NATURAL RESOURCES DEFENSE COUNCIL

together with

American Rivers · Anacostia Riverkeeper · Anacostia Watershed Society
Audubon Naturalist Society · Clean Water Action · Earthjustice
Maryland League of Conservation Voters Education Fund · Maryland Sierra Club
National Wildlife Federation, Mid-Atlantic Office · Potomac Riverkeeper

June 27, 2013

Maryland Department of the Environment
Sediment, Stormwater and Dam Safety Program
c/o Mr. Brian Clevenger
1800 Washington Boulevard
Baltimore, MD 21230
bclevenger@mde.state.md.us

Re: Comments on Draft MS4 Permit No. 11-DP-3314 / MD0068284 for Prince George's County, Maryland

Dear Mr. Clevenger:

Thank you for this opportunity to comment on Draft Permit No. 11-DP-3314 / MD0068284, the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) discharge permit for Prince George's County ("the Draft Permit").[1] This Draft Permit is critically important to Maryland's efforts to clean up rivers and streams in Prince George's County and, further downstream, the Chesapeake Bay.

These comments are submitted on behalf of the Natural Resources Defense Council, together with American Rivers, Anacostia Riverkeeper, Anacostia Watershed Society, Audubon Naturalist Society, Clean Water Action, Earthjustice, Maryland League of Conservation Voters Education Fund, Maryland Sierra Club, National Wildlife Federation (Mid-Atlantic Office), and Potomac Riverkeeper, which are nationwide and local environmental organizations working to protect and restore water quality in Maryland and the Chesapeake Bay region through advocacy, enforcement, and education. Members of these groups use and enjoy waters adversely affected

[1] Maryland Department of the Environment, National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit, Permit Number 11-DP-3314 / MD0068284 (Apr. 18, 2013), *available at* http://www.mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/PG%20county%20draft%20permit%2004%2018%202013.pdf (hereinafter "Draft Permit").

by Prince George's County MS4 discharges, including the Anacostia, Patuxent, and Potomac Rivers.

The Draft Permit reflects certain improvements over last year's draft Baltimore City permit – primarily the recognition that compliance with water quality standards is a requirement of MS4 permits, not an unenforceable "goal" – in addition to other substantial improvements over the current permit in effect for Prince George's County. Nonetheless, we are concerned that it still fails to meet the requirements of federal and state law and is inadequate to control the pollution that persistently impairs the County's waters. In sum:

- The Draft Permit lacks a legally sufficient compliance schedule for the attainment of water quality standards and total maximum daily load wasteload allocations. The Permit must be revised to require the County's restoration plans to contain enforceable pollution reduction milestones and benchmarks. Additionally, these restoration plans must be incorporated into the Permit via the major permit modification process.

- The Draft Permit fails to require the permittee to reduce its discharge of stormwater pollution to the maximum extent practicable because its restoration requirements allow the use of ineffective practices. The Permit must be revised to require or express a preference for the use of environmental site design techniques.

- The Draft Permit contains unlawful monitoring requirements that are insufficient to yield data representative of Prince George's County's stormwater discharges, or to assure compliance with the limitations contained within the Draft Permit. The Permit must be revised to require monitoring in all water bodies assigned total maximum daily loads in order to assess compliance with restoration plan milestones, as well as other major waters in order to track water quality trends.

- The Draft Permit unlawfully fails to provide the opportunity for public hearings on the permittee's restoration plans. In addition, the Draft Permit makes no provision at all for public input on the permittee's stormwater management programs, in violation of Maryland law. The Permit must be revised to provide for these public participation opportunities.

In order to ensure that all of these requirements are satisfied, we recommend the specific permit language changes appended to these comments as Attachment A.

Significantly, the County has agreed that the Draft Permit needs to be strengthened in all of these areas.[2] There is thus no reason that MDE should not strengthen this permit when the

[2] Larry Coffman, Deputy Director, Prince George's Department of Environmental Resources, Spoken Testimony at Public Hearing on Prince George's County MS4 Permit Tentative Determination (June 5, 2013) (stating that the Draft Permit needs to be strengthened and that DER agrees with the environmental community's recommendations).

same improvements are simultaneously urged by Maryland citizens, agreed to by the Permittee, and required by the Clean Water Act and Maryland law.

We enclose with these comments a USB flash drive containing all of the references cited herein, and we incorporate them as attachments.

I. Standards Governing Adoption of the Draft Permit

MDE may only issue a discharge permit upon its determination that the discharge meets all state and federal legal requirements.[3] In addition to compliance with this substantive legal standard, MDE must comply with the well-settled standards that govern the Department's administrative decision making. Under Maryland administrative law principles, the Department's issuance of a NPDES permit may not be arbitrary or capricious.[4] An administrative agency's actions will be classified as arbitrary and capricious if they are "unreasonable or without a rational basis."[5]

The Draft Permit must therefore be supported by evidence that justifies MDE's decision to include, or not to include, specific requirements. Moreover, MDE would violate these precepts if the Draft Permit's administrative record failed to contain findings explaining the reasons why certain control measures and standards were selected while others were omitted. Maryland law requires that MDE provide evidentiary support for its permitting decisions sufficient to show that a "reasoning mind reasonably could have reached the factual decision the agency reached."[6]

As discussed below, at this juncture neither the Draft Permit, accompanying fact sheet, nor other documents that have been made available to the public suffice to meet these obligations. Consequently, we strongly urge MDE to strengthen the permit in accordance with the recommendations and requirements set forth in these comments.

II. Water Quality in Receiving Waters Does Not Meet Clean Water Act Requirements

In developing the MS4 permitting program, Congress and the U.S. Environmental Protection Agency (EPA) recognized the serious damage polluted stormwater runoff causes local waterways. The wisdom of that judgment remains true today: according to the National Research Council, "Stormwater runoff from the built environment remains one of the great challenges of modern water pollution control, as this source of contamination is a principal contributor to water quality impairment of water bodies nationwide."[7] Locally, stormwater from

[3] Md. Code Ann., Envir. § 9-324(a).
[4] *See Assateague Coastkeeper v. MDE*, 200 Md. App. 665 (Md. App. 2011).
[5] *Dep't of Human Res., Baltimore City Dep't of Soc. Servs. v. Hayward*, 426 Md. 638, 647 (2012).
[6] *See Assateague*, 200 Md. App. at 693, 696.
[7] National Research Council, *Urban Stormwater Management in the United States* vii (2008), *available at* http://www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf (hereinafter "*Urban Stormwater*").

rain or snow melt runs through Prince George's County's MS4 and flows untreated into local waterways. Stormwater is the fastest growing source of pollution to the Chesapeake Bay.[8] In Maryland, stormwater contributes 22.4 percent of phosphorus, 18.2 percent of nitrogen, and 39.4 percent of sediment loads to the Bay.[9]

Prince George's County has over seven thousand storm sewer outfalls that discharge stormwater, and associated pollution, directly into local water bodies.[10] Urban runoff from the County's 22,020 acres of impervious surface is a cause of impairment for the Patuxent River, Anacostia River, and other Prince George's water bodies.[11] In addition, Piscataway Creek is impaired by pathogens like *Enterococcus*, which are commonly associated with MS4 discharge.[12] According to the County's 2011 MS4 annual report, monitoring data analysis indicates that 70% of streams received a poor or very poor rating for Benthic Macroinvertebrate Index of Biotic Integrity, a method of evaluating the biological condition of water bodies.[13]

MDE issued Prince George's County its first MS4 permit in 1993. Though the current Draft Permit represents Prince George's fourth MS4 permit cycle, poor water quality continues to plague the County. In fact, Maryland's 2012 draft listing of impaired surface waters shows that no water bodies in Prince George's County (or, in fact, in all of Maryland) meet all applicable water quality standards.[14] Many local waters still await TMDL development by MDE.[15] This marked lack of progress in achieving water quality standards confirms the need for an effective and enforceable MS4 permit that will stem stormwater pollution and achieve improvements in water quality.

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[8] Chesapeake Bay Program, "Stormwater Runoff," http://www.chesapeakebay.net/issues/issue/stormwater_runoff (last visited June 25, 2013).

[9] Maryland Baystat, "Causes of the Problems," http://www.baystat.maryland.gov/sources2.html (last visited June 13, 2013).

[10] Prince George's County Department of Environmental Resources, *National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Systems 2011 Annual Report* 17 (Aug. 2012) [hereinafter "*2011 Annual Report*"].

[11] Maryland Department of the Environment, *Maryland's Final 2012 Integrated Report of Surface Water Quality* (July 23, 2012, approved by EPA Nov. 9, 2012), *available at* http://www.mde.state.md.us/programs/Water/TMDL/Integrated303dReports/Pages/2012_IR.aspx (hereinafter "*2012 Integrated Report*").

[12] *Id.*; NRC, *Urban Stormwater* at 22 ("A variety of studies have shown that stormwater runoff is a vector of pathogens with potential human health implications in both freshwater (Calderon et al., 1991) and marine waters (Dwight et al., 2004; Colford et al., 2007).").

[13] PGDER, *2011 Annual Report* at 75.

[14] MDE, *2012 Integrated Report* (listing no water bodies as Category 1 waters ("water bodies that meet all water quality standards and no use is threatened")).

[15] *Id.* at Part F.7 (Category 5 Waters).

III. The Draft Permit's Failure to Ensure Compliance with Water Quality Standards and Total Maximum Daily Loads Violates State and Federal Law

The Draft Permit cannot serve as an effective or lawful regulatory tool to clean up local Prince George's County water bodies unless and until it ensures compliance with water quality standards (WQS) and total maximum daily loads (TMDLs), as required by the federal Clean Water Act and Maryland law.

The stated goal of the Clean Water Act is the complete elimination of the discharge of pollutants into the Nation's waters.[16] In keeping with this goal, the Act requires each state to adopt and submit for federal approval water quality standards for all waters within its boundaries.[17] When Congress enacted the 1972 amendments that created the modern Clean Water Act, Council on Environmental Quality (CEQ) Chairman Train explained the role of water quality standards, stating, "Speaking very generally, the whole permit program is tied to the water quality program standards and is a mechanism designed to reach those standards."[18]

For this reason, the Act and implementing regulations require that all NPDES permits must include conditions adequate to "ensure compliance" with applicable water quality standards.[19] Further, the regulations require each NPDES permit to contain limitations on all pollutants or pollutant parameters that "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."[20] The EPA's Environmental Appeals Board has held that this requirement applies equally to MS4 permits.[21] In the words of EPA's General Counsel, "[t]he better reading of Sections 402(p)(3)(B) and 301(b)(1)(C) [of the Clean Water Act] is that all permits for MS4s must include any requirements necessary to achieve compliance with WQS."[22]

In accordance with this federal requirement, Maryland law authorizes MDE to issue discharge permits *only* upon a determination that the discharge "is or will be in compliance with all applicable requirements of: … [s]urface and ground water quality standards."[23] Maryland courts agree: "The MDE may issue a discharge permit upon its determination that the terms of

[16] 33 U.S.C. § 1251(a).
[17] 33 U.S.C. §§ 1311(b)(1)(C), 1313.
[18] Remarks of CEQ Chairman Train, 92 Cong. S4340 (June 22, 1971).
[19] 40 C.F.R. § 122.4(d); *see also* 33 U.S.C. §§ 1311(b)(1)(C), 1342(a).
[20] 40 C.F.R. § 122.44(d)(1)(i).
[21] *In re Government of the District of Columbia Municipal Separate Storm Sewer System*, 10 E.A.D. 323, 329, 335-43 (EAB 2002).
[22] Memorandum from E. Donald Elliott, Assistant Administrator and General Counsel, EPA, re: Compliance with Water Quality Standards in NPDES Permits Issued to Municipal Separate Storm Sewer Systems (Jan. 9, 1991) at 1.
[23] Md. Code Regs. 26.08.04.02(A)(1)(b); *see also* Md. Code Ann., Envir. § 9-324(a); *Assateague Coastkeeper*, 200 Md. App. at 677.

the permit meet all state and federal regulations, *water quality standards*, and appropriate effluent limits."[24]

In addition, all NPDES permits must contain requirements "consistent with the assumptions and requirements of any available wasteload allocation."[25] Wasteload allocations (WLAs) represent the maximum amount of pollutant that a source – such as the Prince George's County MS4 – can discharge into a water body each day and still attain water quality standards, in accordance with that water body's total maximum daily load (TMDL).[26] Once a point source such as an MS4 is assigned a WLA, that WLA must be implemented through a NPDES permit.[27]

MDE itself has recognized the critical importance of implementing TMDL WLAs through MS4 permits: within the text of the Draft Permit itself, MDE states, "Maryland's NPDES stormwater permits issued to Prince George's County and other municipalities will … be used as the regulatory backbone for controlling urban pollutants toward meeting the Chesapeake Bay TMDL by 2025."[28] As MDE clearly understands, if WLAs are not incorporated as enforceable permit terms, they are nothing more than aspirational targets that dischargers will never be compelled to attain.

Despite the clear legal requirement for the Draft Permit to ensure compliance with WQS and TMDL WLAs, it does not do so. In fact, the Draft Permit specifically excuses Prince George's County from complying with water quality standards through its "safe harbor" provision, which states: "Compliance with all the conditions contained in PARTs IV through VII of this permit shall constitute compliance with Maryland's receiving water quality standards and any EPA approved stormwater WLAs for this permit term."[29]

The Draft Permit's approach to WLA compliance may be acceptable in certain cases when a permit's conditions set out a clear and enforceable path toward attainment by a certain future date, such as through a compliance schedule. Federal regulations provide that if WQS or WLA compliance cannot be achieved immediately, a "permit may, when appropriate, specify a schedule of compliance leading to compliance with CWA and regulations."[30] Schedules must be designed to achieve compliance "as soon as possible, but not later than the applicable statutory deadline under the CWA."[31] Maryland regulations confirm that compliance schedules must require the permittee to achieve compliance within "the shortest reasonable time consistent with

[24] *Northwest Land Corp. v. MDE*, 104 Md. App. 471, 479 (Md. App. 1995) (emphasis added).
[25] 40 C.F.R. § 122.44(d)(1)(vii)(B).
[26] 33 U.S.C. § 1313; 40 C.F.R. § 130.2(h).
[27] *See Friends of the Earth, Inc. v. EPA*, 446 F.3d 140, 143 (D.C. Cir. 2006) ("Once approved by EPA, TMDLs must be incorporated into permits.").
[28] Draft Permit at VI.A.
[29] Draft Permit at Part III.
[30] 40 C.F.R. § 122.47(a).
[31] 40 C.F.R. § 122.47(a)(1).

the requirements of the Federal [Clean Water] Act and State law or regulation."[32] Compliance schedules that are longer than one year in duration must set forth interim requirements and dates for their achievement.[33]

The Draft Permit's requirements for Prince George's County's self-imposed compliance schedule, to be contained within a "restoration plan," are not sufficient to *ensure* compliance with water quality standards by the County's chosen date for WLA attainment. This insufficiency stems from the fact that the Permit requires the County to develop a schedule for implementing projects and programs, rather than for attaining actual interim pollution reductions.[34] The flaw inherent in this approach is that even if the County complies with the schedule, implementing its projects and programs on time, there is no guarantee that they will achieve the pollution reductions needed to keep the County on track toward attainment of WLAs by the ultimate deadline.

The Draft Permit's current requirement for the County to adapt its restoration approaches when it fails to attain pollutant load reduction benchmarks contained within "watershed assessments" – documents that are not enforceable under the Permit – is not sufficient.[35] The County's interim pollution reduction requirements *must* be enforceable. If they are not, there will be no possible consequences for failure to attain them. Adaptive management is important, but the County must be given a real incentive to achieve reductions. Decades of stalled progress have shown that voluntary stormwater programs alone cannot guarantee success. In this era of shrinking municipal budgets, mandatory projects are the only ones likely to receive funding – and non-mandatory programs are the first to be cut. Enforceable pollution reduction requirements are necessary for the County to attain wasteload allocations; in other words, only these types of requirements can *ensure* compliance with water quality standards, in accordance with the Clean Water Act and Maryland law.

In addition to requiring enforceable interim pollution reduction milestones in the County's restoration plans, the Draft Permit must also specify that these plans will be incorporated into the Permit itself via the major permit modification process. The restoration plans will contain substantive requirements – including compliance schedules – with which the County must comply. Consequently, these post-Permit effluent limitations must be incorporated into the Permit itself. Federal and Maryland regulations specify that the modification of a compliance schedule is a cause for a major permit modification.[36] Federal regulations further state that major permit modifications must follow all permit issuance procedures, including

[32] Md. Code Regs. § 26.08.04.02(C)(2)(a)(ii).
[33] 40 C.F.R. § 122.47(a)(3).
[34] Draft Permit at IV.E.2.b.i.
[35] Draft Permit at IV.E.1.b.v, IV.E.2.b.iv.
[36] 40 C.F.R. § 122.62(a)(4); Md. Code Regs. 26.08.04.10(D).

public notice and comment, an opportunity for a public hearing, and the right to appeal.[37] The Draft Permit's statement that "the restoration plans will be enforceable under this permit" does not conform with these regulatory requirements or their attendant legal rights for the public.

By way of comparison, we refer to the Washington, DC MS4 permit, which EPA Region III has stated should serve as a model for other permits in the Chesapeake Bay watershed.[38] That permit specifically states that TMDL implementation plans (analogous to this Draft Permit's restoration plans) will be incorporated into the permit itself.[39] EPA further clarifies in the permit's fact sheet that "the EPA will take action to incorporate milestones and final WLA attainment dates into the permit as enforceable requirements of the program."[40] This Draft Permit must do the same.

Additionally, the Draft Permit makes no provision for the attainment of water quality standards in impaired water bodies that lack TMDLs. Clean Water Act regulations are clear that NPDES permits must "ensure compliance with the applicable water quality requirements of all affected States," *i.e.*, with Maryland water quality standards.[41] The fact that MDE has not yet completed a TMDL for a particular impaired water body does not relieve MDE from including within permits conditions that are "necessary to meet water quality standards."[42] The Draft Permit must ensure compliance with water quality standards in all water bodies for which MDE has adopted such standards.

Ultimately, to comply with the Clean Water Act and Maryland law, the Draft Permit must be revised to specify that restoration plans must contain enforceable interim *pollution reduction* milestones. These plans must include a sound rationale for determining that the compliance schedule meets the requirement that standards be met "as soon as possible."[43] And the plans must be incorporated into the Permit via the major permit modification process.

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[37] 40 C.F.R. § 122.62 (cross-referencing 40 C.F.R. Part 124).

[38] EPA Region III, Permit for the District of Columbia Municipal Separate Storm Sewer System, NPDES Permit No. DC0000221 (effective Oct. 7, 2011, modified Nov. 9, 2012), *available at* http://www.epa.gov/reg3wapd/pdf/pdf_npdes/stormwater/DCMS4/MS4FinalLimitedModDocument/FinalModifiedPermit_10-25-12.pdf (hereinafter "DC MS4 Permit"); Statement of Shawn M. Garvin, EPA Mid-Atlantic Regional Administrator, EPA Press Release (Apr. 21, 2010), *available at* http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5afd88a3852576b3005a604f/ecf0fc0431afbf0b8525770c006ea74b.

[39] DC MS4 Permit at 4.10.3.

[40] EPA Region III, Fact Sheet: National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit No. DC0000221, Draft Modification #1, at 7 (July 12, 2012), *available at* http://www.epa.gov/reg3wapd/pdf/pdf_npdes/stormwater/DCMS4/MS4DraftModComments/DC%20MS4%20Draft%20Fact%20Sheet%20Mod_1%2011Jul12.pdf.

[41] 40 C.F.R. § 122.4(d).

[42] 33 U.S.C. § 1311(b)(1)(C).

[43] 40 C.F.R. § 122.47(a)(1).

IV. The Draft Permit Fails to Require the Permittee to Reduce its Discharge of Stormwater Pollution to the Maximum Extent Practicable

The federal Clean Water Act states that MS4 permits "shall require controls to reduce the discharge of pollutants to the *maximum extent practicable*," otherwise known as the "MEP" standard.[44] Likewise, CWA regulations mandate that MS4 permits "will require at a minimum that [regulated entities] develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from [their] MS4[s] to the *maximum extent practicable*."[45] Critically, it is the responsibility of the permitting authority to determine whether the permittee is meeting the MEP standard.[46]

Courts have held that the phrase "'to the maximum extent practicable' does not permit unbridled discretion. It imposes a clear duty on the agency to fulfill the statutory command to the extent that it is feasible or possible."[47] While the term "practicable" is not defined in the municipal stormwater context, "practicable" as used in a different section of the Clean Water Act has been defined as meaning that technology is required unless the costs are "wholly disproportionate" to pollution reduction benefits.[48] As one state hearing board has held:

> [MEP] means to the fullest degree technologically feasible for the protection of water quality, except where costs are wholly disproportionate to the potential benefits. … This standard requires more of Permittees than mere compliance with water quality standards or numeric effluent limitations designed to meet such standards. … The term "maximum extent practicable" in the stormwater context implies that the mitigation measures in a stormwater permit must be more than simply adopting standard practices. This definition applies particularly in areas where standard practices are already failing to protect water quality.[49]

Nor is MEP a static requirement: the standard anticipates and in fact requires new and additional controls to be included with each successive permit. As the EPA has explained, NPDES permits, including the MEP standard, will "evolve and mature over time" and must be flexible "to reflect changing conditions."[50] "EPA envisions application of the MEP standard as

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[44] 33 U.S.C. § 1342(p)(3)(B)(iii) (emphasis added).
[45] 40 C.F.R. § 122.34(a) (emphasis added). States such as Maryland that have been delegated authority to implement the NPDES program must administer their programs in conformance with this federal requirement. 40 C.F.R. § 123.25.
[46] *Environmental Defense Center v. EPA*, 344 F.3d 832, 855-56 (9th Cir. 2003) (hereinafter "*EDC*").
[47] *Defenders of Wildlife v. Babbitt*, 130 F.Supp.2d 121, 131 (D.D.C. 2001) (internal citations omitted); *see also Friends of Boundary Waters Wilderness v. Thomas*, 53 F.3d 881, 885 (8th Cir. 1995) ("feasible" means "physically possible").
[48] *Rybachek v. EPA*, 904 F.2d 1276, 1289 (9th Cir. 1990).
[49] *North Carolina Wildlife Fed. Central Piedmont Group of the NC Sierra Club v. N.C. Division of Water Quality*, 2006 WL 3890348 at Conclusions of Law 21-22 (N.C.O.A.H. Oct. 13, 2006) (internal citations omitted).
[50] National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 48,052 (Nov. 16, 1990).

an iterative process. MEP should continually adapt to current conditions and BMP effectiveness and should strive to attain water quality standards. Successive iterations of the mix of BMPs and measurable goals will be driven by the objective of assuring maintenance of water quality standards."[51] In other words, successive iterations of permits for a given jurisdiction will necessarily evolve and contain new and more stringent requirements for controlling the discharge of pollutants in runoff.

The Draft Permit fails to ensure that the County will reduce its pollution discharges to the maximum extent practicable by failing to require the use of the most effective current stormwater management practices. Specifically, the Draft Permit's restoration requirements fall short of MEP because they do not require or prioritize the use of environmental site design (ESD) techniques.

The MEP standard is a technology-based standard that applies specifically to MS4s.[52] According to the EPA, technology-based standards "are based on the pollutant control capabilities of available technologies."[53] Consequently, the MEP standard requires MS4s to use the technology that will reduce their pollutant discharges to the maximum extent practicable.

Environmental site design (ESD) represents the "MEP technology" for stormwater pollutant reduction in most circumstances. ESD, also known as "green infrastructure" or "low impact development," is defined by the Maryland Stormwater Management Act of 2007 as "using small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources."[54] In other words, ESD techniques seek to reduce the pollution entering water bodies, and the impact of excess stormwater volumes on stream banks, by reducing the amount of runoff that reaches those waters in the first place.

Many ESD techniques accomplish this function by reducing the amount of effective impervious area on a site or in a watershed. Impacts to water quality are tied directly to the introduction of impervious surface cover in the landscape; as impervious cover increases in a watershed, runoff and pollutant loads increase, and water quality degrades. Research shows that when impervious surfaces cover as little as 5 percent of a watershed, aquatic insect and freshwater fish diversity declines significantly, and "[m]arked habitat degradation occur[s] at 8 to 10 percent total impervious area."[55] Overall stream quality diminishes when impervious cover

[51] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722, 68,754 (Dec. 8, 1999).
[52] This technology-based requirement applies separately and in addition to the Clean Water Act's water quality-based requirements for all NPDES permits. *See* Section III above.
[53] U.S. EPA, "Section B. Clean Water Act Requirements," http://www.epa.gov/dfe/pubs/pwb/tech_rep/fedregs/regsectb.htm (last visited June 13, 2013).
[54] Md. Code Ann., Envir. § 4-201.1(b).
[55] Earl Shaver et al., North American Lake Management Society, *Fundamentals of Urban Runoff Management: Technical and Institutional Issues* 4-98, 4-95 (2007), *available at*

exceeds 10 percent and becomes "severely degraded" beyond 25 percent.[56] As a result, the most effective means of addressing impacts to water quality is through addressing runoff at its source, *i.e.*, through reducing the amount of runoff that is generated by a development. This approach prevents runoff and pollutant loads from increasing in the first instance.

ESD techniques include engineered technologies like green roofs and rain gardens, along with nonstructural techniques like conservation of natural landscapes and minimization of impervious surfaces. Together, these techniques work to infiltrate, evapotranspirate, and reuse stormwater that otherwise would run off into storm sewers and water bodies.

ESD or green infrastructure methods have proven to be a cost-effective way of dealing with stormwater pollution. A 2007 EPA study found that "in the vast majority of cases…[ESD] practices save money for developers, property owners and communities while protecting and restoring water quality."[57] Additionally, ESD "provides ecosystem services and associated economic benefits that conventional stormwater controls do not."[58] These practices not only address stormwater runoff but also beautify neighborhoods, cool and cleanse the air, reduce asthma and heat-related illnesses, save on heating and cooling energy costs, boost economies, and support green jobs.[59]

MDE's regulations state that the primary goals of state and local stormwater management programs are "to maintain after development, as nearly as possible, the predevelopment runoff characteristics, and to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding."[60] These goals are best met through the use of ESD technology, which is why Maryland law states that ESD should be used in stormwater management programs whenever possible, and structural BMPs should be used "only when necessary."[61]

However, the Draft Permit allows Prince George's County to meet its "restoration" requirement through the use of non-ESD practices that have been proven to be less effective. The Draft Permit requires the County to "commence and complete the implementation of restoration efforts for twenty percent of the County's impervious surface area consistent with the methodology described in the MDE document cited in PART IV.E.2.a ['Accounting for Stormwater Wasteload Allocations and Impervious Areas Treated, Guidance for National

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http://www.deq.state.ms.us/mdeq.nsf/pdf/NPS_FundamentalsofUrbanRunoffManagement/$File/Fundamentals_full_manual_lowres.pdf.

[56] Center for Watershed Protection, *Impacts of Impervious Cover on Aquatic Systems* 1 (2003), *available at* http://clear.uconn.edu/projects/TMDL/library/papers/Schueler_2003.pdf.

[57] U.S. EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* iii (2007), *available at* http://water.epa.gov/polwaste/green/costs07_index.cfm.

[58] ECONorthwest, *The Economics of Low Impact Development: A Literature Review* iii (2007), *available at* http://www.econw.com/media/ap_files/ECONorthwest-Economics-of-LID-Literature-Review_2007.pdf.

[59] *See* Natural Resources Defense Council, *Rooftops to Rivers II: Green Strategies for Controlling Stormwater and Combined Sewer Overflows* Ch. 2 (2011), *available at* http://www.nrdc.org/water/pollution/rooftopsii/.

[60] Md. Code Regs. 26.17.02.01(A).

[61] *Id.*

Pollutant Discharge Elimination System Stormwater Permits' (MDE, June 2011)] that has not already been restored to the MEP."[62] This guidance document, in turn, allows the use of practices other than ESD – such as extended detention – to fulfill the restoration requirement.

The guidance allows these less effective practices because it is geared exclusively toward meeting the requirements of the Chesapeake Bay TMDL – in other words, reducing nitrogen, phosphorus, and sediment. Consequently, it allows the use of any practice that reduces those pollutants. Yet this approach is inappropriate and ineffective when it comes to improving *local* water quality, which should be of equal if not greater importance within the context of the County's MS4 permit. The guidance's approach is the wrong one in this context because a narrow focus on reducing the three Bay pollutants ignores other pollutants that may be impairing local waters, as well as the problem of excess volume that is at the root of stream degradation and erosion. After all, the MEP standard requires MS4s to reduce their discharge of pollutants – all pollutants, not just three of them – to the maximum extent practicable.

Thus, the practices that are sometimes used to reduce nitrogen, phosphorus, and sediment – including detention ponds, in addition to programmatic activities like street sweeping and catch basin cleaning (which are more properly characterized as maintenance or good housekeeping than restoration) – are not the best practices for restoring Prince George's County water bodies. The practices that *are* needed to restore local waters are environmental site design (ESD) techniques.

Extended detention practices are significantly less effective than ESD at controlling stormwater pollution because they fail to address the core problem: overall runoff volume. While reduction of pollutant loadings is important, equally important is addressing the enormous runoff volumes that destroy aquatic life and mobilize sediments and nutrients by eroding stream banks. Not only do extended detention facilities fail to address this problem of overall runoff volume, they can actually exacerbate the damage by generating greater flow volumes for extended periods. According to the EPA, "[t]hose prolonged, higher discharge rates can undermine the stability of the stream channel and induce erosion, channel incision and bank cutting."[63] For this reason, the EPA has concluded that "[s]imply reducing the peak flow rate, and extending the duration of the predevelopment peak flow, is not effective because as the different discharge sources enter a stream, the hydrographs are additive, and the extended predevelopment peak flows combine to produce an overall higher than natural peak. The result is the pervasive condition of channel incising, erosion, and loss of natural stream biological and chemical function…"[64]

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[62] Draft Permit at IV.E.2.a.
[63] U.S. EPA, *Guidance for Federal Land Management in the Chesapeake Bay Watershed* 3-16 (May 12, 2010), *available at* http://water.epa.gov/polwaste/nps/upload/chesbay_chap03.pdf.
[64] *Id.* at 3-17.

The Washington, DC District Department of the Environment (DDOE) agrees: in the Department's recent draft stormwater regulations, it states that while detention practices have had some benefits for District water bodies, "they have also been inadequate, particularly in terms of controlling the volume of stormwater flowing from major regulated project sites. The water quality treatment requirement provides no control of flow rates from these sites, and the 2-year storm detention requirement fails to mimic natural, pre-development conditions."[65] For this reason, the new regulations will require *retention* of stormwater, which will "more closely approximate natural conditions by keeping stormwater on site rather than allowing it to wash off in large volumes that erode land and stream banks and carry pollution into District waterbodies, thereby damaging aquatic ecosystems and limiting human use."[66]

The National Research Council's 2008 report on stormwater provides strong evidence – and a scientific consensus – that detention ponds fail to meet the full range of urban stream and watershed restoration objectives. The scientific articles relied on in that report, and EPA's interpretations of it, lead to the conclusion that detention is an obsolete practice. The reasons for this conclusion include:

- Detention does not reduce the overall volume of polluted runoff.[67]
- Detention may delay or reduce the peak flow from a particular site, but in combination with the polluted runoff from detention systems across the watershed, volume impacts are merely delayed, not mitigated, and the discharges from multiple basins are additive.[68]
- Detention practices are often designed and constructed on an "ad hoc" or "site by site" basis without analysis of cumulative conditions in the watershed.[69]
- Concentrations of pollutants leaving detention ponds may be reduced, but the volume of the stormwater flows leaving them keeps pollutant discharges high.
- Detention does not protect downstream channels from the erosive effects of stormwater volume, which mobilizes sediments and destroys biota.[70]

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[65] District Department of the Environment, *Notice of Proposed Rulemaking: Stormwater Management and Soil Erosion and Sediment Control* 9 (Aug. 10, 2012), *available at* http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/SW%20Rulemaking%20-%20DC%20Register%208-10-12_0.doc.

[66] *Id.* at 8.

[67] NRC, *Urban Stormwater Management in the United States* at 33.

[68] *Id.* at 341.

[69] *Id.* at 457; *see also* C.H. Emerson, C. Welty, & R. Traver, "Watershed-Scale Evaluation of a System of Storm Water Detention Basins," *Journal of Hydrologic Engineering*10(3): 237-242 (2005).

[70] EPA, *Guidance for Federal Land Management in the Chesapeake Bay Watershed* at 3-17; NRC, *Urban Stormwater* at 372; *see also* B.K. Ferguson, "The Failure of Detention and the Future of Stormwater Design," *Landscape Architecture* 81(12): 76-79 (1991); J.R. Maxted & E. Shaver, "The Use of Retention Basins to Mitigate Stormwater Impacts on Aquatic Life," in *Effects of Watershed Development and Management on Aquatic Ecosystems* 494-512 (L.A. Roesner ed., 1997) (study of the areas downstream of eight stormwater ponds showing that the ponds were no more effective than uncontrolled sites in terms of protecting downstream aquatic life); R.H.

In addition, the pollutant removal rates achieved by detention methods may have been overstated, given that much of the pollutant reduction of such methods is due to gravity settling and/or uptake by plants. Unless the sediments are dredged and removed and the plants are harvested, the nutrients they hold may become re-suspended and otherwise discharged to streams during larger storms. According to the National Research Council, nutrient reduction in such facilities is only likely to occur where plants are harvested.[71] The harvesting of plants from extended detention facilities is rare. MDE should explain that the removal efficiencies cited can only be relied on when plants are harvested, and sediment is dredged and properly disposed, at regular intervals.

Ultimately, reliance upon detention ponds and similar non-ESD methods will fail to restore Prince George's County's water bodies. Instead, ESD must be required as the MEP basis for the Draft Permit's restoration provision, for six key reasons.

(1) The major categories of ESD technologies, including bioretention, achieve consistently higher pollutant removal rates than detention ponds and other non-ESD methods.

The May 2012 report issued by the Water Environment Research Federation on the pollutant removal performance of stormwater practices in the Chesapeake Bay region supports the fact that bioretention and other ESD technologies, because they achieve volume reduction along with frequent pollutant concentration reduction, remove the Chesapeake Bay TMDL target pollutants of total suspended solids, total phosphorus, and total nitrogen at higher levels than do conventional methods, including detention ponds.[72]

The WERF report developed a method for calculating pollutant mass loading reduction by various BMPs by combining volume reduction with pollutant concentration values. The report concluded: "A number of BMPs have shown demonstrated volume reductions. Therefore, even for some BMPs where effluent concentrations are not significantly reduced (or even increased by a small amount), overall loads can be reduced."[73]

McCuen, "Downstream Effects of Stormwater Management Basins," *Journal of the Hydraulics Division* 105(11): 1343-1356 (1979).

[71] NRC, *Urban Stormwater* at 401-02.

[72] Water Environment Research Federation, *International Stormwater Best Management Practices Database: BMP Performance Summary: Chesapeake Bay and Related Areas* (2012), *available at* http://www.bmpdatabase.org/Docs/BMP%20Database%20Chesapeake%20Bay%20Paper%20May%202012_Final_wAttachments.pdf.

[73] *Id*. at 33.

The report further presented the key pollutant load reduction values for bioretention practices compared with detention ponds:[74]

Stormwater Practice Type (based on Chesapeake Bay performance studies)	**Total Suspended Solids – Percent Removal**	**Total Kjeldahl Nitrogen[75] – Percent Removal**	**Total Phosphorus – Percent Removal**
Bioretention	75-77%	69-74%	70-77%
Detention Ponds	51-56%	18-38%	41-61%

MDE's own draft TMDL and MS4 implementation guidance indicates that ESD practices achieve consistently higher pollutant removal rates than non-ESD practices. For instance, "Wet Ponds and Wetlands" are to be credited for: 20% Total Nitrogen (TN) removal; 45% Total Phosphorus (TP) removal; and 60% Total Suspended Solids (TSS) removal. In contrast, ESD practices including Micro-Bioretention, Green Roofs, and Permeable Pavements, are to be credited for: 50% TN; 60% TP; and 90% TSS removal.[76]

Additionally, a recent study of urban stormwater practice performance and cost-effectiveness in St. Paul, Minnesota, examined annual volume and pollutant load reduction and performance efficiencies for 18 projects, including eight rain gardens and eight infiltration trenches.[77] Actual monitoring data for each stormwater practice unit were modeled to calculate annual performance results. The researchers found high pollutant removals for the rain gardens for all four years that were modeled (2007-2010), with rain gardens achieving a 100% removal of Total Suspended Solids in three out of the four years modeled, and achieving an 83% TSS removal rate in the fourth year.

Part of this higher pollutant removal performance is due to the fact that the majority of ESD techniques are "living systems" that employ soil and plant complexes to capture and transform pollutants along multiple pathways, in contrast to non-ESD methods such as underground tanks, ponds, and sand filters that aren't designed to reduce runoff and/or that are unable to capture and utilize both the water and the physical matter and chemical compounds in

[74] *Id.* at 32, Table 19.
[75] Organic nitrogen, measured as Total Kjeldahl Nitrogen (TKN), includes the plant and animal matter that is contained in urban runoff. Along with Total Phosphorus, TKN is the most commonly reported nutrient compound in stormwater practice performance studies.
[76] Maryland Department of the Environment, *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated: Guidance for National Pollutant Discharge Elimination System Permits* 10, Table 4 (Draft, June 2011).
[77] M. Baker & M. Doneux, *Urban Stormwater BMP Performance and Cost-Effectiveness* (paper presented at the July 2012 WERF Stormwater Symposium in Baltimore, Maryland).

runoff. (Other ESD subcategories, such as rainwater harvesting, reduce runoff by capturing and reusing rainwater at the source.) Another reason for the higher pollutant removals achieved by bioretention and other ESD practices is the fact that by reducing total stormwater volumes discharged, total pollutant loadings are also reduced. This is a significant difference between ESD and non-ESD measures that MDE has largely overlooked thus far.

(2) ESD is the only stormwater management method that reduces and prevents stormwater discharges at the source, thus supporting the Clean Water Act's zero discharge goal.

Runoff reduction is achieved by applying ESD retrofits to either replace portions of existing imperviousness or to capture the runoff from such areas. Other stormwater management or restoration methods attempt merely to slow, temporarily store, and/or filter runoff before it reaches or after it flows into a stream. While some of these approaches may remove some pollutants, they constitute only partial treatment, not pollution prevention. In contrast, a review of six rigorous bioretention studies by the Water Environment Research Foundation (WERF) found that, on average, bioretention cells with underdrains reduced 61% of the runoff volume that flowed into them.[78]

(3) Only ESD techniques mimic predevelopment hydrology, a technical performance standard required under Maryland and federal policy and law.

ESD technologies use a variety of functions, including rainwater harvesting and infiltration, in order to mimic predevelopment hydrology and to reduce stormwater volumes discharged to streams. ESD practices, particularly the subcategory of bioretention, use both engineered media and surrounding native soils, along with trees, shrubs, and other deep-rooted plants, to capture, infiltrate, and evapotranspirate runoff at the source – at each parking lot, roof leader, and street curb inlet. For instance, one function of pre-development hydrology that is performed by woods in good condition is shallow subsurface groundwater flow, also termed "interflow." Bioretention units have been found to retain and release water following rain events in the same way that woodlands release interflow to streams: in a slow, steady seepage. "A nonurbanized watershed and a bioretention cell release water to the draining stream in the same manner."[79]

In order to mimic predevelopment hydrology, it's crucial that a technology be able to mimic the ecological systems that produced that hydrology. Bioretention units and green roofs are examples of ESD practices that are also living systems. As such, they change and evolve

[78] J. Clary, S. Tillick, & M. Leisenring, *Bioretention Performance Findings from the International Stormwater BMP Database* 9, Table 2 (paper presented at the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).
[79] K.M. DeBusk, W.F. Hunt, & D. Line, *Bioretention Outflow: Does it Mimic Non-Urban Watershed Shallow Interflow?* (presentation at the Bioretention Summit: Ask the Researcher, July 15-16, 2010, Annapolis, MD, hosted by NC State University), *available at* http://www.bae.ncsu.edu/stormwater/.

over time, but they function similarly across many sites. For instance, a long-term study of ten bioretention units in Maryland found that the plants and soils initially installed undergo an evolution. This evolution gradually creates a thicker topsoil layer that is rich in organic matter. This topsoil layer, and the plant, fungi, and animal communities that create it, are key to the stormwater reduction and pollutant removal functions of bioretention units. The researcher noted: "This [bioretention topsoil] layer has properties significant to engineers, including increased porosity, increased cation exchange capacity, and increased bacterial activity."[80]

(4) ESD is the only method that enables achievement of the three core water quality objectives of urban water body restoration: pollutant removal, runoff reduction, and aquatic life community restoration.[81]

Other approaches, including ponds and stream restoration, can at best achieve two of these three objectives, but ESD is the only method that achieves all three. The aquatic life community restoration has been eclipsed by the emphasis on achieving nutrient and sediment reductions within the Chesapeake Bay TMDL and associated Watershed Implementation Plans (WIPs) (with MS4s as prime enforcement mechanisms). Yet the single most prevalent form of stream impairment in urban and urbanizing counties in Maryland is aquatic life impairment due to the "urban stream syndrome," which includes excessive stormwater volumes causing stream habitat disruptions, along with loss of riparian and upland forest cover. The health of the Bay depends on the health of all of its tributaries; they are not mere conduits. Only ESD addresses and remedies the urban stream syndrome, particularly because it provides runoff reduction to reduce or cease channel scour, groundwater base flow increases to keep streams flowing in dry weather, and increases in trees and other deep-rooted vegetation and soil-based land covers.

In Prince George's County, the Anacostia River and its tributaries are listed as impaired by "lack of riparian buffer" and "stream channelization due to urban development."[82] These impairments are symptoms of a problem caused by excessive runoff from uncontrolled or poorly controlled impervious surfaces, combined with a dearth of riparian and upland forests and vegetation throughout these watersheds. These impairment listings are noted as replacing an earlier listing for biological impairment, but despite the wording change, the reality of biological impairment remains: few fish or macroinvertebrates can survive and reproduce in streams that are repeatedly blown out by stormwater flows, then become a dry gulch in dry weather. The restoration section of the Draft Permit must apply the best, most effective technology, ESD, to reduce and eliminate the cause of these widespread impairments.

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[80] E. Ayers, *Topsoil Development in Bioretention Cells: What are the Implications?* (paper presented at the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).
[81] D. Cameron, J. Zeidler, & D. Sheveiko, *Green Stormwater Retrofits: Objectives and Costing* (paper accepted for publication by ASCE for the conference proceedings of the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).
[82] MDE, *2012 Integrated Report* (Category 4c waters).

(5) ESD retrofit techniques are technically feasible and affordable, and have been demonstrated to remain effective over many years.

A recent EPA-led study of ESD approaches found that "LID [ESD] designs can be from two to four times more cost-effective than comparable conventional designs when environmental performance is factored into the cost analysis."[83] Well designed and built bioretention units have been shown to significantly reduce runoff and stormwater pollutants, even with minimal maintenance. For instance, one long-term study of a bioinfiltration rain garden at Villanova University found no sign of decreased phosphorus removal performance over the entire nine-year monitoring period.[84]

A study of alternative, lower-cost mixes of ESD practices in Montgomery County proposed the use of a wider variety of innovative and tree-based ESD practices to enable the county to meet its MS4 imperviousness restoration requirement based on ESD.[85] The alternative ESD practices included: trees in dry ponds (conversion of ponds to ESD); riparian reforestation; and urban tree plantings in parks and residential yards. The study also highlighted five categories of lower-cost ESD measures (that have been overlooked by MDE), including expansion of parkland no-mow zones, that can save money over the long term in avoided mowing and labor costs. This costing analysis found that the unit cost of a mix of alternative ESD techniques declined over the county's currently planned, more expensive ESD mix, by 20% for a conservative scenario and close to 50% for a best-case scenario (the latter assumed that less expensive tree- and native-plant based practices were technically feasible for a wider range of urban and suburban sites). MDE should undertake a similar but more in-depth study of least-cost ESD practices, and should promote a range of methods for municipal permittees to reduce ESD costs.

(6) ESD is more versatile than other stormwater management approaches and is able to fit within both the space constraints and the local culture of dense urban neighborhoods.

For instance, consultants working with the city of Philadelphia have created a green street retrofit protocol and project that enables linear rain garden street planters to accommodate space constraints, maintenance, and competing needs for use of densely urbanized streetscapes.[86] In a

[83] A. Foraste, J. Thrash, R. Goo, & L. Hair, *Measuring Cost-Effectiveness of LID and Conventional Stormwater Management Plans Using Life Cycle Costs and Performance Metrics* (paper presented at the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).
[84] J. Komlos & R. Traver, *Long-Term Performance of a BioInfiltration Rain Garden for Phosphate Removal* (paper presented at the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).
[85] D. Cameron, J. Zeidler, & D. Sheveiko, *Green Stormwater Retrofits*.
[86] J. Hendrickson and Rod Ritchie, *Green Streets and Regional Stormwater Management Within the Public Right-of-Way: Creative Streetscape Stormwater Management Concept Prototypes within the American Street Industrial Corridor in Philadelphia* (paper presented at the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).

New York City public housing complex, a team of stormwater retrofitters installed 3,400 square feet of bioretention cells and tracked the methods they used to overcome space limitations, underground utilities, and other ultra-urban constraints.[87]

A graduate design project in the University of Maryland Landscape Architecture Department crafted an innovative, community-based ESD-Green Infrastructure revitalization plan for Baltimore's McElderry Park.[88] This collaborative design plan calls for specific ESD technologies to revitalize an older community of rowhouses in central Baltimore. The ESD technologies include: rainwater harvesting, bioretention planters along streets and in public areas, and an ESD water service and facility maintenance collective. The design concept was conceived over the course of dozens of meetings and conversations between the designer and local residents. The McElderry Park Project provides a model that MDE should seriously consider as a way to achieve widespread community support for ESD retrofits in dense, older towns and cities throughout Maryland.

In summary, ESD must be required or, at minimum, prioritized as the technology-based approach for the Draft Permit because it is the most effective approach at pollution prevention and reduction and the only approach for volume reduction, restoration of more natural stream flow regimes, and protection of diverse aquatic biological communities. These capacities and performance abilities of ESD are unmatched by any other type or category of stormwater practice, and other commonly-used practices that MDE currently allows, particularly detention ponds, have been shown to be both ineffective in achieving key water quality and pollution prevention objectives and causes of detrimental impacts downstream. Only ESD meets the Clean Water Act's mandate to control urban stormwater to the maximum extent practicable.

Accordingly, the Pollution Control Hearings Board of Washington State ruled in 2008 that green infrastructure (ESD) techniques represent the MEP, and that a permit not requiring those techniques falls short of the MEP standard.[89] The Board found: "The primary focus of detention standards is on mitigating the worst impacts of large storm events. These standards have little or no effect on small storm events, which can also cause damaging increase in flows. Stated another way, the flow control standard addresses large stormwater flow rates only, which occur only a small percentage of time (1%), and provides only residual control to runoff the remainder of the time."[90] As a result, the Board ruled that "[t]he permit's reliance on a flow

[87] M. Jones et al., *Implementation and Evaluation of Green Stormwater Retrofits to Reduce Combined Sewer Overflows at a Public Housing Facility in New York City* (paper presented at the September 2011 LID Symposium in Philadelphia sponsored by the Mid-Atlantic Research Consortium).
[88] Zoe Clarkwest, MLA Thesis, March 2012, University of Maryland Landscape Architecture Department.
[89] *Puget Soundkeeper Alliance et al. v. State of Washington Dep't of Ecology*, PCHB Nos. 07-021 et seq. (Aug 8, 2008), *available at* http://www.eho.wa.gov/searchdocuments/2008%20archive/pchb%2007-021,07-026,07-027,07-028,07-029,07-030,07-037%20phase%20i%20final.pdf.
[90] *Id.* at 29.

control standard as the primary method to control stormwater runoff from MS4s fails to reduce pollutants to the federal MEP standard."[91]

The Board concluded, based on numerous scientific studies presented by expert witnesses, that "in order to reduce pollution in urban stormwater to the maximum extent practicable…it is necessary to aggressively employ LID [*i.e.*, ESD] practices in combination with conventional stormwater management methods."[92] Ultimately, the permit at issue in the case "fail[ed] to require that the municipalities control stormwater discharges to the maximum extent practicable…because it fail[ed] to require more extensive use of low impact development (LID) [*i.e.*, ESD] techniques."[93]

As a result, in order to comply with the federal MEP standard, MDE cannot leave to the permittee the option of using restoration technologies that are less effective. Rather, MDE must require that Prince George's County use ESD wherever possible to fulfill its restoration requirement under the permit. Such a requirement is also necessary to comply with the state of Maryland's own policy in favor of implementing ESD as the preferred method of stormwater management.

A requirement for ESD would also bring the Draft Permit into conformance with EPA Region III's recommendations to MDE during the development of the Permit last year. In a letter to MDE, EPA stated:

> "EPA strongly supports expanded use of green infrastructure [ESD] to protect and restore waters while creating more environmentally and economically sustainable communities. EPA expects that the restoration requirement in Maryland MS4 permits will be achieved through the use of a variety of green infrastructure retrofitting solutions, such as infiltration practices, green roofs, rain gardens, rainwater harvesting, grass swales/filters, etc. Given the undisputed multiple benefits associated with green infrastructure, as well as general long-term financial benefits, EPA encourages the use of green approaches to stormwater management. Green practices have been proven through multiple studies to reduce stormwater runoff volume and help lessen the amount of pollutants entering surface waters untreated. We urge that MDE provide sufficient incentives in the permit and its administration (such as the green landscaping incentive in the DC MS4 permit) for the preferential use of such practices in meeting the permit terms and to solicit public comment on additional means to accomplish that end."[94]

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[91] *Id.* at 57.
[92] *Id.* at 58.
[93] *Id.* at 6.
[94] Letter from Jon Capacasa, Director, Water Protection Division, EPA Region III, to Jay Sakai, Director, Water Management Administration, MDE, re: Specific Objection to Prince George's County Phase I Municipal Separate Storm Sewer System (MS4) Permit 3 (MD0068284) (Nov. 29, 2012).

As Prince George's County itself has noted in its 2011 MS4 annual report, the Anacostia Restoration Plan also recommends the use of ESD practices for retrofitting impervious surface in the Anacostia watershed.[95]

We urge MDE to heed EPA's recommendations to prioritize the use of ESD in achieving the Draft Permit's restoration requirement. Specifically, we request that the Draft Permit include the following provisions:

- The scope of required restoration must include both the 20 percent of Prince George's County's poorly controlled impervious area *and* any previously obligated but incomplete restoration;
- That the restoration of the entire inventory of required impervious acres to be restored shall be undertaken using ESD, to the extent that the County together with MDE, based on the data, reasonably determine is the maximum extent practicable, taking technical and cost considerations into account; and
- That the restoration efforts shall be designed to reduce stormwater volume to a minimum standard of 1 inch of on-site retention (runoff reduction).

Additionally, we ask that MDE revise its restoration guidance document ("Accounting for Stormwater Wasteload Allocations and Impervious Areas Treated") to require the use of ESD whenever possible, and to provide technical guidance on the use of ESD practices, in a transparent process open to all public and private stakeholders.

V. The Draft Permit's Monitoring Requirements Are Inconsistent with the Clean Water Act and Otherwise Arbitrary and Capricious

Under the Clean Water Act, all NPDES permits are required to contain monitoring provisions sufficient to assure compliance with permit conditions, "including conditions on data and information collection, reporting, and such other requirements as [the permitting authority] deems appropriate."[96] Specifically, the Act states:

> Whenever required to carry out the objective of this chapter, including but not limited to…(2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance…(A) the Administrator shall require the owner or operator of any point source to…(iii) install, use, and maintain such monitoring equipment or methods

[95] *2011 Annual Report* at 86.
[96] 33 U.S.C. § 1342(a)(2).

(including where appropriate, biological monitoring methods)…as he may reasonably require.[97]

Accordingly, federal regulations require all NPDES permits to contain monitoring requirements "to assure compliance with permit limitations."[98] Stated differently, these monitoring requirements must be of the "type, intervals, and frequency sufficient to yield data which are representative of the monitored activity."[99]

In violation of these requirements, the Draft Permit contains monitoring requirements that are completely insufficient to yield data representative of Prince George's County's stormwater discharges, or to assure compliance with the limitations contained within the Draft Permit. It requires the permittee to comprehensively monitor only *one* water body (and, for that water body, only at *one* outfall and associated in-stream station), in addition to limited stream restoration monitoring in *one* other watershed.[100]

This requirement is insufficient to track the performance of the permittee's restoration programs and consistent attainment of water quality standards and TMDLs. Monitoring one single water body simply cannot provide meaningful information about the overall effectiveness of Prince George's County's restoration efforts and other required programs at reducing pollutant loadings and runoff volumes. This lack of information hinders the overall enforceability of the permit, particularly its requirement that the permittee "evaluate the effectiveness of the County's restoration plans and how these plans are working toward achieving compliance with EPA approved TMDLs," including "[e]stimated net change in pollutant load reductions from all completed structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives" and "[a] comparison of the net change in pollutant load reductions detailed above with the established benchmarks, deadlines, and applicable stormwater WLAs."[101] Numerous Prince George's County water bodies beyond Bear Branch and Black Branch are subject to TMDLs, yet the Draft Permit does not require the permittee to monitor *any* of those other water bodies.[102]

As a result, MDE's decision to include these insufficient requirements is both inconsistent with the Clean Water Act and also arbitrary and capricious under principles of administrative decision making. As courts have noted, monitoring is essential to the entire

[97] 33 U.S.C. § 1318(a).
[98] 40 C.F.R. § 122.44(i).
[99] 40 C.F.R. § 122.48(b). Maryland law confirms: "A discharge authorized by a discharge permit shall be subject to any monitoring requirements the Department deems necessary." Md. Code Regs. § 26.08.04.03(A)(1).
[100] Draft Permit at IV.F.1-2.
[101] Draft Permit at IV.E.4.
[102] *See* MDE, *2012 Integrated Report* (listing Prince George's County water bodies other than Bear Branch and Black Branch as Category 4a waters with TMDLs).

NPDES program. "The NPDES program fundamentally relies on self-monitoring."[103] "Clearly, unless there is some method for measuring compliance, there is no way to ensure compliance."[104]

Consequently, EPA policy heavily emphasizes the importance of comprehensive monitoring requirements (in stormwater permits in particular) – both BMP performance monitoring and receiving water quality monitoring. "The NPDES permit must also specify the monitoring necessary to determine compliance with effluent limitations. … Where effluent limits are specified as BMPs, the permit should also specify the monitoring necessary to assess if the expected load reductions attributed to BMP implementation are achieved (e.g., BMP performance data)."[105] Additionally, "EPA recommends that such permits require collecting data on the actual performance of the BMPs. These additional data may provide a basis for revised management measures. The monitoring data are likely to have other uses as well. For example, the monitoring data might indicate if it is necessary to adjust the BMPs."[106]

In discussing how MS4s might best evaluate the effectiveness of their stormwater programs, EPA has stated, "Water quality monitoring is the most direct—and usually the best—approach to evaluating the effectiveness of a SWMP [stormwater management plan]. Program evaluation through water quality monitoring can apply to several of the SWMP components, including illicit discharge detection, construction site runoff control and post-construction runoff control. The collection of water quality data (along with BMP performance data) would be especially useful for discharges to an impaired water body with an approved TMDL."[107] EPA's policy guidance further emphasizes the importance of using monitoring results as a feedback mechanism to adjust an MS4's programs.[108] This cannot be done effectively if monitoring results are not fully representative of MS4 discharges and receiving water quality.

In requiring comprehensive monitoring in only one watershed, MDE ignores EPA's policy guidance in the Draft Permit. Instead, the Draft Permit includes monitoring provisions that will not provide information on the effectiveness of the permittee's overall programs, such that there will be no way to determine whether those programs or working or how they need to be adjusted. Moreover, there will be no way to determine with the permittee is attaining WLAs

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[103] *Sierra Club v. Union Oil Co.*, 813 F.2d 1480, 1491 (9th Cir. 1987), *vacated on other grounds*, 485 U.S. 931 (1988), *reinstated*, 853 F.2d 667 (9th Cir. 1988).
[104] *Champion Int'l Corp. v. EPA*, 648 F.Supp. 1390, 1395 (W.D.N.C. 1986), *vacated on other grounds*, 850 F.2d 182 (4th Cir. 1988) (upholding EPA's objection to a state-issued NPDES permit that failed to include adequate monitoring provisions, among other issues).
[105] U.S. EPA, *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs* 2 (2002), *available at* http://www.epa.gov/npdes/pubs/final-wwtmdl.pdf (internal citations omitted).
[106] *Id.* at 5.
[107] U.S. EPA, *Evaluating the Effectiveness of Municipal Stormwater Programs* 3 (Jan. 2008), *available at* http://nepis.epa.gov/Adobe/PDF/P1001QY0.PDF.
[108] *Id.* at 4.

in *all* receiving waters. These monitoring requirements undermine the effectiveness of the Draft Permit and are arbitrary, capricious, unreasonable, and without rational basis.

As a result, the Draft Permit must be modified to require routine monitoring in all water bodies with TMDLs so that the County will be able to determine its compliance with pollution reduction milestones contained in its restoration plans. Monitoring should also be required in other important water bodies to track water quality trends.

VI. The Draft Permit's Public Participation Requirements Are Inadequate and Unlawful

Under state and federal law, MDE must provide for public review of both the Draft Permit and the programs that the permittee develops to implement that permit. The Draft Permit currently requires Prince George's County to develop, at a later date, many of the essential components of the permit's pollution control requirements. Both MDE *and* the public must review these later-developed effluent limitations.

Maryland law states that MDE must solicit public comment and hold a public hearing (when requested) regarding all tentative NPDES determinations, *i.e.*, draft permits.[109] This requirement conforms to the federal Clean Water Act policy that permitting authorities "shall provide for, encourage, and assist the participation of the public."[110] As the Second Circuit has explained, "Congress clearly intended to guarantee the public a meaningful role in the implementation of the Clean Water Act."[111] This pivotal role is enshrined in the Act's express command that "[p]ublic participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States."[112]

The public has had an opportunity to comment and testify at hearings regarding this Draft Permit. The Draft Permit, however, does not itself contain all of the substantive requirements with which the permittee must comply; rather, it defers the development of those requirements until later, when the permittee is authorized to devise its own stormwater management programs (the contents of which are themselves effluent limitations).[113] As a result, MDE must provide for another public participation opportunity at the point when those programs are actually developed. As the Ninth Circuit has held, permittee-developed documents "that contain the substantive information about how the operator of [an] MS4 will reduce discharges to the

[109] Md. Code Regs. § 26.08.04.01-2(B).
[110] 40 C.F.R. § 25.3.
[111] *EDC*, 344 F.3d at 856.
[112] 33 U.S.C. § 1251(e).
[113] *See* 40 C.F.R. § 122.2 (defining the term "effluent limitations" to include "*any restriction*" on pollutant discharges (emphasis added)).

maximum extent practicable" must be "subject to the public availability and public hearings requirements of the Clean Water Act."[114]

The Draft Permit does provide for public notice and comment after the County has developed its watershed assessments and restoration plans.[115] The Draft Permit specifies that "the County shall allow for public participation in the TMDL process, solicit input, and incorporate any relevant ideas and program improvements that can aid in achieving TMDLs and water quality standards."[116] This provision is commendable, though it should be further strengthened to specify that the permittee will hold *regular* (e.g., monthly or bimonthly) stakeholder meetings throughout the development of all restoration plans.

However, the Draft Permit does not provide the opportunity for public hearings on such assessments or plans. In addition, the Draft Permit makes no provision at all for public input on the permittee's stormwater management programs developed pursuant to part IV.D of the permit. These management programs are to contain numerous effluent limitations with which the permittee must comply – a stormwater management program implementing Maryland's Stormwater Management Act; a public outreach and education campaign on trash; a program to reduce pollutants associated with maintenance activities at City-owned facilities; and more.[117] The public must be given the opportunity to comment and testify at hearings (if requested) regarding any programs developed to implement these provisions. A permit that fails to provide this requisite degree of public participation in the development of these programs and plans violates federal and Maryland law.

The Draft Permit must therefore be revised to give members of the public the opportunity to request a hearing on restoration plans.[118] It must also provide for both public comment and hearing opportunities for stormwater management programs and plans developed by the County.

We further request that MDE require the County to make its annual reports available online in order to better enable participation by the public in the development of new and revised management programs. The current system of requiring citizens to review documents in person at MDE's offices in Baltimore is time-consuming and burdensome.

VII. Conclusion

As these comments indicate, the Draft Permit requires several improvements before it is ready to be approved, and consequently, NRDC, American Rivers, Anacostia Riverkeeper,

[114] *EDC*, 344 F.3d at 857.
[115] Draft Permit at IV.E.3.
[116] *Id.*
[117] *Id.* at IV.D.
[118] If restoration plans are incorporated into the Permit via the major permit modification process, this requirement will be fulfilled because the permit modification will necessarily entail a public hearing. *See* section III of these comments.

Anacostia Watershed Society, Audubon Naturalist Society, Clean Water Action, Earthjustice, Maryland League of Conservation Voters Education Fund, Maryland Sierra Club, National Wildlife Federation (Mid-Atlantic Office), and Potomac Riverkeeper are opposed to approval of the Draft Permit in its current form. We urge MDE to strengthen the Draft Permit in accordance with the requirements and recommendations set forth in these comments, and to bring the Draft Permit into compliance with all applicable legal requirements. Making these changes will help ensure that Prince George's County does its part to clean up local water bodies and the Chesapeake Bay.

Sincerely,

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Natural Resources Defense Council

together with:

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Mike Bolinder
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ATTACHMENT A

Proposed Language Revisions to the Draft Permit

Additions to permit text are underlined; deletions are in ~~strikethrough~~

1. Water Quality Standards

Section III. Water Quality

The permittee must manage, implement, and enforce ~~a stormwater management program (SWMP)~~the programs, plans, and practices required in this permit in accordance with the Clean Water Act (CWA) and corresponding stormwater National Pollutant Discharge Elimination System (NPDES) regulations, 40 CFR Part 122, to meet the following requirements:

1. ~~Effectively prohibit pollutants in stormwater discharges or~~ Eliminate non-stormwater discharges and other unauthorized discharges into the MS4;

2. Eliminate pollutants in stormwater discharges from the MS4 as necessary to comply with Maryland's receiving water quality standards;

~~2~~3. Attain applicable wasteload allocations (WLAs) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with Title 33 of the U.S. Code (USC) §1342(p)(3)(B)(iii); 40 CFR §122.44(k)(2) and (3); and

~~3~~4. Comply with all other provisions and requirements contained in this permit, and in plans and schedules developed in fulfillment of this permit.

Compliance with all the conditions contained in PARTs IV through VII of this permit, including milestones and final dates for attainment of applicable WLAs, shall constitute compliance with §402(p)(3)(B)(iii) of the CWA and adequate progress toward compliance with ~~Maryland's receiving water quality standards and~~ any EPA approved stormwater WLAs for this permit term.

2. Restoration Plans (aka TMDL Implementation Plans)

Section IV.E.2.b (within "Restoration Plans and Total Maximum Daily Load" permit section):

b. Within one year of permit issuance, Prince George's County shall submit to MDE for approval a restoration plan for each stormwater WLA approved by EPA prior to the effective date of the

permit. The County shall submit restoration plans for subsequent TMDL WLAs within one year of EPA approval. Upon approval by MDE, these restoration plans will be incorporated into the permit as enforceable ~~under this~~ permit provisions via a major modification, including milestones, benchmarks, and final dates for attainment of applicable WLAs. The County shall fully implement the plan upon MDE approval.

If the County cannot demonstrate that its selected projects, programs, and controls will achieve WLAs, MDE will revise this permit to include additional controls and/or additional numeric effluent limitations sufficient to ensure that all applicable WLAs will be met. The County shall post the most current version of the plan on the County's website.

As part of the restoration plans, Prince George's County shall:

i. Include a compliance schedule containing the final date for meeting applicable WLAs and interim milestones and numeric benchmarks. Final attainment dates shall be set as the soonest possible date by which each WLA can be attained and shall be consistent with the deadlines associated with the Chesapeake Bay TMDL and associated Watershed Implementation Plans.

a. Numeric benchmarks will specify annual pollutant load reductions and will be used to assess progress toward attainment of milestones and ultimate WLA attainment;

b. Interim milestones will be expressed as a pollutant load reduction, with associated deadlines for attainment, will be enforceable upon incorporation into the permit, and will be included where final attainment of applicable WLAs requires more than five (5) years. Milestone intervals will be as frequent as possible but will in no case be less frequent than every five(5) years;

ii. Include a detailed schedule for implementing all structural and nonstructural water quality projects, enhanced stormwater management programs, illicit discharge detection and elimination program, erosion and sediment control program, and alternative stormwater control initiatives necessary for meeting applicable WLAs, along with provision of the basis for the chosen approach, through demonstration with modeling of how each applicable WLA (and associated benchmarks and milestones) will be attained using the chosen projects, programs, and controls, by the date for ultimate attainment;

iii. Establish a quantitative assessment of the County's current pollutant loadings using the information collected during the source identification process required by Part IV.C of this Permit. This assessment of current loadings shall serve as the baseline from which the pollutant load reductions called for in the County's compliance schedule shall be calculated;

~~ii.~~ iv. Provide detailed cost estimates for individual projects, programs, controls, and plan implementation and maintenance;

~~iii.~~ v. Evaluate and track the implementation of restoration plans through monitoring ~~or~~ and modeling to document the progress toward meeting established benchmarks, deadlines, and stormwater WLAs; and

~~iv.~~ vi. Develop an ongoing, iterative process that continuously implements structural and nonstructural restoration projects, program enhancements, new and additional programs, and alternative BMPs where EPA approved TMDL stormwater WLAs are not being met according to the benchmarks and deadlines established as part of the City's watershed assessments. If data indicate failure to meet any applicable WLA, including failure to attain any interim milestone or benchmark, the City shall make appropriate adjustments to its programs and controls within (6) months to address these failures.

3. Impervious Surface Restoration

Within Section IV.E.2.a ("Restoration Plans"):

By the end of this permit term, Prince George's County shall commence and complete the implementation of restoration efforts for twenty percent of the County's impervious surface area ~~consistent with the methodology described in the MDE document cited in Part IV.E.2.a.~~ that has not already been restored to the MEP, in addition to any impervious surface area which the County is under a previous obligation to restore. Such restoration efforts shall be designed to retain on-site at least 1 inch of stormwater from a 24-hour storm through evapotranspiration, infiltration, and/or reuse using Environmental Site Design retrofit techniques, unless the County demonstrates that:

(i) sole use of such techniques to meet the requirements of this section is impracticable and the County has exhausted all reasonable opportunities to use ESD to meet this requirement, and

(ii) that other types of restoration techniques will, in combination with ESD techniques, be adequate to achieve all applicable benchmarks, milestones, and final deadlines for attainment of WLAs and protect or restore the physical and biological integrity of the County's streams and rivers.

4. Maintenance

In a new section titled "Maintenance of Stormwater Management Practices" – this can replace Section IV.D.1.d (regarding inspections):

d. Maintenance of Stormwater Management Practices

i. County Owned and Operated Practices

Within 18 months of the effective date of this permit, the County shall develop and implement a maintenance plan for all County-owned and operated stormwater management practices. This plan shall be designed to ensure that these practices are properly maintained so that they operate as designed, are safe, and are free from trash. The plan shall provide for the inspection of all practices at least once every three years and shall identify the means by which the County will keep the practices properly maintained. The County shall submit documentation in its annual reports identifying the practices inspected, the number of maintenance inspections performed, the County's inspection schedules, the actions used to ensure compliance, and any other relevant information.

ii. Non-County Owned and Operated Practices

In conjunction with updating of relevant ordinances and policies, as required by COMAR 26.17.02, the County shall develop accountability mechanisms to ensure maintenance of stormwater control measures on non-County property. Those mechanisms may include combinations of deed restrictions, ordinances, maintenance agreements, or other policies deemed appropriate by the permittee. The County must also include a long-term maintenance verification process, which may include County inspections, 3rd party inspections, owner/operator certification on a frequency deemed appropriate by the permittee, and/or other mechanisms.

5. Monitoring

Within Section IV.F ("Assessment of Controls"):

Assessment of controls is critical for determining the effectiveness of the NPDES stormwater management program and progress toward improving water quality. The County shall use chemical, biological, and physical monitoring to assess watershed restoration efforts, document BMP effectiveness, ~~or~~ and ~~calibrate water quality models for showing~~ track progress toward meeting benchmarks, milestones and final deadlines for attainment of any applicable WLAs developed under EPA approved TMDLs identified above. ~~Additionally, the County shall~~

~~continue physical stream monitoring in the Black Branch watershed to assess the implementation of the latest version of the *2000 Maryland Stormwater Design Manual*. Specific monitoring requirements are described below.~~

Within 2 years of the effective date of this permit, the County shall develop, public notice, and submit to MDE for review and approval a monitoring program sufficient to demonstrate compliance with all provisions of this permit, including TMDL restoration plans, wasteload allocations, milestones, and benchmarks. The program shall include water quality monitoring and may be supplemented by modeling. The program will be incorporated into the permit as enforceable provisions via a major modification. The County shall fully implement the program upon MDE approval.

For water quality monitoring, the number of samples, sampling frequencies, and number and locations of sampling sources must be adequate to ensure data are statistically significant and interpretable for all County water bodies. This monitoring must also be adequate to determine if improvement in water quality is being attained in order to make modifications to relevant management programs as necessary.

If the County chooses to use modeling (including modeling based on volume reduction achieved by impervious surface restoration) to supplement its water quality monitoring efforts, the County shall show that its chemical and physical monitoring provides accurate representations of water quality conditions sufficient to calibrate its model(s). In its annual report to MDE, the County shall describe how it has calibrated its model(s) with monitoring.

The County shall evaluate the implementation of the program in its annual report and make adjustments to its monitoring and modeling programs if their results are found at any point to be inaccurate or insufficiently representative.

6. Public Participation in Restoration Plans and Stormwater Management Programs

Within Section IV.E.3. ("Public Participation," within the section on Restoration Plans):

Prince George's County shall provide continual outreach to the public regarding the development of its watershed assessments and restoration plans. Additionally, the County shall allow for public participation in the TMDL process, solicit input, and incorporate any relevant ideas and program improvements that can aid in achieving TMDLs and water quality standards. Prince George's County shall provide:

a. Notice in a local newspaper and the County's web site outlining how the public may obtain information on the development of watershed assessments and stormwater watershed restoration plans and opportunities for comment;

b. Procedures for providing watershed assessments and restoration plans to interested parties upon request;

c. A minimum 30 day comment period before finalizing watershed assessments and stormwater watershed restoration plans;

d. A public hearing at least 30 days before finalizing restoration plans upon request;

e. ~~d.~~ A summary in each annual report of how the County addressed or will address any material comment received from the public.

Within Section IV.D ("Management Programs," within the section on Stormwater Management Programs) – a new section titled "Public Participation":

7. Public Participation

The County shall provide continual outreach to the public regarding the development of its stormwater management programs. Additionally, the County shall allow for public participation and input in the development of any plans or programs developed pursuant to this section. Prince George's County shall provide:

a. Notice in a local newspaper and the County's web site outlining how the public may obtain information on the development of its stormwater management programs and opportunities for comment;

b. Procedures for providing any written plans developed pursuant to this section to interested parties upon request;

c. A minimum 30 day comment period before finalizing any plans or programs developed pursuant to this section;

d. A public hearing at least 30 days before finalizing such plans or programs;

e. ~~d.~~ A summary in each annual report of how the County addressed or will address any material comment received from the public.

7. Maximum Extent Practicable

Section IV.D ("Management Programs"):

The following management programs shall be implemented in areas served by Prince George's County's MS4. These management programs ~~are~~ shall be designed to control stormwater discharges to the maximum extent practicable (MEP) and shall be maintained for the term of this permit. Additionally, these programs shall be integrated with other permit requirements to

promote a comprehensive adaptive approach toward solving water quality problems. The County shall modify these programs according to needed program improvements identified as a result of periodic evaluations by MDE to ensure that the County is in fact reducing its discharge of pollutants to the MEP.

8. Other Management Program Issues

Within Section IV.D ("Management Programs"):

- IV.D.1.a.i. Complying with the Stormwater Management Act of 2007 (Act) by implementing environmental site design (ESD) to the MEP, as defined by the Act and implementing regulations, for new and redevelopment projects
- IV.D.1.b.iii. Number of stormwater exemptions issued, including the justification for the exemption and associated pollutant load; and
- IV.D.1.b.iv. Number and type of waivers received and issued, including those for quantity control, quality control, or both. Multiple requests for waivers may be received for a single project and each should be counted separately, whether part of the same project or plan. The total number of waivers requested and granted for qualitative and quantitative control shall be documented, along with the justification for the waivers and associated pollutant load.

9. Trash and Litter

Within Section IV.D.4 ("Trash and Litter"):

- IV.D.4.a. Within one year of permit issuance, the County shall inventory and evaluate all current trash and recyclable pick-up operations, litter control programs, and public outreach efforts and issue a report of the findings as required in Part V. The ~~analysis~~ report shall identify opportunities for improving overall efficiency, especially in the Anacostia River watershed, which the County shall implement.

10. ESD Code Changes and Deadlines

Within Section IV.D.1.a:

a. Implementing the stormwater management design policies, principles, methods, and practices found in the latest version of the *2000 Maryland Stormwater Design Manual*. This includes:

i. Complying with the Stormwater Management Act of 2007 (Act) by implementing environmental site design (ESD) to the MEP for new and redevelopment projects;

ii. Tracking the progress toward satisfying the requirements of the Act and identifying and reporting annually the problems and modifications necessary to implement ESD to the MEP; ~~and~~

iii. Within one year of permit issuance, reviewing existing planning and zoning and public works ordinances and other codes to identify impediments to, and opportunities for promoting, the implementation of ESD to the MEP;

iv. Within two years of permit issuance, modifying ordinances and codes identified above to eliminate impediments to and opportunities for promoting the implementation of ESD to the MEP; and

~~iii.~~ v. Reporting annually the modifications that have been made or need to be made to all ordinances, regulations, and new development plan review and approval processes to accommodate the requirements of the Act.