed) to pollutant reductions have not been formally established. EPA encourages the development of numeric metrics for as many measures as possible. Currently, there are some pollutants or Stormwater Control Measures (SCMs) for which no metric has been developed; those are intentionally left blank in the table below.

Metrics and Permit Limits			
Stormwater Control Measure	**Metric(s)**	**Limit in Permit**	**Pollutants**
On-Site Retention			
New and Redevelopment 5,000 square feet and larger	Acres Managed	Part of 1,038 Acres Managed permit total	Multiple pollutants
PROW activities subject to MEP process	Acres Managed	62 Acres Managed, part of 1,038 Acres Managed permit total	Multiple pollutants
Incentive programs such as RiverSmart	Acres Managed	Part of 1,038 Acres Managed permit total	Multiple pollutants
Green Roofs	Square Feet May also be translated to Acres Managed	350,000 square feet (Shall also be converted and included in the 1,038 Acres Managed permit total)	Multiple pollutants
Tree Plantings	Net # Trees Planted May also be translated to Acres Managed	33,525 net total trees for the 5-year permit term, with benchmark of 6,705 annual average.	Multiple pollutants

		(Shall also be converted and included in the 1,038 Acres Managed permit total)	
Other than On-Site Retention			
Stream, Buffer and Floodplain Restoration		Optional	Nitrogen Phosphorus Sediment
Industrial SWPP at municipal facilities		All relevant operations must implement SWPPPs; all relevant operations must have appropriate compliance and enforcement mechanisms.	Multiple pollutants
Pesticide, Herbicide and Fertilizer		Maintain the program.	Pesticides Herbicides Nitrogen Phosphorus
Catch Basin clean-outs		Each catch basin cleaned at least once annually, with a margin of error	Multiple pollutants
Storm Drain Outfall Repair		50 outfalls permit term total	Sediment Nitrogen Phosphorus
Street Sweeping	Road Miles Swept	8,000 road miles swept annually	Sediment Nitrogen Phosphorus
Construction SWPP		All relevant construction activities must implement SWPPPs; all construction activities must have appropriate compliance and enforcement mechanisms.	Sediment Nitrogen Phosphorus
Snow and Ice Management		Implement the program.	Multiple Pollutants
Critical Source controls		All critical sources must implement appropriate measures; all sources must have appropriate compliance and enforcement mechanisms	Multiple Pollutants
Illicit Discharge Elimination		All identified illicit discharges must be eliminated/remedied	Multiple Pollutants
Illegal Disposal Elimination		All identified illegal disposals must be remedied	Multiple Pollutants
Trash Removal (clean-ups, skimmers, trash racks)	Pounds of Trash Captured/Removed/Prevented	108,347 pounds annually Anacostia River Watershed	Trash

Plastic Shopping bag fee	Estimate of bags prevented		
Polystyrene Foam Food Containers Ban	Estimate of containers prevented		
Coal Tar Ban		Maintain the restrictions.	PAHs
Lawn Fertilizer Restrictions		Maintain the restrictions.	Nitrogen Phosphorus
Hazardous Waste Collection		Maintain the program.	Metals, PAHs & others
Leaf and Yard Waste Collection		Maintain the program.	Nitrogen Phosphorus

The 1,038 Acres Managed Permit Limit

The Permittee's *Consolidated TMDL Implementation Plan* (TMDL IP) proposed a 5-year milestone of 1,038 Acres Managed for each of the next few permit terms. Though EPA is unconvinced that this is an acceptably aggressive milestone in future permit terms, it is included as a permit limit in the Final Permit for this permit term.

The 2012 Final Revised Permit required the Permittee to implement 18,000,000 square feet (413 acres) of on-site and off-site retention. As reported in the District's 2016 Annual Report, the District implemented 24,638,039 square feet (566 acres) of retention control measures during the 2011 permit term. However, at the time the District submitted the 2016 Annual Report, a portion of those projects were still under construction. This included projects implemented by developers per the District Stormwater Regulations, projects in public rights-of-way (PROWs), and those implemented via incentive programs such as RiverSmart. Though 566 acres of retention had not been fully achieved at the time the report was submitted (January 2017), EPA recognized that the District's program was new, i.e., the Stormwater Regulations had only been in effect since 2013, and considered this good progress.

The amount of 1,038 Acres Managed represents a significant increase (207%) from the requirements of the 2012 Final Revised Permit (see table below). The table includes green roofs and trees even though they were tallied separately in the 2012 Final Revised Permit. Because the Final Permit provides a framework to convert these control measures to Acres Managed and include them in the 1,038 Acres Managed totals, EPA is providing the equivalencies for the 2012 Final Revised Permit as well.

2012 Final Revised Permit		
	Limits, as Expressed in Permit for the Entire Permit Term	Converted to Acres Managed
Implementation of on-site and off-site retention	18,000,000 square feet	413
Green roofs	350,000 square feet	8
Trees	20,750 trees	80
	Total	501

This could also be looked at from the other direction. The Final Permit requires the Permittee to implement 350,000 square feet of green roofs, which is equivalent to 8 Acres Managed. Per the District's comprehensive baseline analysis in support of development of the *Consolidated Implementation Plan*, the retention capacity of 1 tree is equivalent to 0.0038 acres.[5] Therefore, implementation of 33,525 tree plantings during the upcoming permit term will provide 128 Acres Managed. Subtracting the 136 acres achieved by green roofs and trees from 1,038 Acres Managed, leaves the Permittee with 910 Acres Managed to be achieved through the remaining stormwater retention requirements of Sections 3.1 and 3.2 of the Final Permit. This is 220% of the 413 acres required in the 2012 Final Revised Permit.

EPA evaluates incremental increases in effort and resources from the maximum extent practicable perspective. Regardless of how the math is undertaken, the Permittee's obligation for implementation or retention-based stormwater controls has more than doubled in the Final Permit, which EPA has determined constitutes MEP for this permit term.

One commenter suggested that 1,038 acres is not high enough, and represents a reduction from the requirements in the 2012 Final Revised Permit. As described above, this is an actual - and in fact notable - increase in the amount of on-site and off-site retention for this permit term, even when factoring the Acres Managed equivalencies of trees and green roofs into the total. Another commenter suggested that 1,038 is not achievable in the District and thus is too high. EPA notes that the Permittee proposed this number in the TMDL IP, based on its own analysis, and believes it to be challenging, but achievable.

In its TMDL IP, the Permittee originally proposed specific milestones for each of the three major basins that totaled 1,038 Acres Managed. However, the Permittee subsequently expressed concern about achieving those milestones given the uncertainty about where development may occur. Therefore, EPA has provided some flexibility in the milestones, which are expressed as limits in the Final Permit, to reflect this uncertainty. Specifically, EPA has included limits that allow the Permittee to achieve half of the 1,038 total (519 Acres Managed) in

[5] *See*, District *Final Comprehensive Baseline Analysis*, Appendix F, 2015, and references therein, https://dcstormwaterplan.org/wp-content/uploads/Final_Comp_Baseline_Analysis_2015-with-Appendices.pdf Excerpted from page, 32: "The annual volume reduction from planted trees was estimated by applying a deciduous tree specific interception capacity of 0.043 inches per rain event (Breuer, 2003), where precipitation was considered a new rain event if there was at least six hours with no recorded precipitation prior to any detected precipitation. Intercepted precipitation was converted to a volume by assuming a canopy area of 490 square feet, which is average for medium-sized trees (MNPCA, 2014). Using the model precipitation period, an average cumulative depth of 4.27 inches per year, or 1,586 gallons/year, is intercepted per tree."

Table A3-2: Equivalent Area of BMP Implementation From Other Existing Drivers and Programs

BMP Type	Projected Annual Rate of Implementation	Retention Volume Provided (acre-feet)	EBRU efficiency	Average Precipitation (inches)	Average Runoff Coefficient (Rv)	Equivalent Drainage Area (acres/yr)
New Trees	4,150 per year	0.005	0.835	40	0.5203	15.9

"

any major basin in the MS4 Permit Area. The remaining 519 Acres Managed must be achieved in specific major basins, as shown in the table below. This allocation among major basins is based on additional analysis that the Permittee provided to EPA following the first public notice and comment period. That analysis, *TMDL IP Milestone Analyses FINAL*, is included in the Administrative Record for the Final Permit and identifies and tallies potential/expected development projects and opportunities throughout the MS4 Permit Area in each of the three major basins. Thus, Table 1 in the Final Permit reads as follows:

Major Basin	**5-Year Limits (Acres Managed)**
Anacostia River	307
Potomac River	116
Rock Creek	96
Anywhere in the MS4 Permit Area	519
Total	1,038

The Permittee's 2016 Annual Report documents that the District Department of Transportation (DDOT) has successfully implemented stormwater projects for 31 Acres Managed with another 31 under construction in PROWs. EPA considers this a demonstration of the feasibility of implementing 62 Acres Managed in PROW projects in a permit term, and is establishing the Acres Managed requirement for PROWs as 62 in the Final Permit.

The 2012 Final Revised Permit required the Permittee to achieve a net tree increase of 4,150 trees annually in the MS4 Area. EPA reviewed the Permittee's Urban Tree Canopy Plan and the Permittee's 2012 – 2016 Annual Reports to assess MEP for tree planting. The District's Urban Tree Canopy Plan calls for 10,800 trees per year District-wide. The following table details total tree plantings in the District for the past 5 years.

Net Tree Plantings in DC During 2011 Permit Term		
Year	MS4 Area	District-Wide Total
2012	8,259	11,728
2013	4,319	9,066
2014	6,413	11,013
2015	8,451	14,434
2016	6,085	9,398
5-Year Total	33,527	55,639
5-Year Average	6,705	11,128
Annual net tree planting numbers are from the Permittee's MS4 Annual Reports for the years noted.		

The Final Permit requires the Permittee to achieve a minimum net increase of 33,525 trees in the MS4 Permit Area by the end of the five-year permit term, and sets a net annual average benchmark of 6,705 tree plantings in the MS4 Permit Area. Over the past five years, the Permittee averaged 6,705 net trees per year in the MS4 Permit Area, and EPA has no information

to suggest that the past five years have been an anomaly or that the current rate of tree planting cannot be sustained. EPA notes that MEP is not automatically determined to be the maximum number *ever* achieved; to the contrary, an MEP determination must assess what is practicable. Further, the annual benchmark of 6,705 represents a notable increase over the 4,150 annual net tree planting required in the 2012 Final Revised Permit, and one that the Permittee can be reasonably expected to achieve based on past performance.

EPA is setting these numbers as annual averages rather than annual minimums. This will provide the Permittee some flexibility in years in which funding, contracts, weather, or other variables delay tree plantings, but will still ensure that the overall objective is achieved. The five-year averaging period will begin with the first year this permit is in effect. Should the permit be extended beyond five years, net tree plantings should continue to accrue at this rate and totals should increase commensurately.

1.5.3.2 Discharge Limits for Trash in the Anacostia Watershed

Following publication of the draft permit for the first public notice and comment period, EPA discovered an error in how it had incorporated the applicable wasteload allocation in the Anacostia Watershed Trash TMDL. In that draft (and in the 2012 Final Revised Permit), EPA required the Permittee to remove 103,188 pounds of trash from the Anacostia river basin within the MS4 Permit Area, which represented a removal of 100% of the baseline trash load. However, the applicable wasteload allocation is actually 108,347 pounds of trash – 100% of the baseline load plus five percent margin of safety. See EPA Decision Rationale approving the Anacostia Trash TMDL.

Accordingly, the Final Permit has been modified to require the capture, removal or prevention of 108,347 pounds of trash annually in the Anacostia River within the MS4 permit area. This does not modify the wasteload allocation in the TMDL; it simply represents a corrected permit requirement. This corrected number is both consistent with the applicable wasteload allocation and practicable because the Permittee's Annual Reports demonstrate that the Permittee is already achieving this limit.

1.6 Compliance Framework

The compliance framework for this Final Permit is the same as in the 2012 Revised Final Permit, i.e., compliance with all provisions of this permit will constitute reasonable and adequate progress toward compliance with DC water quality standards and relevant wasteload allocations for this permit term. This is consistent with CWA section 402(p)(3) and the goals of the CWA at section 101, as well as EPA's Phase I and Phase II stormwater regulations and preambles, in that full compliance with water quality standards may not be met in a single permit term with respect to discharges from municipal separate storm sewer systems, but that progress toward that end instead will be iterative over two or more permit cycles.

Part 2. STORMWATER MANAGEMENT PROGRAM PLANNING

The Final Permit has been organized such that all planning requirements, along with schedules for completion, are included in Part 2. Planning requirements include tasks to undertake assessments, develop new strategies, and update existing plans and tools.

2.1 Elements of the Stormwater Management Program

The Stormwater Management Program (SWMP) is a multi-faceted program that includes all activities to meet the requirements of this permit. The purpose of the program is to prevent and mitigate the effects of stormwater discharges via the MS4 on the physical, chemical and biological integrity of receiving waters. The SWMP Plan is the collection of all strategies, plans and schedules that describe and document the SWMP.

EPA has determined that the SWMP required by the permit will reduce the discharge of pollutants to the maximum extent practicable (MEP) for this permit term, and includes other provisions necessary for the control of pollutants in stormwater discharges. The MEP determination is based on numerous things, including:

- The Permittee's performance under prior permit terms as demonstrated by the Permittee's annual reports and compliance inspections/audits/assessments;
- Plans and strategies developed by the Permittee, including the permit application and the SWMP Plan, the *Consolidated TMDL Implementation Plan*, and a number of other plans as cited in relevant sections of this Fact Sheet;
- Numerous conversations with the Permittee about logistical and financial feasibilities in a variety of District operations;
- Information provided by commenters during the two public notice periods for this permit; and
- Advances in technologies and best practices in the field of stormwater management.

EPA disagrees with the notion, espoused by one commenter, that MEP cannot be established without undertaking a full economic analysis of Permittee resources. MEP is not just about financial resources. In deriving permit requirements, EPA considered the following factors: staff experience and knowledge, municipal equipment and policies, community resources and priorities, knowledge of how private entities may respond to incentives and regulations, and numerous other factors. EPA also considered what the Permittee has done and proposes to do, as well as the current state of best practices and technological advancements in stormwater management.[6] The Final Permit reflects a balance of many considerations.

2.2 Total Maximum Daily Load (TMDL) Planning

[6] "EPA envisions application of the MEP standard as an iterative process. MEP should continually adapt to current conditions and BMP effectiveness…" 64 FR 68271, 68754 (Dec. 8, 1999).

One of the key requirements of the 2012 Final Revised Permit was development of the *Consolidated TMDL Implementation Plan*, with the expectation that the measures and schedules laid out in that plan would be incorporated into future permits. The TMDL IP has always been intended to be a long-term road map for implementing measures to address water quality impairments attributable wholly or partially to MS4 discharges, including impairments from legacy pollutants that were historically discharged through the MS4. This Final Permit is the first permit to begin implementing the TMDL IP.

The TMDL IP builds on a foundation of logical model assumptions, reasonable baselines and a solid gap analysis. EPA encourages interested parties to review the August 2016 TMDL IP, which is available on the District's website.[7]

EPA has not yet approved the Permittee's TMDL IP. The Agency's primary concerns, which have been expressed in comments to the Permittee but which are still not fully resolved, are the lack of breadth in implementation actions, and a timeline that would not result in attainment of all 204 WLAs until 2154. Accordingly, EPA has incorporated many of the elements of the TMDL IP into the Final Permit, but has also included provisions intended to accelerate certain timelines.

2.2.2.1 Bacteria Milestones and Benchmarks for the Next Permit Term

Some of the lengthiest WLA attainment timelines in the Permittee's TMDL IP are for *E. coli*. This is largely due to the fact that sources are poorly understood, and thus the TMDL IP relies mostly on general stormwater measures to achieve the necessary reductions, rather than measures that specifically target sources of *E. coli*.

Some reduction measures for *E. coli* are included in the Final Permit, e.g., illicit discharge detection and elimination (Subsection 3.6.1), SSO response (Subsection 3.3.1), and pet waste education and repositories (Subsection 3.10). Rather than impose additional measures that may or may not be appropriately targeted to significant sources, EPA is requiring the Permittee to gather additional data (i.e., the bacteria source tracking study in Subsection 4.4.2) in order to make informed decisions about allocation of resources to strategies that most effectively reduce *E. coli* in stormwater discharges (i.e., the benchmarks and milestones). If and when the *E. coli* TMDLs are revised and approved pursuant to the Clean Water Act, this information could also be used for that purpose.

Because *E. coli* impairments are so widespread in District receiving waters, EPA is requiring the Permittee to immediately implement reduction measures for any high priority bacteria sources that may be identified in the study. EPA expects that the Permittee will include new milestones and benchmarks in its updated *Consolidated TMDL Implementation Plan*, which will be subject to public notice and comment and EPA approval per the schedule in Subsection 2.2.5.5 of the Final Permit. At that time, EPA and the public will have an opportunity to comment on milestones and benchmarks proposed by the Permittee. However, given the

[7] *See Consolidated Total Maximum Daily Load (TMDL) Implementation Plan Report*, August 2016, http://dcstormwaterplan.org/wp-content/uploads/0_TMDL_IP_080316_Draft_updated.pdf

numerous water quality impairments attributable to pathogens in District water bodies, EPA sees no reason to delay action on remedial measures.

2.2.2.2 Legacy Pollutant Milestones and Benchmarks for the Next Permit Term

The TMDL IP timelines for attainment of the WLAs for chlordane, heptachlor epoxide, dieldrin, DDT, DDE, DDD and PCBs, are also quite protracted. Based on MS4 discharge data as well as in-stream data, the TMDL IP concludes that though these pollutants historically did reach surface waters via the MS4, ongoing sources of these legacy pollutants have been largely eliminated. However, their presence in receiving water sediments continues to present water quality concerns. Accordingly, the Final Permit requires that the Permittee identify current sources of these pollutants. The Permittee has options to pursue mitigation of these pollutants through mechanisms other than the MS4 program, therefore EPA is not including a requirement to develop a mitigation plan for these pollutants. Given the likelihood that many of these pollutants reside in stream and river sediments and are not presently occurring in most MS4 discharges, the Permittee's stormwater program may not be the most appropriate venue for implementing mitigation measures. However, the Final Permit does require the Permittee to develop milestones and benchmarks for these pollutants and incorporate them directly into the updated *Consolidated TMDL Implementation Plan* to be submitted to EPA per the schedule in Subsection 2.2.5.5 of the Final Permit.

2.2.2.3 Targeted Watersheds

The TMDL IP proposed that certain District watersheds had better pollutant reduction opportunities than others and committed to developing a strategy to identify and target actions to specific watersheds. Accordingly, EPA has incorporated this requirement into the Final Permit. The Permittee shall develop a list of targeted watersheds and associated implementation approaches to be implemented in subsequent permit terms. These approaches shall be incorporated into the updated *Consolidated TMDL Implementation Plan* to be submitted to EPA per the schedule in Subsection 2.2.5.5 of the Final Permit.

2.2.3 Stormwater Fee Options Evaluation

In the TMDL IP, the Permittee included the action to conduct a stormwater fee option evaluation and propose an increase if the evaluation supported an increase. Accordingly, the Final Permit requires the Permittee to evaluate the adequacy of the Stormwater Fee, including how the fee can complement and leverage other funding sources in order to meet the water quality goals of the permit. This is aligned closely with the provision to assess the District's Stormwater Management Regulations (Subsection 2.2.4) since changes in the regulations *might* be complemented or supported by a revision to the fees. EPA makes no assumptions about whether possible revisions could be increases, decreases, redistributions or any other combination of options. The Final Permit does not require the Permittee to increase or otherwise modify stormwater fees, as whether and how to set stormwater fees is ultimately a local government decision, made with notable public input.

2.2.4 Analysis of Updating Stormwater Management Regulations

The Permittee's TMDL IP analyses demonstrate that many WLA attainment timelines could be shortened by increasing the District's on-site retention standard from 1.2" to 2", or by applying a 2" standard in target watersheds. Accordingly, the Final Permit requires the Permittee to undertake an analysis to explore combinations of options, including lowering thresholds, eliminating exemptions for regulated projects, or applying different retention standards in priority watersheds. Based on concerns from commenters, EPA clarifies that the Permittee has the final decision on if, when, and how to make changes to District stormwater regulations based on this analysis.

2.2.5 Updating the *Consolidated TMDL Implementation Plan*

The general requirements for the content of the TMDL IP and provisions for updating due to the establishment or approval of new TMDLs or failure to meet milestones are largely unchanged from the 2012 Final Revised Permit.

The Final Permit requires the Permittee to provide for public notice and comment a fully updated TMDL IP 15 months prior to the expiration date of this permit, and then provide the TMDL IP, along with any changes attributable to public comment, to EPA 9 months prior to expiration of the permit.

2.3 Inspection Strategy for Regulated On-site and Off-site Control Measures

The Permittee must develop an inspection strategy for all control measures, both on-site and off-site, and submit this strategy to EPA along with the 2019 Annual Report. The strategy must set priorities based on risk, and may include third-party inspections, self-reporting and other procedures in order to achieve a balance of accountability and affordability. The strategy must ensure that all necessary legal, policy, or logistical measures are in place to ensure effectiveness. This is a new provision with this Final Permit. EPA received no comments on this provision during either public notice period.

2.4 Public Right-of-Way Optimal Design

Following the flexibility provided in the 2012 Final Revised Permit that provided the Permittee a permit term to determine practicable approaches for on-site retention in Public Rights-of-Way (PROW), the District stormwater regulations currently require that the retention capacity for projects in PROWs be implemented through site-specific analyses, rather than through a straight numeric on-site retention requirement. Per the suggestion of DDOT towards the end of the 2011 permit term about how to most effectively ensure maximum and efficient implementation of on-site retention measures in PROWs, the Final Permit requires that the Permittee develop a set of PROW-optimal designs over the next four years. These standardized designs will optimize costs, performance, community palatability, and other relevant factors. As with the 2012 Final Revised Permit, EPA once again notes that this approach is considered MEP for this permit term because it represents an incremental improvement in stormwater management in PROWs consistent with the current status of DDOT's program. EPA will carefully scrutinize the outcomes from this approach when reissuing the next permit.

2.5 Evaluation of Pollutant Reductions from Other Activities

There are certain pollutant reduction activities for which the Permittee does not yet have methods for estimating pollutant reductions. Developing procedures for making those estimates will aid in tracking progress towards WLA attainment. The Final Permit requires that, during this permit term, the Permittee develop a method for estimating pollutant reductions from catch basin cleaning. The Final Permit also provides the Permittee the option of developing pollutant reduction estimate methodologies for any other activity that prevents or reduces stormwater pollutant discharges, and submitting that method to EPA for approval. This provision received strong support during the public notice and comment period.

Any method proposed by the Permittee may express reductions as Acres Managed equivalences if appropriate, or may express them in specific measures of the pollutant itself.

2.6 Development of Alternatives for Ice and Snow Management

Since the 2012 Final Revised Permit was issued, the District has undertaken an update of its Snow and Ice Removal Plan. This Final Permit requires the Permittee to ensure that water quality-related requirements for preventive and control measures are included in the Plan. Those measures shall also be incorporated into the revised SWMP Plan.

2.7 Infrastructure Resilience Assessments

In 2016 the District released *Climate Ready DC, The District of Columbia's Plan to Adapt to a Changing Climate*. This plan assesses risks and vulnerabilities in DC associated with flooding, sea level rise, and changes in precipitation intensity, and makes a series of recommendations for enhancing community and infrastructure resilience. A number of those identified vulnerabilities and recommendations dovetail with elements of the Permittee's stormwater management program. As such, EPA has made efforts to align the relevant SWMP elements with *Climate Ready DC* recommendations for ease of implementation.

It is not EPA's intention to add additional requirements, but rather to acknowledge that the District is facing notable precipitation intensity and flooding challenges that relate to stormwater management. Many of those challenges may also increase the discharge of pollutants. EPA seeks to ensure that this permit does nothing to hinder, and in fact will dovetail, with those efforts so that mutual water quality and flood management benefits may be realized.

The District's strategy documents that:

- Today's one in 100-year rainfall event could become a one in 25-year event by mid-century, and a one in 15-year event by the 2080s.
- Sea level rise and storm surges will put the District at greater risk for coastal flooding in the future.

The plan concludes that stormwater systems will be strained by more frequent and severe rain events, as well as potential inundation from sea level rise and coastal storms. As a result, the

District will experience more localized flooding and increased stormwater runoff. Other infrastructure will also be significantly stressed by these changes.

The District is already facing challenges associated with these types of events. Section 2.7 of the Final Permit acknowledges many of the stormwater management areas of overlap between water quality and flooding and includes several specific measures designed to ensure that these issues are considered in tandem, including:

- Include flood risk in the assessment of development projects in floodplains and minimize the water quality impacts from these projects (2.7.1);
- Include assessment of the flood storage capacity of floodplains for development projects (2.7.2);
- Continue to work collaboratively with other organizations on flood risk management, and ensure that water quality concerns are adequately represented (2.7.3);
- Provide input during regulatory reviews to stakeholders developing flood management projects, including the promotion of green infrastructure and other controls for both flood management and water quality on a watershed basis (2.7.4); and
- Factor data on future conditions into decisions about standards for and resilience of stormwater infrastructure (2.7.5).

In addition, *Climate Ready DC* makes a number of recommendations that correspond to provisions of the Final Permit. EPA has made efforts in the Final Permit to ensure consistency with those common elements. EPA has not added new requirements to the Final Permit based on the recommendations of the District's strategy, but rather has taken steps to ensure that the Final Permit is not at odds with the strategy and that objectives and time frames align to the extent possible. EPA is very supportive of the District's efforts to enhance community resilience and wants to ensure that the Final Permit acknowledges and supports these efforts, where possible. The following table highlights some of the recommendations from *Climate Ready DC* that have notable overlap with the Final Permit with short notes on alignment.

***Climate Ready DC* Recommendations**		**MS4 Permit Alignment**
TU[8] 3.1	Update design standards for water drainage infrastructure to address the projected increase in intensity of precipitation.	The Final Permit requires that the Permittee conduct an analysis of options for modifying the stormwater regulations, including increasing the on-site retention requirement or applying it to priority watersheds (Subsection 2.2.4). In addition, the Final Permit includes a provision that the Permittee consider future conditions and evaluate the need for revised standards in stormwater and

8 "TU" stands for the Transportation and Utilities sectors.

		floodplain management, and flood control projects (Subsection 2.7.5)
TU 3.2	Increase combined sewer and separate stormwater system capacity with green and grey infrastructure including raingardens, green roofs, cisterns and pervious pavement. Focus first on areas that flood regularly of have known drainage capacity issues.	The foundation for the Final Permit is on-site retention of stormwater or green infrastructure, with specific requirements for development (Section 3.2). There is nothing in the permit to discourage or prevent activities within the MS4 area from being focused in locations with flood or drainage problems.
TU 3.6	Flood proof critical stormwater and combined sewer infrastructure including, but not limited to, pumping stations, inlets and outlets. Implement backflow prevention techniques.	The Final Permit includes the assessment of stormwater infrastructure to determine which assets may need enhanced resilience to ensure ongoing performance (Subsection 2.7.5).
TU 5.3	Update design standards for roads and transit infrastructure to account for projected extreme temperatures and extreme precipitation events.	The Final Permit requires the Permittee to develop optimal stormwater management designs for public rights-of-way by 2020 (Section 2.4), and includes resilience as a factor for consideration in these designs.
BD[9] 8.3	Develop incentives, training, and technical assistance programs for significant water use reductions including rainwater and greywater harvesting and onsite blackwater treatment.	The on-site performance standards carried forward from the 2012 Revised Final Permit and already incorporated into the District stormwater regulations, include support for stormwater harvesting (Section 3.2). The permit requires training on these techniques both for the development community (Section 3.10) and municipal employees (Section 3.9).
BD 10.1	Conduct a citywide analysis of flood zones to understand the impact of setbacks, buffers and zoning and land use policies on existing and future developments.	The Final Permit incentivizes the restoration of stream buffers and floodplains by allowing the Permittee to take credit towards WLA reduction for these activities (Subsection 3.2.11).
BD 10.3	Propose amendments to floodplain regulations and zoning and land use policies to ensure that waterfront setbacks and buffers allow for future sea-level rise, changes in precipitation patterns, sustainable landscaping practices, erosion, and reduce flood risks.	The Final Permit requires that all development proposed for floodplains must be evaluated from both flooding, flood storage capacity and water quality perspectives (Section 2.7)
NC[10] 13.2	Reduce the heat-island effect and related increase in outside air temperatures with	EPA notes that the permit requires an increase in the number of tree plantings to

[9] "BD" refers to buildings and development.
[10] "NC" stands for neighborhoods and communities.

	cool and living roofs, expanded green space and tree cover, prioritizing hotspots and those areas with the greatest number of heat vulnerable residents. Incorporate heat-island mitigation into planning for green infrastructure, tree canopy, and public space initiatives.	33,525 trees over the permit term and the implementation of 350,000 square feet of green roofs in the MS4 area (Subsection 1.5.3.1), which does include many of the identified hotspots and heat vulnerable residents.
NC 14.4	…Provide green space that supports community activities and serves as a rain garden to capture slow precipitation runoff…	The permit supports this measure with many green infrastructure-related provisions. See above.

2.8 Submittals to EPA

Section 2.8 of the permit provides a summary table (Table 2) with the schedules for all planning and assessment elements required to be submitted to EPA. The Table also makes note of which of these elements the Permittee shall make available for public notice and comment and which are subject to EPA approval.

In general, EPA has tried to align schedules with annual reporting in order to minimize the number of submittals. There are a few exceptions. For example, the Quality Assurance Program Plan (QAPP) for the water quality assessment program needs to be aligned with the sampling cycle rather than the annual reporting cycle.

EPA is also encouraging implementation of new plans and strategies sooner rather than later and has carefully considered when and whether additional public notice and EPA review is needed before implementation of specific action that will be determined during this permit term. EPA encourages the Permittee to consider any input at any time on any element of the program. EPA also has tailored permit terms and conditions in the Final Permit to be reasonably prescriptive about what is required in these assessments and strategies, so that immediate implementation can accelerate water quality benefits. In addition, EPA underscores that all of the required plans and assessments will become part of the package that EPA will assess and refine when reissuing this permit for the next permit term. At that time all of those elements will be available for public comment.

2.9 Updated SWMP Plan for Next Permit Term

EPA requires that the updated SWMP Plan be made available for public notice and comment no later than 15 months prior to the expiration date of the Final Permit, and submitted to EPA no later than 9 months prior to that expiration date.

2.10 Application for the Next Permit Term

The Final Permit requires that the Permittee develop a permit application package no later than 270 days prior to the expiration date of this permit. The permit application package includes the permit application, a fully updated SWMP Plan and a fully updated TMDL IP.

Note:

Previous permits had included a provision indicating that "[t]hese 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." At the time the previous permits were issued, EPA had not yet developed clear guidance on the appropriateness of using 319(h) funds for urban stormwater. However, in 2013, EPA issued guidance entitled "Nonpoint Source Program and Grants Guidelines for States and Territories," https://www.epa.gov/sites/production/files/2015-09/documents/319-guidelines-fy14.pdf (April 12, 2013). The guidance clarifies that "§ 319 funds may be used to fund any urban stormwater activities that do not directly implement a final municipal separate storm sewer system (MS4) NPDES permit," and contains very specific guidance on how 319 funds can be spent. *See id.* At p. 24. Accordingly, this provision from earlier permits has been removed from the Final Permit.

Part 3. STORMWATER MANAGEMENT PROGRAM IMPLEMENTATION

The Final Permit has been organized such that all requirements for implementing stormwater control measures are included in Part 3.

3.1 Implementing Part 3 of the Permit

Part 3 describes the programs that the Permittee is required to maintain to achieve pollutant reductions, demonstrate progress toward achieving applicable TMDL WLAs, and meet other water quality objectives. Several commenters expressed confusion over how the on-site retention provisions in Section 3 related to the discharge limits expressed in Subsection 1.5.3.1. Therefore, EPA included a new Section 3.1 of the Final Permit, *Implementing Part 3 of the Permit*, to provide additional clarity. EPA emphasizes that all the retention measures in Section 3.2 are included in the 1,038 Acres Managed discharge limit.

3.2 Achievement of the Acres Managed Numeric Limit

This section has been organized so that all requirements related to on-site and off-site retention (Acres Managed) are included in one Section (3.2).

Based on several comments, EPA realized that there was confusion between projects that were termed “retrofits” vs those that are associated with new or redevelopment. Given that nearly all development activities in the District are redevelopment projects, the stormwater control measures associated with them are essentially “retrofits”. To reduce confusion, EPA has removed the term “retrofit” from the Final Permit and instead uses terms such as “implementation of stormwater management measures” or, as appropriate, “implementation of on-site retention measures”.

3.2.1 Accountability for Retention Measures

Development of District stormwater regulations to implement a 1.2" on-site retention standard with an accompanying off-site mitigation program were major advancements of the program per the 2012 Final Revised Permit. During the previous permit term, the Permittee successfully implemented both provisions, so the Final Permit requires the Permittee to continue implementing these programs, with a few enhancements and modifications to improve accountability for retention measures, such as posting on the District website the status of all projects, including both on-site and off-site stormwater management volumes retained (3.2.1.1).

3.2.2 Implementing the Standard for Development and Redevelopment for Projects Greater than or Equal to 5,000 Square Feet

This provision remains largely unchanged from the 2012 Final Revised Permit, which led to the Permittee adopting specific measures in the District's Stormwater Management Regulations in 2013.[11] This provision requires the Permittee to continue to require the design, construction, and maintenance of stormwater controls to achieve on-site retention of 1.2" of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration, and/or stormwater harvesting and reuse for all public and private development and redevelopment projects that disturb greater than or equal to 5,000 square feet of land area, in concert with the provision for off-site retention (Subsection 3.2.3).

3.2.3 Stormwater Retention Credit Program

The 2012 Final Revised Permit provided the Permittee the option of providing off-site mitigation and payment-in-lieu options for stormwater retention in order to provide flexibility to the regulated community while still reducing pollutants. The District opted to implement an offsite mitigation program, and developed the Stormwater Retention Credit (SRC)[12] program, which is now almost five years old. It is demonstrating notable potential, and has received national and international attention for its thoughtfully designed framework. For example, The Nature Conservancy and Encourage Capital are supporting it as a national investment model[13], and the United Nations has identified it as an example of innovation for climate action[14]. Relatively speaking, however, the SRC program is still in its infancy and has yet to realize its full potential. To enable the current program to become more established, EPA is leaving the off-site mitigation program provisions of the permit largely unchanged in the Final Permit, with a couple of enhancements:

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[11] Chapter 5 (Water Quality and Pollution) of Title 21 (Water and Sanitation) of the District of Columbia Municipal Regulations (DCMR), Sections 500 through 599.

[12] Ibid. *See* specifically Sections 527 through 534.

[13] *New Investment Model for Green Infrastructure to Help Protect Chesapeake Bay: Business and conservation interests set to invest in Washington, D.C.'s stormwater management program*, March 7, 2016. http://encouragecapital.com/wp-content/uploads/2016/03/DC-Stormwater-Press-Release.pdf

[14] United Nations, *UN report identifies innovative ways to boost investment for climate action in cities*, December 4, 2015. http://www.un.org/sustainabledevelopment/blog/2015/12/state-of-city-climate-finance/

- A limitation on grandfathering older development projects for SRC eligibility, to maximize water quality benefits. As such, for any retention practices installed prior to July 1, 2013 (when the SRC program formally took effect), only projects for which an application has been submitted within 6 months after the effective date of revisions to the District stormwater regulations will be eligible to generate SRCs (3.2.3.2); and
- The Permittee must establish an SRC Purchase Agreement Program and technical support for property owners interested in generating SRCs (3.2.3.3).

One commenter requested that elimination of the grandfathering provision be implemented right away. However, EPA notes that the requirement in Section 2.2.4 (Analysis of Updating Stormwater Management Regulations) could result in the Permittee making other changes to its stormwater regulations. Because revising regulations is a complicated and lengthy process, EPA believes it is not appropriate to require more than one set of revisions during the permit term. Therefore, EPA requires the Permittee to initiate appropriate revisions to its regulations within twelve (12) months of the effective date of the Final Permit, but has included the option for the Permittee to request an alternative schedule for this permit requirement in order to enable the Permittee to determine whether other revisions to its regulations are necessary.

At the time this permit is being finalized, the Permittee has already placed funds in escrow to establish the SRC Purchase Agreement Program.

One commenter suggested that the permit should prohibit indefinite banking of SRCs. EPA has found no evidence to suggest that there would be any negative impacts to water quality from indefinite banking of credits, though there is potential for positive impacts, i.e., realizing water quality benefits earlier than when a credit is actually used. The Permittee has adequate tracking mechanisms to determine both when retention projects are actually installed, as well as when any credits generated by those projects are utilized. Though not placing any time limits on banking SRCs in the Final Permit, EPA is not dismissing the concern, and has included an annual reporting requirement (*see* Annual Reporting Template, Question 17) to report on the number of SRCs more than one-year old that are going unused. EPA plans to reassess this issue with the next reissuance of the permit.

3.2.4 Implementing the Standard for Projects in the Public Right-of-Way

The 2012 Final Revised Permit provided a 5-year exemption from achieving the full 1.2" on-site retention requirement and conducting off-site mitigation for District-owned projects in the Public Right-of-Way (PROW) that were greater than or equal to 5,000 square feet. EPA was clear in the Fact Sheet for that permit that the exemption would not automatically extend to the next permit term, and that the Permittee should spend the 5-year period determining the on-site retention that was maximally practicable in PROWs. Because of the poor understanding of the range of on-site retention capacities in PROWs, EPA made no *a priori* determination at that time as to how this framework would be implemented, *e.g.*, as a numeric threshold or standard, an algorithm, or a process.

During the 2011 permit term, the Permittee implemented a process to assess each proposed PROW development or reconstruction project in the context of individual opportunities and challenges at the particular site. During the time period in which this process has been in place, the Permittee has undertaken site plan reviews for 13 Type 1 projects (solely reconstruction of existing PROW) and 116 Type 2 projects (parcel-based development that reconstructs adjacent PROW). Permittee data for on-site retention across all of these projects indicate that feasibility varies widely from 0% to 600% retention of the 1.2" stormwater retention volume. This type of variation makes a strong demonstration that a deliberative analytical process that determines maximum on-site retention on a site-by-site basis would be appropriate and could be successful with appropriate oversight and accountability. While some sites may have little, if any, capacity for on-site stormwater retention, others clearly have capacity significantly in excess of 1.2". For this reason, the Final Permit requires that a site-specific determination be made of the maximum amount of stormwater retention that is practicable and that the Permittee's design considerations and decision process continue to be the mechanism for implementing stormwater retention measures in the PROW, as described in detail in the District's *Stormwater Management Guidebook (2013)*, http://doee.dc.gov/swguidebook.

EPA weighed the pros and cons of requiring the Permittee to provide off-site mitigation for all PROW projects that cannot achieve on-site retention of 1.2" of stormwater, and determined that: (1) this approach could dis-incentivize full utilization of on-site retention capacity at those sites that can achieve significantly more than 1.2"; (2) it could divert Permittee resources from implementation projects with greater pollutant reduction potential; and (3) the overall on-site retention totals would not necessarily be enhanced, since the Permittee already has fixed annual numeric limits, which must be achieved regardless. In the interest of balancing prescriptive and flexible requirements, EPA is choosing, *for this permit term*, to allow the Permittee to continue to build a demonstration that the case-by-case maximization approach in PROWs achieves equal or better overall stormwater retention compared to a straight 1.2" stormwater retention requirement.

The status of all PROW projects must be posted on the Permittee's website as a public record of the efficacy of this process, and EPA encourages all stakeholders to evaluate this information and provide feedback to the Permittee and to EPA on the strengths and weaknesses of this approach. If necessary, this framework can be revisited with reissuance of the permit five years from now, including direct implementation of the 1.2" on-site retention requirement with off-site mitigation. At that time, in tandem with the PROW category-specific optimal designs that will be in place by 2021 per Section 2.4 of the Final Permit, it may be easier to determine if an alternative or combined framework may be more effective. At this time, however, EPA considers that the Permittee has made a reasonable demonstration for practicability of this evaluation and decision process as it applies to implementation of the on-site retention standard in PROWs and agrees that the site-specific approach constitutes MEP for this permit term.

The Final Permit also incorporates the definition of "Public Right-of-Way" (Part 8) used in the Permittee's stormwater regulations in order to ensure that there is no confusion about which projects are subject to the requirements of this permit.

3.2.5 Implementing the Standard for Substantial Improvement Projects

This provision remains largely unchanged from the 2012 Final Revised Permit. The Permittee shall continue to require the design, construction, and maintenance of stormwater controls to achieve on-site retention of 0.8" of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration, and/or stormwater harvesting and reuse for all development projects where less than 5,000 square feet of soil is disturbed, but where the combined footprint of improved building and land-disturbing activities is greater than or equal to 5,000 square feet and which are undergoing substantial improvement. "Substantial Improvement" is defined in the District's stormwater regulations and that definition applies to this permit.

3.2.6 Stormwater Management Guidebook

This provision remains largely unchanged from the 2012 Final Revised Permit. The Permittee shall continue to improve and implement the *Stormwater Management Guidebook* for use by land use planners and developers for all projects addressed by this permit.

3.2.7 Green Area Ratio Program

This provision remains largely unchanged from the 2012 Final Revised Permit. The Permittee shall continue to implement and refine the Green Area Ratio program to improve stormwater management in the MS4 Permit Area while allowing flexibility for developers and designers to meet development standards.

3.2.8 Tree Planting

Other than an increase in the number of net trees required to be planted and inclusion in the Acres Managed permit limit (see Subsection 1.5.3.1) this provision remains largely unchanged from the 2012 Final Revised Permit. The annual total tree planting shall be calculated as a net increase, such that annual mortality or other loss is also included in the calculation, and proper operation and maintenance provisions are also stipulated.

3.2.9 Green Roofs

Other than inclusion in the Acres Managed permit limit (see Subsection 1.5.3.1), this provision remains unchanged from the 2012 Final Revised Permit. The Permittee shall ensure the installation of a minimum of 350,000 square feet of new green roofs in the MS4 Permit Area as a total over the five-year permit term.

3.2.10 RiverSmart Programs

Although the District's RiverSmart Programs have provided stormwater benefits to the District for several years, they are specifically incorporated into the Final Permit to allow a formal mechanism for tracking and reporting of Acres Managed benefits. The Permittee shall continue to implement and refine its suite of RiverSmart programs (Homes; Communities; Schools; Rooftops; Rebates; Targeted Watersheds). These voluntary retention projects do not need to meet the 1.2" retention requirement, but they may be used to generate SRCs if they

otherwise meet all the requirements for SRCs per Subsections 3.2.1.1 and 3.2.1.3 of this permit, and the District stormwater regulations.

3.2.11 Stream, Buffer and Floodplain Restoration

Restoration of streams, stream buffers, and floodplains are specifically incorporated into the Final Permit to allow a formal mechanism for tracking and reporting of pollutant reductions/Acres Managed for these activities. The Permittee may take credit for pollutant reductions from stream, buffer, or floodplain restoration activities where stream bed load or bank erosion contributes to the nutrient, total suspended solids (TSS) or sediment load in that stream.

3.3 Municipal Operations

In May 2013, EPA performed a compliance inspection of the Permittee's MS4 program. As part of the compliance assessment, EPA also reviewed documents provided by the Permittee following the inspection, as well as the 2013 and 2014 annual reports. Several program deficiencies were identified, which are addressed in the Final Permit, as referenced below.

Noncompliance Issue	**Corresponding Provision in the Final Permit**
Failure to develop and implement a maintenance protocol for District-owned property;	3.8.1
Failure to maintain a complete electronic inventory of stormwater control practices that includes information on the mechanism used to assure maintenance;	3.3.2.6, 3.3.2.7
Failure to practice good housekeeping and to implement a yearly inspection schedule at municipal facilities;	2.3, 3.3.2.1, 3.3.2.2, 3.3.2.3, 3.3.2.5
Failure to implement the training required in the permit;	3.9
Failure to track all critical sources as required by the permit;	3.4.1.1
Failure to maintain an industrial facilities database as required by the permit.	3.3.2.6, 3.4.1.1

3.3.1 Response to Sanitary Sewer Overflow to the MS4

This provision is a long-standing element of the District SWMP in order to ensure adequate and timely response to illicit discharges via the MS4 that result from overflows from the sanitary sewer system. At the request of the Permittee, EPA has modified this provision to mark the response time and the notification of sewer and public health officials from the time the overflow is confirmed rather than from the time the Permittee is notified of the overflow. This provides the Permittee the opportunity to establish that the event is actual prior to initiating response procedures.

3.3.2 Industrial Activities at Municipal Operations

A few modifications to the requirements for industrial activities at municipal operations have been made to the Final Permit. These include:

- The Permittee must ensure that stormwater pollution prevention measures are installed at all District-owned or leased facilities and job sites within the MS4 Permit Area where industrial activities occur or are considered "critical sources". For operations that are being leased by third parties that currently have inadequate stormwater pollution prevention measures, a requirement to implement and maintain them must be included in lease agreements as they are established or renewed (3.3.2.1);
- All municipally-operated industrial activities will now be required to develop and implement Stormwater Pollution Prevention Plans (3.3.2.2);
- An option for pre-treatment of wash waters prior to disposal has been included (3.3.2.4);
- The Permittee shall maintain a database inventory of all municipal operations that conduct industrial activities or are considered critical sources (3.3.2.6). This reflects tracking system improvements undertaken by the Permittee during the 2011 permit term.

3.3.3 Pesticide, Herbicide and Fertilizer Use.

This provision remains largely unchanged from the 2012 Final Revised Permit.

3.3.4 Catch Basin Operation and Maintenance

As an interim measure, the Final Permit requires that all MS4 catch basins be inspected at least once annually, and cleaned out as necessary (Subsection 3.3.4.1). This provision also allows for occasional exceptions within a reasonable margin of error for logistical obstacles, such as cars parked over catch basin inlets.

The Permittee is nearing full implementation of a GIS-mobile field application system that includes information on the catch-basin specific frequencies for cleaning and other maintenance. Under the new system, expected to be in place within twelve (12) months of the effective date of this permit (per Subsection 3.3.4.2), the Permittee will have adequate data on each catch basin to determine how frequently each catch basin must be cleaned out; these frequencies may be more or less frequently than annually, depending upon the rates at which they accumulate materials. This system will help the Permittee to optimize resources devoted to catch basin maintenance activities. As soon as this system is in in place and fully implementable, per the requirements of Subsection 3.3.4.3, the permit requirement for inspection/cleaning frequency transitions from at least once annually to the customized frequencies as determined by prior inspections and maintenance activities, and documented in the mobile app.

3.3.5 Storm Drain Outfall Operation and Maintenance

DOEE requested that EPA revise the repair objectives from an annual percentage of outfalls in need of repair, as articulated in the 2012 Final Revised Permit, to a numeric total for

the permit term. EPA has accommodated this request by requiring a total of 50 catch basins to be repaired by the end of the permit term. This is the same total number of catch basin repairs originally proposed, but the Permittee now has some latitude with the implementation schedule by having a five-year window in which to accomplish all of the repairs.

DOEE and DC Water both expressed concerns because some of the District outfalls in need of repair can only be accessed via property owned and/or operated by third parties such as the National Park Service. Both entities expressed concern that difficulty obtaining the necessary permissions from those third parties may jeopardize compliance with this permit requirement. EPA acknowledges that some outfall repairs may be delayed by third parties despite due diligence by the Permittee. However, the Permittee will have the entire five-year permit term to repair the outfalls, so if it is anticipated that a third party will be involved in the process, the Permittee may want to commence the process of outfall repair for those outfalls sooner rather than later in the permit term. Providing a five-year schedule for completion of the necessary repairs, rather than annual targets, should also provide some flexibility in implementing this requirement.

EPA has also provided additional flexibility in meeting the terms of this provision by allowing the Permittee to substitute a portion of the outfall repairs with stream restorations; this may be undertaken with a demonstration that the in-stream water quality benefits of restoration exceed those derived from outfall repair.

3.3.6 Street Sweeping

The 2012 Final Revised Permit required the Permittee to sweep 641 acres annually in the MS4 Permit Area. In this Final Permit EPA is modifying the metric for sweet sweeping to “miles swept” to align with the Chesapeake Bay Program partnership models for pollutant reduction estimates, and the Permittee’s reporting obligations under that program. Making some assumptions about average street widths, 641 acres is approximately 200 street miles. Based on information provided by the Permittee about its street sweeping program, the Permittee currently is achieving significantly more than 641 acres per year of street sweeping in the MS4 Permit Area.

In this Final Permit, EPA is requiring that the Permittee sweep no less than 8,000 miles annually in the MS4 Permit Area. This is based on a conservative estimate from the Permittee since current street sweeping tracking does not distinguish between MS4 and non-MS4 areas of the District. The Permittee is close to implementing a georeferencing-based street sweeping system that will make it possible to accurately estimate the number of miles swept in the MS4 Permit Area. Within 18 months of the effective date of this permit, annual reports shall provide more accurate estimates of street miles swept.

3.3.7 Transportation and Utility Construction Activities

Standard and emergency utility and road repair projects will now be required to implement soil erosion and sedimentation measures and to remove silt from all dewatering discharges. This addresses a specific gap in construction coverage since these projects generally

disturb less than one acre, but are quite common and often occur in close proximity to storm drains.

3.4 Critical Sources

Since the term "Critical Sources" is relevant to both Section 3.4, Critical Sources, and Subsection 3.3.2, Industrial Activities at Municipal Operations, EPA moved the itemized description of critical sources from Subsection 3.4.1.1 (of the prior permit) to the definition in Part 8 of the Final Permit. See additional description in the Part 8 (Definitions) section of this Fact Sheet. EPA notes that simply moving the itemized list of "Critical Sources" to Part 8 did not change the permit requirements regarding critical sources; one minor change has been made to the permit requirements for critical sources in Subsection 3.4.2, however, and is described below.

3.4.2 Inspection of Critical Sources

Per agreement with EPA, the Permittee conducts inspections at facilities in the District with coverage under EPA's *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities* in accordance with EPA's *Compliance Monitoring Strategy* (CMS). The language in this Subsection has therefore been modified, as follows, to clarify that facilities with coverage under the MSGP must be inspected per the terms of the CMS, while facilities without coverage under the MSGP are subject to the specific terms of the Final Permit as follows:

> *Unless otherwise covered under the Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity or an individual permit, the Permittee shall continue to inspect all Critical Sources in the MS4 Permit Area that are identified in the Critical Source Inventory at least two times during the five-year term of this permit. Critical Sources covered under a MSGP or individual permit shall be inspected according to the EPA Approved Compliance Monitoring Strategy.*

3.5 Construction Activities

This section remains largely unchanged from the 2012 Revised Final Permit.

3.6 Illicit Discharges and Illegal Disposal

This section remains largely unchanged from the 2012 Revised Final Permit.

3.7 Targeted Pollutant Controls

A new section has been included in the permit to consolidate a number of the Permittee's existing SWMP programs and policies focused on specific source controls for several important pollutants of concern, all of which have local water quality implications, including relevant TMDL wasteload allocations for trash, polyaromatic hydrocarbons, nitrogen, phosphorus, multiple metals and toxics. These include:

- Trash prevention and removal efforts (3.7.1);
- The District fee on disposable shopping bags (3.7.2);
- The District ban on certain polystyrene foam food containers (3.7.3);
- The District ban on the use of coal tar pavement products (3.7.4);
- The District restrictions on phosphorus lawn fertilizers (3.7.5);
- The District program for hazardous waste collection (3.7.6); and
- The District leaf and yard waste collection program (3.7.7).

While most of the targeted pollution control programs are established and ongoing, inclusion in the Final Permit provides a foundation for tracking and reporting the pollutant reductions from these initiatives.

3.8 Operation and Maintenance of Stormwater Control Measures

The provisions for operation and maintenance are largely carried forward from the 2012 Revised Final Permit, though the requirements for non-District-operated stormwater control measures (3.8.2) now explicitly include the need for a long-term verification processes, including regular inspections that may be conducted by the Permittee or by third parties, or may include owner/operator certifications.

3.9 Stormwater Training

This section has been only slightly modified from the 2012 Revised Final Permit to reflect updates in Permittee training programs, and to encourage the Permittee to combine stormwater training with other municipal education programs in order to optimize resources.

EPA also clarifies that training requirements are targeted to personnel who are likely to undertake relevant activities in the MS4 Permit Area even though their primary duties may not be directly related to stormwater management, e.g., wastewater personnel who may be cleaning catch basins or conducting maintenance activities on the wastewater collection system.

3.10 Targeted Public Education

The public education targets and objectives remain largely unchanged from the 2012 Final Revised Permit, with one exception: a requirement to implement education materials, signage, and pet waste bags and repositories at dog parks and other high pet traffic areas has been added to the public education initiatives requirements. The Final Permit also now specifies metrics that the Permittee must track and report. These metrics are included in the Annual Report Template.

Part 4. WATER QUALITY ASSESSMENT

4.1 Water Quality Assessment Program

Monitoring requirements in the Permittee's MS4 permits prior to 2011 consisted largely of discharge characterization, which was accomplished through end-of-pipe monitoring for over

100 different analytes/pollutants. Most of the results for the majority of those pollutants were non-detect, indicating that for more than 10 years those contaminants had not been pollutants of concern in District MS4 discharges. In addition, the Permittee was required to conduct standard dry weather screening for detection of illicit MS4 connections and discharges.

The 2012 Final Revised Permit required the Permittee to develop a new and comprehensive water quality assessment strategy focused more narrowly on the pollutants that are still of significant concern in District waterways, and also on the health of the receiving waters themselves. The 2012 Final Revised Permit established the following objectives for the new program:

1. Make wet weather loading estimates of *E. coli*, total nitrogen, total phosphorus, total suspended solids, cadmium, copper, lead, zinc, and trash 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.

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).

3. Include any additional necessary monitoring for purposes of source identification and wasteload allocation tracking. This strategy must align with the *Consolidated TMDL Implementation Plan*. For *E. coli*, total nitrogen, total phosphorus, total suspended solids, cadmium, copper, lead, zinc, and trash, monitoring must be adequate to determine if relevant WLAs are being attained within specified timeframes in order to make modifications to relevant management programs, as necessary.

In 2015, the Permittee submitted the *Revised Monitoring Program*[15] to EPA for review and approval. The Permittee subsequently updated the Program in 2016. EPA has approved this *Revised Monitoring Program* and has incorporated it into the Final Permit. The following Table (from the Permittee *Revised Monitoring Program*, and recreated in the Final Permit as Table 5) provides an overview of the new water quality assessment elements.

Overview of the Water Quality Assessment Program

Monitoring Element	**Frequency**	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Wet Weather Monitoring	3 events each year																				
Dry Weather Screening	On a rolling basis so that each outfall is																				

[15] *See Revised Monitoring Program*, To meet the requirements of the District Department of Environment's NPDES permit, May 2015, https://dcstormwaterplan.org/wp-content/uploads/DDOE_Revised_Monitoring_Program_DRAFT_FINAL_050815.pdf

	inspected once in the permit term																			
Macro-invertebrates	Once during spring index period each year																			
Habitat	Once during summer of the first year, then on an as-needed basis																			
Geomorph-ology	Once during summer of the first year, then on an as-needed basis																			
Receiving Water Quality	Once each month																			
Trash	3 wet weather events each year																			

4.2 Wet Weather Discharge Monitoring

4.2.1 Pollutants, Collection Methods and Frequencies

The Final Permit requires that wet weather discharge monitoring be conducted for the same nine pollutants of concern noted above. These are the same nine pollutants established as pollutants of concern in the 2012 Revised Final Permit.

4.2.3 Sampling Locations

The Permittee is establishing continuous record and stratified random monitoring locations in each of the three major watersheds of the District (Anacostia River, Potomac River, and Rock Creek). These sites will be monitored during at least three wet weather events each year to establish long-term discharge records, and data will be used to estimate pollutant loadings to receiving waters from the MS4. Since submitting the updated *Revised Monitoring Program* to EPA in 2016, the Permittee has continued to make certain refinements, including to some of the sampling locations, as field reconnaissance determines whether or not proposed sampling locations are appropriate. The Final Permit stipulates specific Continuous Record and Stratified Random sampling locations that differ from the Permittee's 2016 *Revised Monitoring Program*. As these new locations are consistent with criteria for selecting sampling locations, EPA supports these changes in the interest of establishing a robust set of long-term sampling locations. EPA will also support additional adjustments to these locations through the first year of implementation of the new monitoring program, as that first year is expected to be an important test period during which the Permittee can refine methodologies that will support a long-term monitoring program. Those changes must be appropriately justified and documented in the Quality Assurance Program Plan (QAPP) (Subsection 4.3.1.1) that is due to EPA at the end of the first year of the program.

4.3 Receiving Water Assessments

Discharge data alone do not provide a full picture of the ecological health of receiving waters, thus the need to evaluate in-stream variables. The Permittee monitoring program must

now also include evaluations of habitat, macroinvertebrates, and geomorphology, as well as in-stream water quality monitoring. Wadeable stream locations throughout the District have been selected for ongoing assessment of these watershed indicators. Macroinvertebrate communities must be assessed annually. Habitat and geomorphology must be assessed once per permit term. Baselines for all of these variables must be established during this permit term, and these indicators must be evaluated and tracked over the long-term as part of the evaluation of the health of receiving waters and the effectiveness of the MS4 program. The Permittee is adopting many of the elements of the Maryland Biological Stream Survey (MBSS)[16] sampling and interpretation protocols for the Permittee's program.

In the first year of the assessment program the Permittee will be required to evaluate each stream for a variety of other features, including a utility assessment, obstructions, erosion points, dump sites, crossing conditions, and buffer deficiencies.

The Permittee is also required to conduct in-stream water quality sampling monthly for total nitrogen, ammonia, nitrite, nitrate, chloride, total phosphorus, orthophosphate, copper, zinc, sulfate, pH, acid neutralizing capacity, dissolved oxygen, specific conductance and hardness. Collectively these parameters should provide a solid assessment of the water quality in District receiving waters.

4.3.2 Water Quality Sampling

The Permittee's *Revised Monitoring Program* originally proposed *in situ* sampling for 15 water quality indicators. Following the first public notice of the draft permit, the Permittee requested a refined list of parameters believed to be more effective in-stream water quality indicators. In the second public notice period EPA requested commenters to be specific about the important interpretative/indicator value of including specific parameters if the suggestion is to retain it and conversely to be specific about the limited value of specific parameters if the suggestion is to exclude it from the monitoring program. Although one commenter suggested that a longer list was better, EPA received no comments on the value of any of the proposed water quality indicators. Therefore, the Final Permit includes the following quality sampling parameters to be used as indicators of in-stream water quality: total nitrogen, total phosphorus, *E. coli*, total suspended solids, water temperature, dissolved oxygen, conductivity and chloride. EPA underscores that this particular element of the monitoring program is not to track specific pollutants (see Sections 4.2, 4.4, and 4.5 of the Final Permit for those objectives), but to characterize the general health of the receiving waters as efficiently as possible. These parameters are intended to be indicator pollutants, and will not be used for estimates of loading or to identify specific types or sources of discharges.

4.3.3 Benthic Macroinvertebrate Sampling

The Permittee's 2016 *Revised Monitoring Program*, approved by EPA in 2016, included annual benthic macroinvertebrate sampling. In the interim, the Permittee has clarified that

[16] Maryland Department of Natural Resources, Maryland Biological Stream Survey. http://dnr.maryland.gov/streams/Pages/mbss.aspx

macroinvertebrate sampling, while occurring every spring, will only collect samples from specific sites every other year. From the standpoint of providing useful and interpretable data, EPA considers that this refinement does not notably compromise the value of the data set, as long as methods and frequencies are maintained over the long-term. Therefore, the Final Permit requires that sampling be implemented on a rolling basis such that each site is sampled bi-annually.

4.4 Dry Weather Screening and Source Identification

Many of the elements and requirements of the dry weather screening program were established in prior permits as part of the District program to detect and eliminate illicit discharges from the MS4. Methods, schedules, priority systems, and follow-up protocols of the base program are largely unchanged in the Final Permit.

4.4.2 Bacteria Source Tracking

The Final Permit requires the Permittee to conduct a Bacteria Source Tracking study to identify sources of *E. coli* in the MS4 area where WLAs have not yet been attained (also see Fact Sheet discussion on Subsection 2.2.2.1). Because most sources of *E. coli* and other pathogens are not well known, the study will assist in identifying sources to inform mitigation planning and implementation.

During development of this permit, the Permittee initiated a cooperative partnership with EPA's Office of Research and Development to use Microbial Source Tracking methods to identify sources of bacteria in the MS4 area. The method is designed to collect, isolate, identify and measure a host-associated identifier from a water sample, and should provide much more useful results than other existing standard methods. However, since this collaboration is – in part – a methods development and field testing project, the study may not conclude by the July 1, 2021 deadline stipulated in the Final Permit. Thus EPA has provided an option in the Final Permit for the Permittee to request an alternate schedule, if necessary.

4.5 Trash Monitoring

During the previous permit term, the Permittee participated in a multi-jurisdictional collaboration of MS4 communities subject to the Anacostia Trash TMDL. That work group has established monitoring protocols in order to align metrics for tracking and reporting on trash reduction and removal. As such, the Permittee proposed a revised monitoring approach for trash, which EPA has approved. The permit requires the Permittee to continue to sample trash from trash traps in District waterbodies and at outfalls at least 4 times per year for weight and counts of different types of trash.

In addition, the Permittee is also required to conduct transect monitoring at 13 locations in the Rock Creek, Potomac River and Anacostia River watersheds. Data on trash weight will be collected at six of these sites and data on count and weight will be collected at all 13 sites.

These data must be used for the assessment of compliance with the Anacostia Trash TMDL WLA, and the effectiveness of the District's bag fee and foam ban. The Permittee may also use these data to inform future policy decisions regarding trash reduction.

4.6 Data Synthesis

As noted above, the primary reason for revising the Permittee's water quality assessment program is to ensure that there are data of sufficient type and amount to support meaningful interpretations and come to reasonable conclusions about the effectiveness of water quality programs and the status of receiving waters. To that end, the selection of meaningful indicators and the appropriate interpretation of those indicators is very important.

There are two basic categories of indicators for the Permittee's stormwater management program. The Final Permit requires that the Permittee provide a synthesis of what these indicators reveal:

Programmatic Indicators are metrics to evaluate specific aspects of program implementation such as numbers/types of control measures installed, number of inspections performed, or number of illicit connections identified and corrected. Because of the multi-faceted nature of the Final Permit and the Permittee's stormwater management program, there are numerous programmatic indicators (see Annual Reporting Template, and the discussion below).

Watershed Indicators are metrics used to evaluate specific aspects of ecological health, such as macroinvertebrate community diversity, geomorphological indices or water quality data. The Water Quality Assessment program outlined in Part 4 of the Final Permit identifies the indicators that have been selected for the Permittee's program, including the pollutants of concern and the physical and biological variables being assessed on a regular basis.

Collectively these indicators provide the foundation for evaluating both short-term and long-term water quality patterns, as well as how well water quality protection programs are functioning. The Final Permit requires that the Permittee estimate annual pollutant loadings for the identified pollutants of concern (4.6.2.1); estimate annual progress towards all numeric limits (4.6.2.2); and using all data and information collected per the water quality assessments, formalize the suite of long-term indicators to be used well into the future over multiple permit terms (4.6.2.3).

The Final Permit requires that, in each annual report, the Permittee provides a short synthesis of areas of the program deemed effective with ongoing effort, and areas where additional strategies are needed to effectively tackle certain pollutants or sources. The conclusions must be supported by the indicators (4.6.3.1).

In the fifth year of the permit term, the Permittee must provide a synopsis of progress towards meeting all WLAs. The Permittee must also update the SWMP with elements of the program that will be enhanced to make timely progress towards the water quality objectives of the Final Permit and towards meeting District water quality standards (4.6.3.2).

4.7 Data Management

The Final Permit includes a requirement for maintenance and proper stewardship of database systems to ensure the long-term integrity of information and effective and nimble data storage, management, and retrieval.

Part 5. REPORTING REQUIREMENTS

Reporting requirements consist of three basic elements: (1) annual submittal of discharge monitoring reports, (2) preparation and submittal of annual reports, and (3) keeping information readily available to the public.

5.1 Discharge Monitoring Reports

The Final Permit requires that all discharge monitoring be reported electronically to EPA via NetDMR in Discharge Monitoring Reports. EPA notes that federal electronic reporting requirements for NPDES MS4 permits will go into effect during this permit term, which may necessitate a change in the reporting requirements of the Final Permit to ensure consistency with the regulations. Per the 40 C.F.R. § 122.63(f), this would constitute a minor modification not subject to draft permit and public notice requirements.

5.2 Annual Reporting to EPA

EPA has aligned reporting periods for the Final Permit with reporting periods for the Chesapeake Bay TMDL. Because the Permittee must calculate implementation and pollutant reductions for many of the same activities for both purposes, it is only logical to align reporting periods, i.e., July 1 through June 30. The first annual report will be due December 1, 2019, which will cover the period from the date the permit is effective until June 30, 2019, which will be more than 1 year. Subsequent reporting periods will cover one (1) year. The Final Permit requires that annual reports be submitted to EPA, and posted on the District website, no later than December 1 of each year.

In the Final Permit, EPA is requiring a different format to annual reporting from prior permit terms. See the discussion below under Appendix A, Annual Report Template.

5.3 Reporting to the Public

Providing information to interested stakeholders and the general public on the activities and outcomes of the stormwater management program is vitally important. EPA received a number of comments that emphasized the importance of reporting to the public, in formats that would be easily accessible and interpretable. It was clear in the variety of comments received, especially during the first public notice period, that the public desires additional information not only on specific activities, but also on water quality in District receiving waters. Therefore, EPA has included additional explicit requirements in this Final Permit, as outlined in the following discussions.

5.3.1 Stormwater Program Dynamic Web-based Graphical Interface

EPA received a number of comments that focused on the need for more publicly available data, as well as more easily understandable data for the general public and for individuals and organizations that play a role in water quality-related activities. EPA raised this issue with the Permittee, who agreed to enhance public reporting by developing a new Web-based Graphical Interface that will provide a wide array of information in an easily accessible format. The Final Permit includes a new provision to implement a graphical interface that shall include the following types of information linked through a GIS-referenced set of maps: locations of all stormwater control measures in the MS4 Permit Area, sortable by type/function, drainage area, storage volume, and installation date; data on stormwater retention credits certified in the MS4 Permit Area; statistics on implementation of specific types of control measures such as green roofs and trees; TMDL WLAs by stream segment and by pollutant; and monitoring locations linked to monitoring data. The Permittee intends to refine this system over time and to supplement the information with other data and syntheses; visual aids such as photos, graphs, and charts; multimedia content such as videos; and external links to other relevant information.

5.3.2 Website Information Repository

EPA has moved this provision from Section 3.10 to Part 5 of the Final Permit to make it clear that the primary purpose of maintaining a website repository of documents related to the Permittee's stormwater program is to provide information to District stakeholders and the general public. Otherwise, this requirement remains largely unchanged from the 2012 Revised Final Permit.

5.3.3 Permit Limit and Benchmark Progress

The Permittee shall publicly report on annual progress toward all numeric limits in the Final Permit and all benchmarks in the TMDL IP in a readily understandable format. The Permittee may include this progress as part of the Web-based Graphical Interface (5.3.1), on the website (5.3.2), as part of annual reports or other assessments, as long as the public is able to understand and track progress.

Part 6. STANDARD PERMIT CONDITIONS FOR NPDES PERMITS

Pursuant to 40 C.F.R. § 122.41, "[a]ll conditions applicable to NPDES permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit." EPA has removed certain standard permit conditions from the Final Permit that are not plainly applicable to MS4 permits or to eliminate potential discrepancies. However, EPA does not customize standard permit conditions.

6.12.4. Electronic Reporting. This was added to reflect EPA's new Electronic Reporting Rule, 80 Fed. Reg. 64064 (Oct. 22, 2015); see also 40 C.F.R. §122.22(e), which became effective on December 21, 2015.

EPA removed the specific dollar amount references to fines in both Subsections 6.2.2 and 6.10.5 as those amounts are periodically updated.

Part 7. OTHER REQUIREMENTS

7.1 National Historic Preservation Act

In July 2017, EPA concluded consultation under the National Historic Preservation Act Section 106 with respect to the DC MS4 permit. The District of Columbia Historic Preservation Office proposed a conditional finding of no adverse effect from the reissuance of the Final Permit, and specified applicable conditions for the proposed finding. EPA has modified the language in the Final Permit to incorporate the applicable conditions, as follows:

> *Consultation with the District of Columbia State Historic Preservation Officer (DC SHPO) in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations at 36 C.F.R. Part 800 has resulted in a determination that the activities required by the permit will have no adverse effect on historic properties provided that the following conditions are met:*
>
> *a. All of the projects undertaken pursuant to the permit will be subject to review by the DC SHPO as part of the local historic preservation review process revised in accordance with any DC SHPO and/or DC Historic Preservation Review Board comments, as applicable, pursuant to local DC historic preservation legislation;*
> *b. The Permittee will ensure that, for any projects that it intends to implement directly, it will coordinate early with the DC SHPO and revise those projects as necessary to avoid adverse effects on historic properties; and*
> *c. EPA and the Permittee will consult with the DC SHPO pursuant to 36 C.F.R. Part 800 if requested by the DC SHPO, especially for any projects involving adverse effects on historic properties that are of particular concern to the DC SHPO.*
>
> *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.*

Subsequent to EPA's revisions to the draft permit, EPA confirmed with the DC SHPO that nothing in the permit revisions affected the NHPA consultation. Correspondence on the consultation is included in the Administrative Record for this Final Permit.

7.2 Endangered Species Act

In 2017, EPA completed consultation under the Endangered Species Act (ESA) Section 7 with respect to the DC MS4 Permit. The National Marine Fisheries Service concurred via letter

dated February 3, 2017 with EPA's conclusion that the Final Permit is not likely to adversely affect any ESA listed species and/or designated critical habitat. The U.S. Fish and Wildlife Service concurred via letter dated January 5, 2017 that no proposed or federally listed endangered or threatened species are known to exist in the project area.

The Biological Evaluation and correspondence with the Services on the consultation is included in the Administrative Record for this Final Permit.

7.3 401 Certification

In accordance with CWA 401(a)(1), EPA requested certification from the District of Columbia, via DOEE, that the permitted MS4 discharges will comply with applicable water quality standards. The District of Columbia waived its 401 certification. In addition, in accordance with CWA 401(a)(2), EPA notified both Maryland and Virginia, as the water quality of those states could potentially be impacted by discharges from the DC MS4. Neither Maryland nor Virginia objected to issuance of the DC MS4 permit or requested a hearing.

Part 8. PERMIT DEFINITIONS

Terms not specifically defined in the Final Permit or in Clean Water Act regulations, are meant to be interpreted as in common usage.

EPA has revised or added definitions for several terms used in the Final Permit:

New definition:

- Acres Managed (1.5.3.1)
- Consolidated TMDL Implementation Plan (2.2)
- Critical Sources (3.4)
- Green Area Ratio Program (3.2.7)
- Maryland Biological Stream Survey
- Maximum Extent Practicable (1.5 and 2.1)
- Programmatic Indicators (4.6)
- Public Right-of-Way (3.2.4)
- RiverSmart (3.2.10)
- Stormwater Control Measure
- Stormwater Retention Credit (3.2.3)
- Stormwater Management Program Plan (2.1)
- Stormwater Retention Volume
- Watershed Indicators (4.6)

Revised definition:

- Discharge Monitoring Report (5.1)
- Stormwater Management Program (2.1)

Most of these terms have been discussed elsewhere in this Fact Sheet, as indicated. Many of the new definitions simply describe District or other programs cited in the Final Permit, e.g., Green Area Ratio Program, RiverSmart, Maryland Biological Stream Survey. Others are terms formalized in the District's stormwater regulations, and thus are included in the Final Permit to ensure consistency in implementation, e.g., Public Right-of-Way, Stormwater Retention Credit, Stormwater Retention Volume.

Per the discussion in the Fact Sheet on Section 3.2, EPA has removed the term "Retrofit" from the Final Permit, and has thus also eliminated the definition of that term from Part 8.

EPA has also removed the definition of "Upset" since it is used nowhere in the permit other than in Standard Permit Conditions, where it is already defined. The inclusion in the Definitions section was redundant.

Appendix A. ANNUAL REPORT TEMPLATE

There are several changes to annual reporting in the Final Permit.

The Permittee suggested, and EPA agreed, that consolidating all annual reporting requirements in one location in the permit, rather than scattered throughout, would provide clarity for all parties. As a result, all annual reporting requirements are now consolidated into the Annual Report Template.

EPA has also developed the Annual Reporting Template as a way to improve efficiency in both developing annual reports and reviewing annual reports. Permittee MS4 program annual reports to-date generally consist of approximately 100 pages or more, much of which consist of fairly lengthy narrative. Though EPA appreciates the general thoroughness of these reports, it is often difficult and time-consuming to efficiently make compliance determinations. EPA is therefore requiring that most annual reporting elements be simplified to quantifiable metrics, short answers, yes/no compliance statements, and other straightforward and succinct assessments of program requirements. This approach does not preclude the Permittee from attaching additional supplements to their reports or EPA from requesting them on an as-needed basis. In fact, as summarized in Table 2 of the Final Permit, the Permittee will be required to submit certain new plans and strategies with particular annual reports. However, EPA intends for the Annual Reporting Template to provide a concise summary of annual progress in a format that is easily reviewable and understandable to both EPA and members of the public.

EPA has developed an Annual Report Template in a fillable portable document format for ease of both preparation and review. The Annual Report Template is not an official EPA form and, as such, there is no requirement that the Permittee use it. However, the Permittee has indicated an interest in a simplified format, and whether the fillable form is used or not, the Final Permit requires that each annual report include these elements.

The one set of reporting elements that does not directly reflect permit requirements are the TMDL benchmarks. As defined in the Final Permit, benchmarks are quantifiable targets or goals used to assess progress toward milestones (expressed as limits in the permit) and WLAs.

Benchmarks are meant to be used to assess progress in an adaptive management framework, but are not considered directly enforceable measures. Therefore, they are not included in the Final Permit. However, the Permittee committed to tracking and reporting on these measures in the *Consolidated TMDL Implementation Plan*. Therefore, the Annual Report Template includes reporting requirements for each benchmark.

A few commenters expressed concern about no longer having lengthy narrative annual reports. This was one of the motivations for inclusion of the new requirement in Subsection 5.3.1 for the Stormwater Program Dynamic Web-based Graphical Interface. The new web-based system will provide nearly all of the same information that would be included in an annual report plus a great deal more, and will provide it in a much more user-friendly format.

Should this alternative reporting framework not provide improved efficiencies to the Permittee and EPA, or should it fail to provide adequate information to the public, EPA will reconsider this approach when reissuing the permit five years hence.

EPA also notes that implementation of the new e-reporting requirements for MS4s may necessitate some modifications to the reporting requirements during this permit term. See Electronic Reporting Rule, 80 Fed. Reg. 64064 (Oct. 22, 2015); see also 40 C.F.R. 122.22(e).

POINT OF CONTACT

For additional information regarding this permit or any of the associated documents, please contact EPA Region III using the information below:

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