Maryland Department of the Environment
Water and Science Administration

Basis for Final Determination to Issue the General Permit for Discharges from Small Municipal Separate Storm Sewer Systems

GENERAL DISCHARGE PERMIT NO. 13-IM-5500
GENERAL NPDES NO. MDR055500

Final Determination: April 27, 2018
Effective Date: October 31, 2018
Expiration Date: October 30, 2023

Executive Summary

The Maryland Department of the Environment (MDE) has issued a Final Determination regarding the General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-IM-5500, and General NPDES No. MDR055500. The federal Clean Water Act (CWA) and Code of Federal Regulations (CFR), and numerous guidelines of the United States (U.S.) Environmental Protection Agency (EPA) provide the legal framework for permit requirements. In addition, this permit relies on long established Statewide programs under the Environment Article, Annotated Code of Maryland, Code of Maryland Regulations (COMAR), and policies and guidelines of MDE to comply with the goals of the CWA.

EPA has authorized MDE as the permitting authority responsible for issuing NPDES MS4 permits in the State of Maryland. MDE issued the first generation MS4 general permit on April 14, 2003, which has been administratively continued since its expiration in 2008. Presently, 19 municipalities and two counties are covered under this permit. The second generation MS4 general permit will expand coverage to 29 municipalities and six counties in the State of Maryland. Affected MS4 jurisdictions are identified in the permit. A copy of the permit is available on MDE's website at the link: www.mde.maryland.gov/programs/Water/StormwaterManagementProgram/Pages/NPDES_MS4_New.aspx

Conditions of the permit are effective for a five-year term unless administratively continued by MDE. This final determination permit will require implementation of stormwater management programs to improve water quality and control the discharge of pollutants into and through MS4s. Compliance with the permit will support Maryland's broader goals of improving local water quality and contribute to long-standing efforts to restore the Chesapeake Bay.

Section I of this document examines the regulatory framework under the CWA, federal regulations, and State laws that form the basis of the permit requirements. A brief description of small MS4 program accomplishments and water quality goals is also provided. Section II addresses comments received during the public process and describes any clarifications necessary in the permit. Each of these factors has contributed to MDE's process for finalizing conditions in the permit as well as this Basis for Final Determination.

SECTION I: Background

NPDES MS4 Permits

The EPA promulgated National Pollutant Discharge Elimination System (NPDES) regulations to address stormwater discharges in two phases as required by section 402(p) of the CWA. The first regulation, known as the Phase I Rule, was published in the federal register (FR) on November 16, 1990 (55 FR No. 222). The rule established application requirements for designated Phase I MS4s to obtain NPDES permits.

The Phase I requirements applied to stormwater discharges associated with 11 categories of industrial activity and to MS4s serving populations of 100,000 or more. Ten counties and the Maryland Department of Transportation, State Highway Administration are regulated through individual NPDES stormwater permits under the Phase I program. These are considered priority sources that necessitate comprehensive stormwater programs to minimize the discharge of pollutants and improve water quality. While smaller cities and towns, and State and federal agencies often had significant MS4s located within these Phase I jurisdictions, they were not affected by the Phase I NPDES regulations.

The EPA published the Phase II Rule on December 8, 1999 (64 FR No. 235). The rule designated additional sources of stormwater discharges from small MS4s to be covered under NPDES permits. Small MS4 general permit requirements are outlined in 40 CFR § 122.34(b) and include the implementation of six minimum control measures (MCMs). These MCMs are public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site stormwater runoff control, post construction stormwater management, and pollution prevention and good housekeeping.

The compliance target for implementation of the six MCMs is established under 40 CFR § 122.34(a), which states that "the NPDES permitting authority must include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and satisfy the appropriate water requirements of the Clean Water Act." This is known as the "MS4 permit standard." EPA did not provide a precise definition of MEP to allow maximum flexibility in permitting.

Federal regulations direct the permitting authority to determine the MS4 permit standard based on best professional judgment and consideration of available information when writing permit conditions (64 FR 68754). Accordingly, MDE's Final Determination considered the following information in issuing Maryland's second generation small MS4 permit:

- Regulating new small MS4s based on the 2010 U.S. Census
- Phase II Remand Rule regulation changes (81 FR No. 237, December 9, 2016)
- Chesapeake Bay and local total maximum daily loads
- Small MS4 program implementation: EPA audits and MDE annual report reviews
- Comments received during the tentative determination process

Regulated Small MS4s and MDE Designation Criteria

MDE issues general permits to provide coverage for regulated small MS4s. Designated municipalities must submit a Notice of Intent (NOI) in accordance with instructions in the permit. MS4s have options for compliance that can include cooperative relationships or partnerships to meet permit requirements. MDE encourages these options so that water quality improvement efforts can be coordinated and enable cost effective implementation for permit compliance.

MDE designation for the first generation permit

Designation criteria in the first MS4 general permit applied to small MS4 operators located within urbanized areas identified in Appendix 6 of the Phase II regulations in accordance with 40 CFR § 122.32(a)(1). In addition, 40 CFR § 123.35(b)(2) requires the permitting authority to develop a process to designate additional small MS4s located outside of urbanized areas whose discharges have the potential to result in an exceedance of water quality standards or other significant water quality impacts. A total of 55 jurisdictions submitted an NOI to apply for coverage under the State's first small MS4 general permit. Numerous small municipalities located within Prince George's, Carroll, and Montgomery Counties later became co-permittees with their respective county. At the end of the permit term, a total of 19 municipalities and two counties remained covered under the first generation small MS4 general permit.

MDE designation for the second generation permit

The criteria for regulating small MS4s in the second generation permit are based on federal regulations. MS4 operators required to apply for coverage include those:

1. Located within urbanized areas as determined by the 2010 U.S. Census Bureau; and

2. Located in non-urbanized areas designated by MDE, based on federal regulations under 40 CFR § 122.26(a)(9)(i) and 123.35(b)

The U.S. Census urbanized area in Maryland expanded in 2010. As a result, a total of 29 municipalities and six counties meet the criteria above for requiring permit coverage. Urbanized area maps as determined by the U.S. Census Bureau can be found at the website: www.epa.gov/npdes/urbanized-area-maps-npdes-ms4-phase-ii-stormwater-permits.

Phase II Remand Rule

On December 9, 2016, the EPA published regulation changes affecting NPDES small MS4 general permits, known as the "Remand Rule" (81 FR No. 237). The new rule was promulgated in response to a remand from the U.S. Court of Appeals for the Ninth Circuit in *Environmental Defense Center et al. v. EPA*. The Court determined that provisions of the Phase II regulations lacked opportunity for public comment on NOIs submitted by MS4 permittees. In addition, the Court found that Phase II regulations must be revised to preclude permittees from determining on their own the actions necessary to meet the MS4 permit standard. The Court emphasized that the

permitting authority is responsible for establishing requirements that meet the standard of reducing pollutants to the MEP.

The Remand Rule under 40 CFR § 122.34(a) specifies that "the NPDES permitting authority must include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality and satisfy the appropriate water requirements of the Clean Water Act." The preamble to the rule (81 FR 89333 – 89334) explains that these revisions were placed to "reinforce the fact that the permitting authority is the entity responsible for establishing the terms and conditions necessary to meet the MS4 standard." In addition, this regulation specifies that permit requirements "must be expressed in clear, specific, and measurable terms."

The preamble to the final rule clarifies that while federal regulations specify the minimum elements to be addressed in permits, these minimum elements are not sufficient for meeting the MS4 permit standard (81 FR 89342). The preamble also provides examples of language that *would not qualify* as "clear, specific, and measurable" (see 81 FR 89335) and include:

- "Permit provisions that simply copy the language of the Phase II regulations verbatim without providing further detail on the level of effort required."
- "Permit requirements that include 'caveat' language, such as 'if feasible,' 'if practicable,' 'to the maximum extent practicable,' and 'as necessary' or 'as appropriate' unless defined. Without defining parameters for such terms…this type of language creates uncertainty as to what specific actions the permittee is expected to take, and is therefore difficult to comply with and assess compliance."
- "Permit requirements that lack a measurable component, for instance, permit language implementing the construction minimum control measure that requires inspections 'at a frequency determined by the permittee' based on a number of factors. This type of provision includes no minimum frequency that can be used to measure adequacy and, therefore, would not constitute a measurable requirement for the purposes of the rule."
- "Provisions that require the development of a plan…but does not [sic] include details on the minimum contents or requirements for the plan, or the required outcomes, deadlines, and corresponding milestones."

To address the regulatory changes in the Remand Rule and associated guidance, MDE has developed its second generation MS4 general permit to meet the "Comprehensive General Permit" option as provided in CFR, which has been approved by EPA. MDE has established clear, specific, and measureable terms and conditions using available information to develop requirements that meet the standard of reducing pollutants to the MEP. Public participation requirements have been met according to Maryland's Administrative Procedures Act (APA) and during the public review process.

Chesapeake Bay and Local Total Maximum Daily Loads

The EPA established the Chesapeake Bay total maximum daily load (TMDL) in 2010 for the six Chesapeake Bay States (Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia) and the District of Columbia. The TMDL describes the level of effort necessary to

reduce pollution, meet water quality standards, and restore the Chesapeake Bay. Under 40 CFR § 122.44(d)(1)(vii)(B), MDE is required to issue NPDES permits to point source discharges that are consistent with the assumptions and requirements of any applicable TMDL. In addition, 40 CFR § 122.34(c) of the Phase II rule states that small MS4 general permits must include more stringent terms and conditions based on approved TMDLs, or where the permitting authority determines such terms and conditions are required to protect water quality.

MDE relies on Maryland's Phase II Watershed Implementation Plan (WIP), which has been approved by EPA, for establishing consistent NPDES permit requirements to address the Chesapeake Bay TMDL goals. The WIP incorporates a scientific model to estimate pollution loads from major pollutant source sectors (e.g., wastewater treatment plants, agriculture, stormwater) that contribute to the Chesapeake Bay's water quality impairment. Maryland's WIP has established the 20% impervious area restoration requirement as a key strategy for the stormwater sector to achieve the necessary nutrient and sediment load reductions to meet the Chesapeake Bay TMDL by 2025.

In keeping with the WIP strategy, this permit will make progress toward reducing urban stormwater pollution by requiring small MS4s to commence restoration efforts for 20% of existing impervious areas that have little or no stormwater management. The restoration programs developed under this permit will provide stormwater controls proven to reduce nutrients, sediments, and other pollutants such as PCBs, bacteria, mercury, and chlordane. Compliance with restoration criteria in the permit constitutes adequate progress toward compliance with Maryland's receiving water quality standards and EPA approved stormwater WLAs for the Chesapeake Bay and local TMDLs.

Phase II Program Implementation: EPA Audits and MDE Annual Report Reviews

MDE uses an iterative process where future small MS4 permits are informed by current conditions. Permit requirements are updated over time in order to achieve reasonable progress toward attainment of water quality standards. This second generation permit has been developed to incorporate findings from program implementation by the small MS4 community during the first generation permit. Likewise, new permit requirements have been informed by EPA audits of thirteen small MS4 programs in Maryland performed between 2013 and 2015.

Among the common issues noted during EPA audits was a lack of standard operating procedures (SOPs) for illicit discharge detection and elimination and for good housekeeping practices at public works facilities. In addition, inspection frequency and enforcement for construction sites and stormwater best management practice (BMP) maintenance needed improvement. Other common issues were incomplete storm drain system maps and inconsistent annual report submittals to MDE.

MDE used information from the EPA audits to provide greater guidance and clarity to the small MS4 community during annual report reviews. As a result, the quality of annual reports has improved, reflecting an improvement in program implementation. Specific areas of progress include more complete storm drain system mapping, more widespread adoption of SOPs, and

improved facility database tracking, which has led to more frequent field inspections and more effective BMP performance.

MDE's evaluation of Phase II program implementation along with the mandate to provide greater specificity required under the Remand Rule have been used to develop Maryland's second generation permit. Clear, specific, and measureable terms and conditions have been established in the permit, which outline the requirements necessary to meet the MS4 permit standard. A reporting form has been provided in the permit to clarify the specific information required to be submitted to MDE to demonstrate compliance with the permit. Therefore, MDE has developed this permit to build on past efforts, craft more specific requirements, and incorporate impervious area restoration to improve water quality and meet the goals of the CWA.

SECTION II: MDE Response to Public Comments on Tentative Determination Permit

Administrative Procedures and Public Process

The Tentative Determination to issue the small MS4 general permit was made on December 22, 2016. Public notices of MDE's Tentative Determination appeared in the Washington Post on December 22 and 29, 2016, and in The Baltimore Sun and eleven additional regional newspapers published throughout the State of Maryland on December 23 and December 30, 2016, as required by Maryland's Administrative Procedures Act (APA). Additionally, MDE maintains an interested party list for NPDES MS4 permits that include federal, State, and local municipal officials, and numerous citizens of the State of Maryland. Individuals on this list were notified of the Tentative Determination on December 22, 2016.

Subsequent to the notification of the Tentative Determination, MDE held a public hearing on February 6, 2017, to accept testimony and comment regarding the draft permit. At the hearing, testimony was given by one representative from each of the following: Cecil County, Queen Anne's County, the Maryland Municipal Stormwater Association, and the Chesapeake Bay Foundation. The official transcript of the proceedings was furnished by For The Record, Inc., and is available on MDE's website.

After the hearing, the public record regarding the draft permit remained open until March 30, 2017, to accept further comment in accordance with the APA. Comments were received during this time from the Town of Boonsboro; the Cities of Aberdeen, Frederick, Gaithersburg, and Hagerstown; the Counties of Allegany, Calvert, Cecil, Queen Anne's, St. Mary's, and Washington; the Maryland Department of Agriculture; joint comments from Maryland Municipal Stormwater Association, Maryland Association of Counties, and Maryland Municipal League (together, "the Associations"); the Chesapeake Bay Foundation; and the Maryland League of Conservation Voters. The comments offered a wide range of perspectives and questions on the draft permit.

This section further explains MDE's rationale for finalizing the requirements in the permit based on comments received during the public process. Notable issues that were raised included MDE's designation process for regulating small MS4s outside of urbanized areas, the regulated permit area and scope, impervious area restoration, the MEP standard, cost, details of specific management program requirements, and numerous unique comments specific to individual jurisdictions. MDE's responses to these comments are provided below.

Designation of Small MS4s

Federal regulations specify that small MS4s located within an urbanized area are automatically regulated under the NPDES program in accordance with 40 CFR § 122.26(a)(9)(i)(A), and 122.32. This is referred to as nationwide designation. A majority of the counties and municipalities with small MS4s designated for regulation under Maryland's general permit are in this category. Additional geographic areas and five municipalities outside of the urbanized areas have also been designated through the use of MDE's designation criteria, based on water

quality evaluations that are consistent with guidance provided in 40 CFR § 122.26(a)(9) and 123.35(b). The following discussion addresses a comment requesting more information on MDE's designation process for MS4s located in non-urbanized areas. This process includes developing water quality based criteria and application of these criteria to certain small MS4s.

1. MDE water quality criteria

   MDE's designation criteria in non-urbanized areas used existing water quality data gathered through the State's TMDL program and the Maryland Biological Stream Survey (MBSS) to evaluate water quality impairments from discharges of small MS4s. MDE developed water quality based criteria and a process to evaluate small MS4s to determine:

   - Whether a stormwater discharge results in or has the potential to result in exceedances of water quality standards; or
   - Whether a stormwater discharge results in or has the potential to cause other significant water quality impacts including habitat or biological impacts.

   Developed lands located outside of urbanized areas may discharge stormwater runoff that contributes to exceedances of water quality standards or local water quality impacts. Stormwater discharges from developed lands result in impairments, stream channel erosion, or biological and habitat degradation. MDE evaluated local and Chesapeake Bay TMDLs with stormwater WLAs to determine if small MS4s are contributing to exceedances of water quality standards or have the potential to cause other significant water quality impacts. The MBSS evaluated stream impairments and water quality through physical habitat assessment as well as biology and geomorphology sampling. Available MBSS data show that streams receiving runoff from urban developed lands often experience degradation to biological communities. These evaluation techniques were used systematically by MDE for determining existing or potential water quality impairments for designating small MS4s for regulation under the permit.

2. Application of water quality criteria to non-urbanized areas

   MDE applied its water quality criteria to small MS4s located outside of an urbanized area as follows:

   a. *At a minimum, small MS4s with populations greater than 10,000 and a density of 1,000 people per square mile outside of urbanized areas*

      Federal regulation under 40 CFR § 123.35(b)(2) specifies that States, at the minimum, must evaluate small MS4s with a population of 10,000 or more and a density of 1,000 people per square mile as part of the designation process.

b. *Small MS4s next to or located within existing jurisdictions regulated under Phase I MS4 permits*

One objective of the Phase II program is to address geographic gaps in coverage within the NPDES stormwater program's regulatory scheme (64 FR 68734). These gaps occur where small unregulated MS4s are next to or located within areas covered by the Phase I program. The preamble of the Phase II Rule states in 64 FR 68737 that these geographic gaps in coverage create "an equity problem because similar discharges may remain unregulated even though they may cause or contribute to the same adverse water quality impacts." A reversal of the progress of Phase I programs and exceedances of water quality standards may occur if these small MS4s remain unregulated.

c. *Geographic areas under a local government's authority for counties that operate MS4s within urbanized areas*

Certain small MS4s designated for permit coverage are partially located within urbanized areas. Under 40 CFR § 122.32, only the portion of the small MS4 that is located within the urbanized area is automatically designated. However, the State can designate small MS4s or portions of small MS4s as authorized under 40 CFR § 123.35(b)(2). Regulations under 40 CFR § 122.26(a)(9)(i)(D) authorize MDE to determine "the discharge, or category of discharges within a geographic area that cause a violation of water quality standards or is a significant contributor of pollutants to waters of the U.S."

The designation process described above is consistent with federal regulations and the goals and intent of the NPDES Phase II Rule. Small MS4s with a high potential of discharging pollutants and impacting water quality have been evaluated for designation under the NPDES program. Those requiring coverage under these designation criteria are listed in the general permit.

3. Additional comments related to designated MS4s

a. *MDE's authority and designation of small MS4s*

A comment was submitted expressing concern that "[t]he federal regulations clearly state that the water quality-based criteria developed by the permitting authority should be *applied to localities with larger populations*" and that "[t]he inclusion of certain extremely small communities (for example, the Town of Emmitsburg, with a population of 3,504) suggests that this step was not taken."

This comment does not reference the full context of the language in this regulation. The regulation requires States to "[a]pply such criteria, *at a minimum* [emphasis added], to any small MS4 located outside of an urbanized area serving a jurisdiction with a population density of at least 1,000 people per square mile and a population of at least 10,000." The term "*at a minimum*" indicates that this regulation does not preclude the State from evaluating other MS4s outside of the urbanized area with a smaller population or density.

Another comment questioned MDE's designation process because of the inclusion of small towns such as Emmitsburg (population 3,504). The context of federal regulations provides further clarity on this issue. For example, Appendix 6 of the Phase II rule provides a list of numerous small towns within the State of Maryland that are subject to the final rule. Many of these towns were even smaller than Emmitsburg's population at the time of the final rule. As an example, the Town of Smithsburg (population 2,192 in year 2000) was automatically designated because it was located within an urbanized area. Because EPA did not discount small towns when determining nationwide criteria, MDE has in turn evaluated small towns for application of MDE's designation criterion. As discussed above, state-wide designation is based on the potential to cause or contribute to water quality impacts and this is consistent with regulations under 40 CFR § 123.35(b)(2).

b. *Waivers*

The federal Phase II regulations specify that the permitting authority may waive permit coverage for small MS4s designated under the nationwide designation under certain conditions [40 CFR § 122.31(d)]. MDE preemptively used the following federal waiver criteria to evaluate several categories of small MS4s for applicability to the waiver process:

- An MS4 that serves a population of less than 1,000 within the urbanized area, and does not contribute substantially to the pollutant loadings of a physically interconnected regulated MS4 jurisdiction, and for which stormwater controls are not needed based on wasteload allocations (WLAs) in an EPA approved or established TMDL; or

- An MS4 that serves a population of less than 10,000 and the permitting authority has evaluated receiving waters and has determined that additional stormwater controls are not needed for such waters based on WLAs associated with an EPA approved TMDL and that future discharges from the MS4 do not have the potential to result in exceedances of water quality standards or other significant water quality impacts.

Charlestown, Woodsboro, and Hebron

MDE determined that all towns with a population less than 1,000 within urbanized areas qualify for waivers. Additionally, the Towns of Charlestown, Woodsboro, and Hebron were evaluated by MDE because they are slightly over the 1,000 population threshold. MDE performed a modeling analysis on nutrient and sediment load contributions to local waterways and determined that these three towns do not contribute substantially to local TMDLs and discharges are not likely to impact local water quality. Therefore, each of these towns qualifies for a waiver.

Delmar and Fruitland

The jurisdictions of the Town of Delmar and the City of Fruitland were evaluated by MDE for waiver eligibility due to their location within a newly designated County (i.e., Wicomico County).

A local TMDL analysis performed for Johnson Pond showed that the total urban load contribution to the pond was 10% and the Town of Delmar's portion of that load was insignificant. Based on these modeling results, MDE determined that the Town's stormwater discharge does not impact local TMDLs. In addition, MBSS data collected from 2007 to 2016 showed that local streams have consistently met aquatic life criteria for fish and other stream biota during this ten-year sampling period. These data indicated that Delmar is eligible for a waiver.

A local TMDL analysis was performed for the City of Fruitland's contribution to the Tony Tank reservoir that used data from the Phase 6 Chesapeake Bay Watershed Model. This analysis indicated that the City contributes 39% of the urban total phosphorus load to the reservoir. These data indicated that Fruitland is not eligible for a waiver.

Boonsboro

The Town of Boonsboro submitted a request to be considered for a waiver from permit coverage. In order to address Boonsboro's request, MDE relied on water quality data collected for the report, *Biological Stressor Identification Analysis for Biological Impairment of the Antietam Creek Watershed*, which is available on MDE's website. The field data showed high chlorides, high conductivity, and moderate to severe stream channel erosion are present in the stream immediately below the Town indicating that stormwater discharges are contributing to water quality impacts. Based on the available data, MDE determined that the Town does not qualify for a waiver.

c. *Jurisdictions with combined sewer systems*

In addition to the above waiver criteria, small MS4s that discharge stormwater combined with municipal sewage (i.e., combined sewer systems) are not subject to MS4 requirements in accordance with 40 CFR § 122.26(a)(7). The City of Cumberland, the Town of Frostburg, Allegany County, and the City of Cambridge each has a combined sewer system and is therefore not subject to MS4 requirements at this time.

d. *Designated MS4s and opportunity to comment through public process*

One comment suggested that permittees have not had an opportunity to question their designation status.

MDE published notice of the tentative determination permit on December 22, 2016, which included a list of municipalities affected by the permit. According to Maryland's Administrative Procedures Act (APA) and the tentative determination process, each small

MS4 jurisdiction has had the opportunity to participate in a public hearing, a municipal information meeting, and submit comments during the public comment period. Several permittees have commented through this process and some have questioned their inclusion in the permit as well as requested waivers.

Regulated Permit Area and Program Implementation

Counties and municipalities designated for coverage under the permit are identified in Table A.1 in Appendix A of the permit. Several permittees requested clarity regarding MDE designation within urbanized areas. Comments referenced 40 CFR § 122.32(a)(1) that state: "If your small MS4 is not located entirely within an urbanized area, only the portion that is within the urbanized area is regulated" as justification that the permit should only apply to the portions of an MS4 located in the urbanized area. Nevertheless, those commenting on this issue assert that small MS4s should be allowed to implement restoration projects beyond the urbanized area to meet the permit conditions.

1. Regulated permit area

   Federal regulations give states broad authority when designating MS4s outside of urbanized areas. Specifically, 40 CFR § 122.26(a)(9)(i)(D) authorizes a state to designate "the discharge, or category of discharges within a geographic area, [that] contributes to a violation of water quality standard or is a significant contributor of pollutants to waters of the United States." Furthermore, EPA's preamble to 40 CFR § 122.26 stated that this geographic approach provides opportunities for implementing the most cost effective controls across a municipality or county and should be considered by the states when defining the extent of the MS4. Therefore, MDE determined the geographic area to be regulated by applying water quality based criteria to certain MS4s as discussed in the previous section of this document, entitled "Designation of Small MS4s."

   The geographic area permit approach is consistent with EPA's regulatory intent for implementing the MS4 program. Further, the Phase I preamble noted that "EPA is convinced that the definition of municipal separate storm sewers should possess…a mechanism that enables States…to define a system that best suits their various political and geographical conditions" (55 FR 48039). EPA recognized that effective control of stormwater discharges would require authority over local land use decisions and other locally administered programs and that states should have the flexibility to include in MS4 permits areas where this local authority exists.

   Local governments oversee plans and permits for all land development projects, public and private, within their geographic boundaries (except State and federal projects) for many reasons, including the safe and stable conveyance of stormwater runoff. Infrastructure requirements and local procedures include, but are not limited to, roadway system design, drainage, best management practices, stormwater easements; and maintenance. Additionally, federal regulations allow incorporation of existing qualifying programs that meet certain permit requirements in accordance with 40 CFR § 122.34(e). As such, the general permit

allows permittees to utilize existing local erosion and sediment control and stormwater management programs for compliance with permit requirements. Other programs that are implemented across the entire geographic area of a local government includes: employee training, public participation and education, procedures to address illegal dumping, public hotlines and emergency response, and good housekeeping plans at municipal facilities to prevent pollution discharges and protect water quality. The permit conditions will enable local governments to integrate these programs and policies to address systemic water quality impacts associated with urban stormwater runoff throughout a local government's geographic boundary.

EPA's intent was further articulated in the preamble (55 FR 48039) where the agency "did not propose to define the scope of a municipal separate storm sewer system in engineering terms because of practical problems determining the boundaries of and the populations served by 'systems' defined in such a manner. An engineering approach based on physical interconnections of storm sewer pipe[s] by itself does not provide a rational basis for developing a stormwater program to improve water quality where a large number of individual storm water catchments are found within a municipality." Therefore, MDE used the broad authority in CFR to designate MS4s outside of urbanized areas, based on water quality impacts associated with stormwater runoff. Application of these criteria, as discussed in "Designation of Small MS4s," is an individual process that defines the regulated area for permittees designated by MDE.

2. Application of permit requirements within the jurisdiction

   a. *Impervious area baseline calculations*

      Commenters noted above requested to remove untreated impervious acres from their baseline that do not contribute "to the MS4 owned or operated by the permittee including acres that have sheet-flow to nearby waterbodies."

      Restoration requirements in the permit are based on the strategies outlined in Maryland's WIP for addressing stormwater discharges that impact the Chesapeake Bay. The WIP establishes the load reductions required to meet the Bay TMDL and the EPA has approved the 20% restoration strategy for meeting these targets. Conditions in the general permit must incorporate assumptions in the WIP so that Maryland may achieve the necessary pollution reductions.

      Accordingly, the WIP accounts for all urban stormwater pollution sources that drain to the Chesapeake Bay. As such, runoff from untreated impervious areas from stormwater discharges within the geographic area designated for coverage must be considered for restoration. This approach is consistent with the designation criteria described in 40 CFR § 122.26(a)(9)(i)(D) authorizing MDE to regulate a category of discharges within a geographic area that "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States."

Impervious areas that discharge to vegetated areas that maintain sheetflow conditions may be subtracted from a permittee's baseline. The permit specifies the documentation necessary to verify that these areas are adequately treated in order to be excluded from impervious area baselines. Other areas that may be subtracted from baselines include those addressed under a different NPDES stormwater discharge permit or meet other criteria described below.

b. *Impervious area baseline calculations should consider urbanized area*

Some counties designated for coverage under the permit expressed concern that the baseline impervious area must be calculated based on the total county land area. This concern predominantly applies to the counties because most cities and towns designated for permit coverage are almost entirely located within the urbanized area. While MDE has determined that the counties commenting on this issue will be designated within the geographic area they have authority, the preamble to the Phase II regulations specifies that permit conditions may be tailored to individual watersheds or urbanized areas (64 FR 68737). The analyses provided by several of the small MS4 counties warrant tailoring restoration requirements to urbanized areas at this time. Therefore, permittees located in an urbanized area may determine restoration requirements based on the imperviousness within the urbanized area. This determination is consistent with MDE's intent to use this permit term to ramp up impervious area restoration programs. This flexibility is clarified in the permit.

c. *Credit toward impervious area restoration jurisdiction-wide*

The small MS4 counties requested flexibility to implement BMPs jurisdiction-wide to meet their restoration requirements. Stormwater pollution from all impervious areas not treated to the MEP causes or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts. As a result, pollution control programs and restoration projects implemented throughout a jurisdiction will address water quality impairments caused by stormwater pollution. This flexibility is reasonable and is consistent with the program approach for designated permittees. Examples of BMPs applicable to this approach include stream restoration projects, shoreline management, tree planting in open spaces and floodplains, and stormwater retrofits and redevelopment projects on private property. MDE allows restoration credit for these BMPs anywhere within the jurisdiction.

Impervious Area Restoration Requirements

The permit requires the development of restoration programs to make progress toward reducing urban stormwater pollution. Permittees are required to commence efforts to restore 20% of existing impervious areas that have little or no stormwater management. This requirement addresses federal regulations under 40 CFR § 122.44(d)(1)(vii)(B) and 122.34(c) that specify that small MS4 general permits shall include terms and conditions consistent with approved TMDLs or water quality concerns. Comments related to this permit condition are addressed below.

1. The impervious area restoration requirement as a surrogate for meeting WLAs

Environmental advocacy groups questioned whether the 20% impervious area restoration strategy is an appropriate method for achieving stormwater WLAs. Specifically, one commenter stated that the "permit should include a quantitative evaluation of the current loading of nitrogen, phosphorus and sediment to establish a baseline and require numerical pollution reduction in accordance with applicable wasteload allocations for each established TMDL for each receiving water body, including the Chesapeake Bay."

Maryland's Phase II WIP strategy for meeting applicable stormwater WLAs for the Chesapeake Bay for Phase I individual permittees and Phase II permittees is to restore 20% of their impervious surface areas that are not already restored to the MEP. EPA approved Maryland's Phase II WIP, which includes the 20% restoration strategy for addressing stormwater WLAs associated with the Chesapeake Bay TMDL. In addition, EPA approved individual permits to Maryland's Phase I jurisdictions as well as this general permit that incorporate this strategy.

Acceptable BMPs for addressing impervious area restoration requirements are referenced in MDE's 2000 Stormwater Design Manual (the Manual), updated in 2009, and MDE's 2014 *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated*, referred to hereafter as the Accounting Guidance. The Chesapeake Bay Program (CBP) has approved the pollutant removal efficiencies for these BMPs based on available research that documents their effectiveness for reducing nutrients, sediments, and other pollutants associated with local TMDLs. The report *Potential Benefits of Nutrient and Sediment Practices to Reduce Toxic Contaminants in the Chesapeake Bay Watershed* published by Chesapeake Stormwater Network (CSN) in 2015 verifies that stormwater BMPs are also effective for reducing toxic pollutants.

The Maryland State Court of Appeals in *MDE et al. v. Anacostia et al.* recognized that permitting authorities are granted the flexibility to "set controls *they deem necessary* [emphasis added] to reduce the discharge of pollutants to their waters" and affirmed the 20% restoration requirement as a "well developed and vetted strategy." The Court also noted that "MDE chose a standard that relates to the very problem the 20% restoration requirement serves to abate: the increase in stormwater runoff and the discharge of pollutants because of the increase in impervious surfaces."

MDE also relies on the 20% impervious area restoration requirement for small MS4 general permits to simplify reporting and accounting of progress toward water quality improvement. Small MS4 permittees will have a significant learning curve when developing programs from scratch in order to meet this new requirement. Additional requirements to perform modeling methods related to nutrient load analysis will stretch resources further. MDE and the CBP can use the information reported by the small MS4 community to inform more sophisticated models to evaluate water quality improvements and future needs. The permit requirements are structured to enable permittees to direct their resources toward BMP implementation,

which will directly result in the pollutant load reductions that environmental stakeholders desire.

In summary, permittees are required to initiate strategies to implement stormwater BMPs proven to reduce nutrients, sediments, and other pollutants such as PCBs, bacteria, mercury, and chlordane. Utilizing BMPs with specific performance standards and implementation schedules provides assurance that Chesapeake Bay and local TMDLs can be met. MDE has determined that compliance with the 20% impervious area restoration requirement in the permit constitutes adequate progress toward compliance with Maryland's receiving water quality standards and EPA approved stormwater WLAs for the Chesapeake Bay and local TMDLs.

2. Acceptable permit terms and conditions

Environmental advocacy groups raised concern that the permit does not require implementation of any projects within the permit term. Specifically, one commenter stated: "The Draft Phase II Permit does not require any pollution reduction projects to be implemented in the term of the permit itself, which conflicts with the Phase II WIP and is also inappropriate as a permit condition." In contrast, several small MS4 permittees noted the significant amount of time it takes to identify water quality projects, move forward with design plans, and seek funding to construct the projects. For example, one commenter noted: "For this permit term, it might be appropriate, for example, to allow permittees to build up their programs and begin planning restoration projects. Establishing a reasonable level of restoration for the next permit cycle should occur several years down the road when we have a better perspective in the State on the planning process."

With respect to concerns from permittees related to the necessary time needed to plan, design, and construct restoration projects, MDE carefully considered these challenges when drafting the permit. As a result, permit conditions balance the goals of Maryland's Phase II Chesapeake Bay WIP with the reality that it will take years for permittees to identify potential projects for implementation, secure adequate funding, and move forward with the design, permitting, and construction process. In many cases, projects completed by Maryland's Phase I MS4 permittees in recent permit terms were identified in previous permit terms. MDE tailored restoration requirements in the small MS4 general permit to allow the same process and allow time for permittees to develop the necessary resources for effectively completing impervious area restoration requirements.

With respect to concerns related to "inappropriate permit conditions" expressed by environmental stakeholders, MDE relies on federal regulations to develop permit conditions. Specifically, regulations under the Remand Rule changed the language in 40 CFR § 122.34(c), which now states: "[a]s appropriate, the permit will include: (1) More stringent *terms and conditions* including permit requirements that modify, or are in addition to, the minimum control measures based on an approved TMDL or equivalent analysis, or where the Director determines such *terms and conditions* are needed to protect water quality" [emphasis added]. Specifically, the new regulation used "terms and conditions" in place of "effluent limitations." Likewise, the language in 40 CFR § 122.34(a) reflected the same

change. Examples of acceptable terms and conditions specified in § 122.34(a) include "implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions."

To be consistent with the terms and conditions outlined in federal regulations, the permit requires BMP implementation schedules and documentation of proper maintenance of pollution controls, and specifies design and performance standards for these BMPs. Deliverables include a baseline impervious area assessment, a work plan outlining tasks for achieving restoration requirements, and a database that tracks BMP implementation and maintenance. The permit also requires restoration schedules to plan for implementation by 2025 to enable permittees to develop budgets and long-term plans that reflect pollution reduction goals associated with the Chesapeake Bay TMDL.

This approach is consistent with the iterative process EPA describes in the Phase II rule for continually making reasonable progress toward attainment of water quality standards. This iterative approach of working toward water quality standards is affirmed in the ruling in the Ninth Circuit review of federal regulations in *Defenders of Wildlife et al. v. Browner*. The Court reasoned that MS4s are not compelled by section 301(b)(1)(c) of the CWA to meet all State water quality standards. In addition, Maryland's Court of Appeals (*MDE et al. v. Anacostia et al.*) referenced the Ninth Circuit Review and noted that, "MS4s are not subject to the requirement of imposing effluent limitations necessary to meet water quality standards." Therefore, this permit will establish terms and conditions consistent with federal regulations as permittees will make reasonable progress toward achieving TMDLs in accordance with Maryland's WIP strategy for meeting pollution reduction targets by 2025.

3. Restoration requirements and maximum extent practicable (MEP)

Numerous permittees have submitted comments expressing concern with the impervious area restoration requirement. Specifically, these permittees believe that the permit terms are not practical or consistent with the MEP standard. Several permittees have noted that this is the legal compliance standard for MS4s, and one small MS4 county requested this be stated explicitly in the permit.

As noted in the Remand Rule discussion, regulatory changes under 40 CFR § 122.34(a) clarify that "the NPDES permitting authority must include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the MEP, to protect water quality and satisfy the appropriate water requirements of the Clean Water Act." The preamble to the rule (81 FR 89333 – 89334) explains that these revisions were placed to "reinforce the fact that the permitting authority is the entity responsible for establishing the terms and conditions necessary to meet the MS4 standard."

MDE carefully considered how the MS4 community could develop restoration programs, recognizing that it takes time to identify projects and meet local funding needs before moving toward final implementation. MDE included conditions in the permit to enable permittees to focus on long term planning strategies that set the foundation for a successful restoration

program. While the permit does not require water quality improvement projects to be completed within the permit term, the requirements focus on a balanced approach of program development and implementation to improve long-term success.

The permit was written to allow permittees maximum flexibility toward obtaining credit for existing water quality improvement projects. Permittees may take credit dating back to 2006, when the Chesapeake Bay model was calibrated, for projects that meet restoration criteria. Counties may prioritize and calculate impervious area baselines within urbanized areas. This approach meets the intent of the permit to focus on areas that contribute the greatest sources of pollution while allowing flexibility and time for successful program implementation.

Existing small MS4 permittees have submitted information in recent annual reports that document various projects that can receive credit toward the impervious area restoration requirement. These include stream restoration, tree planting, street sweeping, inlet cleaning, shoreline erosion projects, residential connections to wastewater treatment plants, and improved data tracking on redevelopment projects. Many of these voluntary actions were implemented in a good-faith effort to meet local Chesapeake Bay WIPs and these permittees will receive credit for these BMPs toward compliance with the permit.

In summary, the permit requirements are constructed to enable permittees to establish necessary resources for effective and efficient programs, which will improve the success of long-term efforts. For these reasons, MDE has determined that this permit appropriately allows permittees the necessary time and resources to develop programs consistent with an MEP level of effort while ensuring consistency with Maryland's WIP and making continuous progress toward meeting water quality standards. MDE will use information gained under this permit to inform requirements in the next small MS4 general permit consistent with 40 CFR § 122.34(a)(2).

4. Other comments on restoration requirements

   a. *Baseline impervious area analysis and data development throughout the permit term*

      Several permittees requested clarification and expressed concern regarding the impervious acre baseline year and for having to submit an impervious area baseline assessment in year one. Another commenter questioned why the BMP database is required to be submitted in year two.

      The impervious area baseline will reflect the untreated impervious area as of the effective date of the permit. An impervious area baseline is necessary in the first year to inform the planning process, determine resource needs, and form the initial framework for long-term strategies. As new information is available, strategies and funding capabilities will be continuously adapted throughout the permit term. The BMP database is required to be submitted each year in accordance with reporting requirements for impervious area restoration. Permittees can update and improve the database during the permit term, and this is clarified in the permit. The reporting requirements clarify that an updated baseline assessment may be submitted after year 1.

b. *Restoration work plan*

One commenter requested clarity regarding the level of detail that MDE would accept in a restoration work plan and requested additional guidance on developing a custom work plan. The intent of the work plan is to demonstrate progress over the permit term in working toward long-term implementation targets. The level of detail provided in the permit's example work plan is sufficient; however, each permittee should update the work plan throughout the permit term as strategies evolve and progress is made. A permittee may choose to submit a custom work plan that provides greater detail than the example provided by MDE.

c. *Adaptive management*

One small MS4 commenter requested clarity regarding "what adaptive management strategies for BMP implementation" means. As small MS4 programs are developed over the course of the permit term, each permittee will gain experience from the challenges and successes of implementing these programs, such as identifying the most cost effective BMP options, improved budgeting, increased public acceptance, and refining implementation schedules. Adaptive management is the permittee's utilization of these experiences over the course of a permit term to continuously update programs and develop more efficient processes.

d. *Flexibility in implementing restoration requirements*

One small MS4 commenter noted that "[d]evelopment density and geologic conditions limit retrofit opportunities" and that MDE should consider the local constraints that karst conditions place on BMP choice when creating permit requirements.

MDE recognizes the challenges associated with BMP implementation in developed urban areas and areas with unique geology. Considering the diversity of permitted jurisdictions across the State, MDE developed a full range of BMP options for meeting the restoration requirements, including a suite of alternative practices. This list of BMP options is sufficiently broad so that every permittee will be able to use practices that fit unique local characteristics.

e. *BMP database*

One small MS4 county noted that certain fields in the BMP database were redundant and other permittees noted that the structure was complicated. MDE eliminated redundant fields and revised the database format for greater clarity. MDE also created a model Microsoft Excel spreadsheet that offers examples for the small MS4 community on how to fill out the database for various BMP scenarios. The spreadsheet is currently available on MDE's website.

f. *Credit toward impervious surface restoration requirements*

Several permittees had questions on receiving credit toward the impervious surface area restoration requirement. The permit specifies that restoration dating back to 2006 will be allowed for credit toward impervious area restoration. The permit has been clarified that when over-management occurs, credit may be granted consistent with the Accounting Guidance. Likewise, watershed assessments in prior permit terms are acceptable for program development and future implementation plans.

g. *Evaluation of sheetflow conditions and vegetative treatment of stormwater runoff*

One small MS4 county requested clarification regarding the level of analysis required to determine sufficient treatment associated with sheetflow conditions and vegetative treatment. The permit has been clarified to include information on acceptable documentation related to stormwater runoff disconnections to vegetated areas. A geographical information system (GIS) desktop analysis and methodology that can successfully identify sheetflow conditions will be accepted by MDE.

h. *Exclusion of marinas*

One small MS4 county requested clarification that MDE does not expect the county to account for untreated acres associated with marinas.

At marinas that have an industrial stormwater permit, permittees shall include in the baseline any impervious area from non-industrial portions of the property, such as buildings and associated parking.

i. *Documentation of existing BMPs with limited documentation and of new/innovative BMPs*

Several permittees questioned the requirement to provide plans or design specifications for some BMPs. One municipality requested additional information about the process for designating new alternative BMPs.

Additional guidance is under development to receive credit for existing BMPs with missing documentation on construction completion and level of water quality treatment; the guidance will be available on MDE's website when complete. MDE encourages new and innovative BMPs and will review scientific monitoring data provided by the permittees prior to approving new practices for restoration credit. New practices approved by the CBP will be incorporated into the Accounting Guidance and allowed for credit under this permit.

j. *Permit language*

One small MS4 municipality requested that the language in the baseline impervious area restoration requirement be clarified for areas that are partially treated. MDE accepts

BMPs with partial water quality treatment and has determined that the process for calculating this credit is fully explained within the permit.

MS4 Restoration Requirements and Cost

Several environmental commenters and a number of small MS4 communities stated that the 20% impervious area restoration requirement in the draft permit costs too much. Commenters stated that Financial Assurance Plans (FAPs) submitted by Phase I permittees showed that restoration requirements could not be adequately funded by either Phase I or Phase II budgets, and that cost effective BMPs have not been chosen for restoration. Nutrient credit trading was also requested by small MS4 permittees as an option to assist in achieving restoration goals.

1. Funding the 20% impervious surface restoration requirement by Phase I jurisdictions

   Environmental commenters stated that the Phase I MS4 track record in Maryland shows that the restoration of impervious surfaces has proven to be "largely non-implementable among those permittees due to budget and limited throughput capabilities."

   The Phase I MS4 FAPs submitted for FY2016 showed that there was adequate funding for implementing restoration plans. Maryland's FAP law required that each permittee be able to show at least a 75% ability to pay for restoration through local budgeting processes. The amount of revenue to pay for restoration in Phase I MS4s ranged from 75% to 113% of the estimated amount needed, averaging 97% community-wide. Regarding throughput capabilities, the FY2016 MS4 annual reports show that the Phase I community, as a group, have completed 30% of the collective impervious area restoration requirement. Some Phase I MS4 permittees have completed as much as 65% to 85% of their individual restoration obligations.

   Beyond the FY2016 reporting, large Phase I permittees have two more reporting years and medium Phase I permittees have three reporting years left for showing completion of these restoration requirements. In the experience of MDE with prior permitting terms and the FAPs, the capacity to implement restoration projects during a five-year permit term typically ramps up in the latter half of the permit term as the process of planning, design, authorization, and construction of BMPs comes to fruition. Based on this track record, it is likely that several MS4 permittees will meet their restoration requirements during the five-year permit term.

   Environmental commenters used two specific Phase I examples to show how restoration efforts are falling short. In one instance, the commenter noted that "even if the County faithfully complied with the 20% impervious surface restoration as required by the permit, based on the BMPs selected by the County, the County would still only be approximately 5% of the way towards compliance with nitrogen WLAs."

   The county's MS4 permit does not require compliance with a nitrogen WLA. Instead, MDE determined in its WIP that the restoration of 20% of impervious areas by Phase I and Phase II permittees would provide adequate progress toward meeting the Chesapeake Bay TMDL. The Maryland Court of Appeals unanimously supported MDE's decision to set the 20%

restoration requirement as an effective surrogate effluent limit in the Phase I MS4 permits to achieve the Chesapeake Bay TMDL.

The commenters example did not recognize that the initial deficiencies in this particular county's baseline estimate, and not the array of BMPs selected, are the reasons for their shortfalls. The county significantly underestimated its impervious acre baseline in its reporting, thus underestimating the nutrient reductions that would result from its TMDL restoration plans. Specifically, in its FY2016 FAP the county incorrectly proposed an impervious area baseline of 1,013 acres for restoration. As part of MDE's oversight of the county's program, it corrected the analysis in FY2017 and informed the county that the impervious acre baseline is 2,620 acres, or a 158% increase in the amount of impervious acres required for restoration, which would also substantially reduce the nutrient load toward the Chesapeake Bay.

An environmental commenter also noted that one county plans to use stream restoration to meet a significant portion of its restoration requirement. The commenter stated that the "Maryland Department of Environment has identified urban stream restoration and street sweeping as the two least cost-effective urban stormwater best management practices (BMPs), with the practices being anywhere from $2,500 to over $6,000 per POUND [sic] of nitrogen reduction." In this analysis, the commenter references an MDE presentation from 2013 with outdated BMP efficiency and implementation data. Since that time, the CBP has initiated and completed expert panel reports based on more recent scientific research to update urban stormwater BMP efficiencies.

MDE has done a cost analysis of recently implemented BMPs (from FY2016 FAP data) using the new CBP efficiencies. The table below shows the cost of removing one pound of nitrogen by the most commonly used urban stormwater BMPs.

BMP Group	Cost per Acre	Pounds of Nitrogen Reduced[1]	Cost per Pound of Nitrogen
Septic Upgrades	$21,736	7	$3,105
Water Quality Ponds	$20,402	4	$5,100
Infiltration Practices	$42,323	7	$6,046
Filtering Practices	$25,708	4	$6,427
Stream Restoration	$56,363	7	$8,052
ESD Nonstructural Techniques	$66,711	7	$9,530
Mechanical Street Sweeping	$3,596[2]	7	$10,275
Vacuum Street Sweeping	$3,822[2]	7	$10,921
Wetlands	$51,843	4	$12,961
Storm Drain Vacuuming	$6,854[2]	7	$19,585
Impervious Surface Elimination	$139,670	7	$19,953
Step Pool Storm Conveyance	$158,180	7	$22,597
Catch Basin Cleaning	$12,809[2]	7	$36,599
ESD Alternative Surfaces	$382,282	7	$54,612

[1] Pounds of nitrogen reduced based on Chesapeake Bay Program stormwater management pollutant reduction curves or an equivalent impervious acre calculation from the Accounting Guidance

[2] Street sweeping and inlet cleaning are annual practices that have been multiplied by the average lifespan of a structural BMP (20 years) for comparison purposes

These implementation data show that stream restoration and street sweeping costs are moderate in comparison to the full range of BMP options. While MDE prescribes the level of restoration in MS4 permits, the selection of BMPs is purely a local prerogative. There are typically many factors involved in a local government's decisions other than reduction of nutrient runoff toward the Chesapeake Bay; other considerations include accessibility, land ownership, public health, neighborhood beautification, and the removal of other pollutants affecting local streams. In its Accounting Guidance, MDE provides a range of restoration options based on sound science and consistency with the Chesapeake Bay TMDL, and then allows local governments to implement what makes the most sense for their jurisdictions.

2. MS4 restoration and cost to local governments

Some Phase II MS4 entities that commented on the permit looked to the Phase I MS4s in determining that the 20% restoration requirement is too costly. Specifically: "Stormwater restoration projects are very expensive. One need only review the Financial Assurance Plans submitted by the Phase I communities, all of whom are larger and generally better funded than Phase II communities, to conclude that many small MS4 permittees will simply be unable to comply with the restoration term." Several permittees submitted a cost analysis demonstrating the financial impact of the impervious area restoration requirement on local jurisdictions and their ability to provide services to their residents.

In developing cost estimates, some permittees used the 2011 report *Costs of Stormwater Management Practices in Maryland Counties* by King and Hagan. The report indicated that the median cost of restoration per acre of implementation is $55,000. However, MDE's 2016 *Annual Report on Financial Assurance Plans and the Watershed Restoration and Protection Program* referenced by another commenter noted that the cost of restoration per impervious acre by Phase I permittees is $18,704.

The difference in cost information documented indicates that localities may be finding more efficient options for implementing restoration projects. The King and Hagan study referenced older data and implementation of more traditional stormwater BMPs. The FAPs provided more recent implementation data and incorporated alternative BMPs that can be more cost effective, including tree planting, septic upgrades, street sweeping, outfall stabilization, and inlet cleaning.

MDE considered BMP cost relative to the time required by small MS4 permittees to develop restoration programs from scratch and secure adequate funding. The permit has been structured to allow permittees the necessary time to develop programs while exploring cost effective BMP options. Additional strategies to reduce cost or secure funding include homeowner incentives, public private partnerships, collaboration with volunteer watershed groups, the development of stormwater utilities, and partnerships with neighboring MS4 permittees. In conclusion, MDE has determined that the 20% restoration of impervious areas not already controlled to the MEP is attainable by the small MS4 permittees and consistent for making progress toward the Chesapeake Bay TMDL by 2025.

3. Trading as an option to reduce cost

Many Small MS4 permittees requested that trading be allowed as a viable strategy for meeting the permit's restoration requirements. One commenter stated: "If larger, more well-funded counties cannot accomplish this task on the established schedule, we question why MDE would choose to impose the same approach on small cities, towns, and counties, while also denying permittees the ability to use trading as a compliance option."

MDE is actively working to establish a trading program in Maryland as an additional way to help permittees comply with restoration requirements. This approach would allow small MS4 permittees to trade with wastewater treatment plants, farmers, and private property owners implementing BMPs for credit. The permit states: "Trading with other sectors may also be considered as another method to achieve pollutant reductions, once a program has been established, regulations are adopted, public participation requirements are satisfied, and its use is approved by EPA." As stated in the Draft 2017 Maryland Trading and Offset Policy and Guidance Manual (Draft Trading Manual), the State of Maryland believes that nutrient credit trading provides flexibility by offering the potential for permittees to "achieve results faster and at a lower cost."

Several permittees expressed support for the permit to allow nutrient credit trading as a strategy for achieving restoration goals. One commenter "strongly encourages a Nutrient Trading Program." Another commenter emphasized: "The ability to trade or not trade and the associated regulations that govern trading could significantly impact the anticipated staffing needs and

capital budget associated with meeting the restoration requirements" as well as permittees' "ability to prepare a plan to comply with and meet the goals of the permit." Yet another commenter concurred that trading would allow restoration to be implemented "in a much more cost effective manner."

Alternatively, the environmental commenters asserted that permittee restoration plans "should not include trading until the anticipated trading regulations and public participation process have been completed." The commenters want to "encourage the Department to instruct permittees not to rely on the speculative and uncertain trading program in their assessments and restoration plans until the details of such a trading program are in place", cautioning that it is "inappropriate to allow a permittee to budget for and rely upon practices that later prove to be unworkable or simply unavailable."

MDE will allow nutrient credit trading to be used as a method to achieve small MS4 restoration requirements. In December 2017, the Maryland Water Quality Trading Advisory Committee published draft regulations, COMAR 26.08.11, and released the Draft Trading Manual to the public for review. Final trading regulations are anticipated in 2018. The concurrent development of Maryland's Nutrient Trading Program along with the small MS4 permit provides ample time for permittees to develop sound restoration strategies that may include trading. MDE will provide further guidance on applying credits toward restoration requirements once the regulations and manual have been finalized.

Illicit Discharge Detection and Elimination (IDDE)

The small MS4 general permit includes provisions that require "the development, implementation, and enforcement of a program to detect and eliminate illicit discharges" in accordance with 40 CFR § 122.34(b)(3). Components of this program must include mapping the MS4, prohibiting non-stormwater discharges, implementing a plan to detect and address non-stormwater discharges, and informing the public of hazards associated with illicit discharges. MDE established requirements for an acceptable IDDE program in the permit to meet these regulatory provisions. Criteria for developing SOPs, screening outfalls, documenting inspections, mapping MS4 infrastructure, and reporting are outlined in the permit.

1. Definition of an outfall

   Multiple commenters expressed concern that the definition of an outfall is different than that in federal regulation. One commenter stated: "Points of discharge on property above a waterbody, discharge points from a BMP that do not discharge into waters, and inflow points are not outfalls."

   The permit provides guidance to permittees for establishing an IDDE program. The guidance has been clarified so that the definition of an outfall is consistent with 40 CFR § 122.26(b)(9) while allowing flexibility for prioritizing the location of outfall inspections. For example, the guidance specifies that screenings may be performed further up the system in areas with a high pollution potential where illicit connections are more likely to be found. This

clarification will offer greater flexibility to investigate priority areas closer to the source of a potential illicit discharge.

2. 20% outfall screening requirement

The permit requires small MS4 owners and operators to annually screen 20% of their outfalls during dry weather, up to 100 outfalls. Several commenters stated that screening 20% of outfalls is not required by federal law. Two commenters noted that EPA provided guidance "that only suggests that the program include dry weather screening and field testing of 'selected pollutants as part of the procedures for locating priority areas.' 40 C.F.R. § 122.34(b)(3)." A commenter suggested alternative language that removed the quantitative requirement and directed permittees to annually screen a list of priority outfalls based on the permittee's review of infrastructure and land use within the regulated permit area.

Regulations under 40 CFR § 122.34(a) require: "Terms and conditions that satisfy the requirements of this section must be expressed in clear, specific, and measurable terms." Furthermore, language such as "at a frequency determined by the permittee" does "not constitute a measurable requirement for the purposes of the rule" (81 FR 89335). To comply with the Remand Rule, MDE included a clear, specific, and measurable condition that set a minimum numeric outfall screening requirement. Language that leaves the level of implementation required for compliance to the discretion of the permittee conflicts with the purpose of the rule. In addition, the preamble to the rule clarifies that using federal guidance as the basis for permit requirements "does not mean that the permit has established requirements beyond the federal minimum or that the permitting authority impermissibly used guidance to develop enforceable requirements" (81 FR 89342).

3. Mapping

The following comments were submitted regarding the features required on an MS4 map:

a. *Outfalls and stormwater best management practices*

One commenter suggested language that required mapping of only "known" outfalls and "known" stormwater BMPs. Another commenter stated that its "MEP would be developing and periodically updating a map of the known outfalls and stormwater management BMPs."

The mapping requirement in 40 CFR § 122.34(b)(3)(i)(A) does not limit outfall mapping to known outfalls. It is the expectation that over the five-year permit term, permittees will continue developing their maps as they find new MS4 features. BMPs that manage stormwater are part of an MS4 and therefore are required to be mapped under this permit condition. Furthermore, COMAR 26.17.02 requires permittees to conduct triennial inspections of stormwater management practices. In order to effectively manage the MS4 and comply with Maryland regulations, the location of these practices must be identified. In addition, documenting stormwater BMPs is essential to determining a

permittee's impervious area baseline, restoration requirements, and restoration opportunities.

b. *Pipes, surface waters, illicit discharge screening locations, and inlets*

One commenter suggested a revision that removed "all pipes", "surface waters", "illicit discharge screening locations", and "inlets" from the mapping requirements. Another commenter questioned the purpose of including illicit discharge screening locations on the maps.

Federal regulations require the development of an MS4 map under 40 CFR § 122.34(b)(3)(i)(A). Stormwater conveyances, including pipes, drainage swales, and ditches, are a major component of an MS4 and therefore are required to be included under this permit condition. Language has been revised to include stormwater conveyances to clarify that the MS4 is not limited to pipe infrastructure. MDE changed "surface waters" to "waters of the U.S. receiving stormwater discharges" to be consistent with CFR.

Illicit discharge screening locations refer to the outfalls screened by a permittee each year. These locations are planned by the permittee in advance. Permittees must document screening locations to demonstrate how areas are being prioritized by pollution potential. Some current permittees are already documenting this information in their reporting under the first generation permit. The second generation permit has been edited to clarify that a permittee must document how outfalls are prioritized by identifying and describing the areas within which screenings were conducted. The IDDE section of the MS4 Progress Report template has been revised as well to clarify this reporting requirement.

MDE acknowledges that the number of inlets could be substantial and will require a significant effort to map. If permittees have mapped MS4 conveyances, they will be able to track a discharge up the system, which would include identifying inlets. Inlets have been removed as a mapping requirement within the current permit term. However, inlets should be added to maps as they are field verified. Documenting inlet locations will facilitate more efficient discharge source tracking.

4. <u>Permit requirements and MEP level of effort</u>

a. *Mapping*

There was concern by some commenters that the mapping requirement may not be practical. One small MS4 permittee stated that while its map will be refined each year, the mapping requirement is "well beyond an MEP level of effort over the five-year permit term."

Although permittees will be required to submit a map with the first MS4 Progress Report on MCM implementation, permittees have the full five-year permit term to continue to

update the map. IDDE guidance in the permit allows permittees to prioritize initial mapping efforts to areas with higher potential to pollute (e.g., urban, commercial, industrial, rapidly developing). The permit also recommends that permittees develop a long term schedule for completing MS4 mapping. Refining maps each year is appropriate and consistent with the permit language and guidance.

Federal regulations direct the permitting authority to determine the MEP standard based on best professional judgment and consideration of available information when writing permit conditions (64 FR 68754). As reported in previous annual reports under the first generation permit, existing small MS4 permittees have been continually mapping outfalls, inlets, manholes, culverts, and BMPs, clearly demonstrating that this requirement is not beyond MEP. In addition, 40 CFR § 122.34(b)(3)(i) allows for the permitting authority to add components that it deems necessary to detect and eliminate illicit discharges by including the language "at a minimum." Requiring additional map features is within the permitting authority's discretion if the authority deems those features are necessary to develop, implement, and enforce a program to detect and eliminate illicit discharges.

b. *Outfall screening*

A commenter stated that annually screening 20% of outfalls (capped at 100 outfalls) is beyond MEP for many permittees and, for some, would be equal to the number of outfalls required of medium Phase I MS4 permittees. A couple of commenters stated that screening 100 outfalls would require the same level of effort as medium Phase I MS4 permittees. One commenter requested that the permit require only inspections of major known outfalls.

Designating the numeric outfall requirement as a percentage takes into consideration the variation in MS4 size and available resources. Setting a single number of outfalls to be screened by all permittees regardless of whether the permittee is a small municipality or a large county would be inequitable. Some small MS4 permittees have a more extensive MS4 and potentially greater than 500 outfalls. While required to set a clear, specific, and measurable requirement, MDE determined that it should not be greater than what is required of Phase I MS4s and therefore capped the requirement at 100 outfalls.

Implementation of the IDDE outfall screening in the small MS4 general permit will not require the same level of effort as the requirements in medium Phase I individual permits. The Phase I individual permits require chemical testing for discovered flows for numerous parameters, including chloride, copper, detergents, temperature, and pH. In addition, an extensive dataset for dry weather screenings, including last rain date, air temperature, outfall conditions, and chemical test results are required for individual permits. Small MS4 permittees are also not required to conduct and report on visual surveys of commercial and industrial areas and resulting investigations and enforcement actions. Therefore, the Phase I MS4 permits require a significantly greater effort than the permit conditions set forth in the small MS4 general permit.

MDE's decision was also based on current level of effort of existing small MS4 permittees. Some permittees are already screening close to 100 structures annually and exceeding requirements by conducting chemical tests of dry weather flows. For example, since 2014, one small MS4 commenter reported inspecting more than 100 sites each year and chemically testing dry weather flows. This permittee inspected 151 sites in 2016.

The permit terms and conditions do not limit outfall screenings to major outfalls. Some permittees with a less extensive MS4 system may only have minor outfalls, but may still have potential illicit discharges originating from illicit connections and commercial and industrial activities. Initial development and implementation of SOPs can focus on more urbanized and developed areas. In addition, screenings can be conducted at point sources further up the system than the outfall, at the permittee's discretion. By looking for discharges closer to pollution sources, the permittee can reduce the level of investigation needed to track a discharge source.

5. Language that is not clear, specific, and measurable

Numerous comments suggested that permit language limits compliance to what permittees deem appropriate, practicable, or reasonable. For example, one commenter requested that maintaining legal means to gain access to private property be limited to what is the "maximum extent practicable." In addition, the commenter suggested that including jurisdictional cooperation in the SOPs should be "as appropriate."

According to EPA's Remand Rule, "caveat language" that does not meet the intent of "clear, specific, and measurable" conditions includes "to the maximum extent practicable" and "as appropriate." The permit requirement is for a permittee to have the legal means to gain access to property (e.g., ordinance), and not to give a directive to access property for any one specific violation. Consideration of issues related to the legal process or safety should be addressed in the permittees' SOPs. In addition, it is logical and appropriate for procedures to include actions to be taken to coordinate with adjacent/interconnected MS4 operators. The SOPs must include guidance on how and when investigating and eliminating an illicit discharge requires cooperation and what steps must be taken to work with another MS4 permittee to achieve a resolution.

6. Third party responsibility

Several comments expressed concern that permittees will be legally responsible for third party discharges. One commenter objected to the language: "A permittee will satisfy this MCM by…eliminating any illegal connection or illicit discharge to the storm drain system." This commenter stated that the "IDDE requirement can and should include reasonable measures for the permittee to monitor, identify, and take action to eliminate known illicit discharges, but the permit should not make the permittee legally responsible for the criminal actions of third parties." Another commenter stated that "the first sentence in Part IV.C must be reworded so the permittee is not required to 'eliminate' all illicit storm drain system discharges", suggesting that polluted discharges cannot be eliminated entirely (e.g., pet waste) and are more appropriately addressed in public education activities. The commenter

further stated that IDDE SOPs include activities intended to help prohibit future illicit discharges.

The first paragraph of Part IV.C is consistent with 40 CFR § 122.34(b)(3)(i) that requires permittees to have a program to detect and eliminate illicit discharges. Under 40 CFR § 122.34(b)(3)(i)(B), the permittee must, "to the extent allowable under State, Tribal or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the storm sewer system and implement appropriate enforcement procedures and actions." Eliminating discovered illicit discharges as required in the permit must be accomplished by following appropriate enforcement procedures as legally allowable.

One commenter's suggestion to use public education programs and SOPs to address illicit discharges is consistent with the permit requirements. Small MS4 general permit language was revised to clarify that the programmatic approach is not precluded and MDE does not expect that illicit discharges will never occur or that permittees have the capability to eliminate every illicit discharge occurring within their jurisdictions. Permittees must follow procedures to identify and eliminate illicit discharges that are discovered through dry weather outfall screenings and citizen complaints. To make progress toward preventing illicit discharges throughout the jurisdiction, it is appropriate to use programmatic measures (e.g., pet waste campaigns, household hazardous waste education).

7. <u>Standard operating procedures</u>

a. *Administrative burden*

One small MS4 permittee stated that it has "concerns about the amount of administrative burden placed on a municipality to track all actions to meet compliance. This task requires a significant amount of action on the City's staff to document a case, investigate it, work with the owner whether cooperative or uncooperative, and follow up for compliance." The commenter expressed concern over the need for SOPs and staff training to meet legal sufficiency for enforcement.

A minimum element of an IDDE program is the ability to "implement the appropriate enforcement procedures and actions" in accordance with 40 CFR § 122.34 (b)(3)(i)(B). Furthermore, criteria used by EPA to assess permit compliance in prior small MS4 general permit audits have included a review of comprehensive written SOPs for each permittee. Administrative burden is not an adequate justification for not meeting requirements set forth in CFR.

b. *Lab testing*

One small MS4 permittee requested clarification on whether lab testing is required.

Permittees have an obligation to conduct an investigation to determine the source of a suspected illicit discharge. Chemical testing is a method that can be utilized, but is not required. Permittees can use other methods for source tracking, including visual and

olfactory observations, tracing the discharge further up the system by observing inlets and manholes, and conducting dye or smoke testing.

c. *Identification of priority areas*

One permittee asked if MDE will provide guidance on the identification of priority areas and how those areas should be incorporated into permittee's IDDE programs.

Priority areas are those with a higher likelihood of having polluted discharges (e.g., industrial/commercial land uses, areas with aging infrastructure, residential development with a high population density). Permittees are expected to consider priority areas when developing an outfall screening schedule. Permittees may choose to screen outfalls in industrial areas on a more frequent basis than residential areas with a low population density. Permittees may also choose to change a screening location from an outfall with a large drainage area to a point closer to potential pollution sources, such as restaurants and car washes. Permittees must justify how priority locations are chosen in the SOPs.

8. Miscellaneous comments

MDE received additional comments related to IDDE requirements as follows:

a. *Documentation*

One small MS4 permittee requested clarification on the map format and "what constitutes a complete IDDE record for the purposes of permit compliance."

The map can be in either physical or geographic information system format. The map format is not specified in the permit in order to allow flexibility. A complete IDDE record demonstrates the implementation of the dry weather screening program. The permit outlines the specific criteria to be included in SOPs. Permittees are required to keep documentation of inspections conducted and track corrective actions and enforcement activities. Permittees have the flexibility to determine what systems to use to track this information and retain inspection records. Some permittees utilize tablets to complete electronic inspection forms in the field while others may utilize hard copy checklists.

b. *Alternative IDDE program*

Two commenters stated that one medium Phase I jurisdiction's MS4 permit allows it to submit an alternative program to MDE for approval and that this alternative program is not an option in the small MS4 general permit.

The general permit must include clear, specific, and measurable requirements. This is achieved by the numeric screening requirements and specific components of the SOPs. However, the permit allows flexibility in developing SOPs that identify priority areas while incorporating local water quality concerns.

c. *Structural stability*

One commenter requested that the reference to addressing structural stability and erosion concerns be removed because "[r]equiring outfall corrections is very expensive and time-consuming. Permittees should be focusing on developing a screening program and not how to address infrastructure."

The caption to Figure B.1 in the permit has been revised to clarify that correcting all structural problems is not mandated. However, identifying structural stability and erosion is an important component of an illicit discharge program. As discussed in *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*, Section 11.8 (Center for Watershed Protection and Robert Pitt, 2004), "physical indicators found at both flowing and non-flowing outfalls…can reveal the impact of past discharges…Physical indicators include outfall damage, outfall deposits or stains, abnormal vegetation growth, poor pool quality, and benthic growth on pipe surfaces." Knowledge of failing infrastructure can be useful information when prioritizing illicit discharge screening locations. Permittees should develop a schedule for addressing areas of high erosion that create infrastructure problems.

Construction Site Stormwater Runoff Control and Post Construction Stormwater Management

The permit includes provisions for small MS4 permittees to develop, implement, and enforce a program to reduce pollutants in stormwater runoff from construction activities that result in a land disturbance of greater than or equal to one acre in accordance with 40 CFR § 122.35(b)(4)(i). Likewise, the permit includes provisions for permittees to develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre in accordance with 40 CFR § 122.35(b)(5)(i). Maryland has had well-established erosion and sediment control and stormwater management programs since the early 1970s and 1980s that are consistent with CFR. Consistent with qualifying local program provisions specified in 40 CFR § 122.35(e), the permit accepts the implementation of the State's erosion and sediment control program under COMAR 26.17.01, and stormwater management program under COMAR 26.17.02. While some small MS4 commenters stated that the permit language exceeds the State's program requirements and is unnecessary, several environmental commenters stated that the draft permit language is too lenient for protecting water resources from construction site runoff.

One permittee claimed that the "[d]raft GP [general permit] duplicates and sometimes changes the requirements of State law, creating inconsistent sets of requirements." As an example, the commenter pointed to where the draft permit mandates "resolving" complaints whereas State regulations only require the enforcement authority to take "appropriate action" if violations are discovered, COMAR 26.17.01.09(F). MDE agrees that there are slight differences between the draft permit and COMAR, and where the federal permitting requirements are more stringent, they shall be followed. The Remand Rule specifically discusses general language usage and a need for greater specificity in general permits.

Another permittee stated that the draft permit "does not carefully delineate responsibilities for permittees with different responsibilities for E&S [erosion and sediment] control programs. Some GP permittees are neither approval nor enforcement authorities; some are approval authorities only; and some are both. As a specific example, if a permittee is not reviewing and approving plans or performing inspections and enforcement, it is unclear when or how the permittee would '[e]nsure all necessary permits have been obtained…' as required in the draft permit."

Numerous agencies (e.g., soil conservation districts, surrounding counties, MDE) may have plan approval, inspection, or enforcement powers in small MS4 permitted jurisdictions. MDE encourages permittees to utilize surrounding jurisdictions and government agencies with existing programs for implementing the conditions of this minimum control measure. It is incumbent upon each permittee, however, to ensure through a memorandum of understanding (MOU) or other legal construct that erosion and sediment control and stormwater management programs are implemented adequately within its jurisdiction. For qualifying local programs, 40 CFR § 122.35(a)(3) states that "the permittee remains responsible for compliance with the permit obligations if the other entity fails to implement the control measure (or component thereof). Therefore, EPA encourages the permittee to enter into a legally binding agreement with that entity if the permittee wants to minimize any uncertainty about compliance with the permit."

Several environmental groups commented that the requirements under the permit are not stringent enough. They stated: "The permit's reliance on construction site stormwater runoff controls found in [State] statute and regulations is insufficient insofar as the statute and regulations need strengthening to meet current weather patterns, and were also recently weakened through regulatory action."

While emerging weather patterns may demand future regulatory reform, MDE drafted a permit consistent with existing federal regulations. In addition, there are instances where State law and regulations go far beyond the federal requirements. For example, 40 CFR § 122.34 requires that construction site runoff and post construction stormwater management be required for land disturbances of greater than or equal to one acre. Maryland's more stringent regulations require erosion and sediment control and stormwater management for development that disturbs 5,000 square feet or 100 cubic yards or more of earth movement. In summary, MDE's permit requirements are consistent with CFR, adequate for controlling pollutant runoff from construction sites and final development, and not onerous to permittees.

Pollution Prevention and Good Housekeeping

The permit includes provisions for permittees to develop a pollution prevention and good housekeeping program in accordance with 40 CFR § 122.34(b)(6), which requires the "implementation of an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations." Components of this program include procedures and schedules for maintenance and inspection of stormwater controls; practices to reduce or eliminate discharge of pollutants from permittee operated roads, parking lots, maintenance yards, and storage areas; and proper waste disposal.

MDE has established requirements for an acceptable pollution prevention and good housekeeping program in the permit to meet these regulatory provisions. Numerous permittees requested clarification on these requirements. MDE has responded below and provided further clarity in the final permit.

1. Is training required for all staff and contractors?

   One commenter questioned whether training is required for "contractors hired by the city to execute CIP projects or large scale Operations and Maintenance." Another commenter questioned "which appropriate staff and contractors will require annual training."

   Training is required for permittee staff and contractors who perform municipal activities that include maintenance of roads, inlets, vehicles, or heavy equipment; management of storage areas for vehicles or heavy equipment; and handling of deicers, anti-icers, fertilizers, pesticides, road maintenance materials such as gravel and sand, or hazardous materials.

   One commenter asked whether the training requirement can be met by the Responsible Personnel Certification Course. Additional training is required in relevant pollution prevention measures when staff are involved with specific activities noted above, such as spill control or hazardous material storage and handling.

2. Are pollution prevention plans required for all publicly owned properties?

   One commenter asked if pollution prevention plans are required "for all publicly owned properties such as administrative office buildings, parking garages, parks, etc." Another commenter requested clarification on the types of facilities for which MDE will require these plans, noting that it appeared as written in the draft permit that "this requirement is unnecessary. The County owns or operates numerous properties that are very low-risk for discharging pollutants to the County's MS4. For example, several of the properties are vacant with no potential pollutants and others are only used for passive recreation. There is no need for a pollution prevention plan for these kind of low-risk properties." One commenter suggested language to indicate that good housekeeping procedures should be developed and implemented for properties "owned by the permittee", and not "throughout the jurisdiction" as the permit stated.

   MDE added language to the permit to clarify that a plan should be developed at properties owned or operated by the permittee where key site activities are performed that have a risk of discharging pollutants into stormwater. The activities listed in the permit include maintenance of roads, inlets, vehicles, or heavy equipment; management of storage areas for vehicles or heavy equipment; and handling: deicers, anti-icers, fertilizers, pesticides, road maintenance materials such as gravel and sand, or hazardous materials.

   One commenter questioned the requirement to prepare "SWPPPs [stormwater pollution prevention plans] for all the County properties" as part of the permit requirements. Another commenter questioned if MDE intended the term "publicly owned or operated properties" to

only apply to "certain types of facilities (for example, properties covered by 12-SW as industrial facilities)."

MDE changed the reference to "pollution prevention plan" in the permit to "good housekeeping plan" to distinguish the permit requirement from the SWPPPs required by the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity. The criteria for a good housekeeping plan are not as comprehensive as those required in a SWPPP. For example, a SWPPP requires: quarterly stormwater sampling at all outfalls; comparison of sampling results to benchmark levels to determine whether control measures must be reviewed and updated; submittal of discharge monitoring reports (DMRs) to MDE; and submittal of corrective action reports to MDE for any spill, leak, or unauthorized discharge that occurs on site. The good housekeeping plan does not require any of these components, and instead focuses on identifying potential pollution sources, preventing the release of pollution discharges from stormwater runoff, and developing corrective actions to address a spill, release, or leak.

3. Additional comments related to pollution prevention and good housekeeping

   a. *Creating a standard pollution prevention plan for a large number of facilities*

      One commenter stated that it is too burdensome to develop, implement, and maintain a pollution prevention plan for each of the more than one hundred county owned or operated properties. Another commenter suggested that municipalities should be allowed to submit a standard plan for facilities with similar operations. MDE agrees with this suggestion and added language to clarify that permittees may create a standard plan for multiple facilities with similar operations. The plan must outline procedures to identify the location of potential sources of pollution on site and consider how runoff enters, flows across, and leaves the site. This will enable permittees to prioritize inspections to prevent the discharge of pollutants off site. The standard plan must also describe corrective actions taken for cleanup and containment of any spill.

   b. *Clarifying mandatory good housekeeping activities*

      One county commenter requested clarity on whether pollution prevention efforts are mandatory as they relate to street sweeping and the application of pesticides, fertilizer, and deicing materials. The county stated that there is no legal basis to impose these requirements. In addition, the county pointed out that many streets are gravel roads where street sweeping cannot be performed. Another commenter suggested language to indicate that pollution prevention efforts should only be reported "if undertaken by the permittee."

      MDE clarified the language to indicate that street sweeping should be reported when applicable. It is not a mandatory activity but instead is listed as one option to show compliance with this permit condition. The permittee may prioritize other good housekeeping activities to control pollutant discharges from municipal operations.

Pollution prevention measures during the use of pesticides, fertilizers, and deicing materials should be addressed by all permittees when these materials are used within the jurisdiction, for example during road and landscape maintenance. Permittees should summarize in their MS4 Progress Reports the pollution prevention measures performed during these municipal operations, including controls that contactors utilize during municipal activities. Progress Reports may note whether another entity performs these activities within the permit area to fulfill these permit requirements if appropriate legal arrangements have been established. However, the permittee must report the pollution prevention controls that contactors utilize during municipal activities.

c. *Determining coverage for properties under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity, Sector AD.a*

One commenter stated that the permit language was vague regarding the requirement to "contact MDE to determine whether coverage is required for any permittee owned or operated facility under the General Permit for Stormwater Discharges Associated with Industrial Activity, Sector AD.a, which provides coverage to Department of Public Works and Highway Maintenance facilities." This commenter suggested alternative language that in the first annual report, permittees provide a list of properties where key activities occur, indicating whether any are covered under the industrial general permit, and that future annual reports indicate any status changes. MDE agrees and has updated the permit language to require permittees to provide in the NOI a list of properties that perform the activities listed in the permit and to indicate whether the properties are covered by the industrial general permit; subsequent MS4 Progress Reports should include an update only if any information has changed.

d. *Caveat language suggested in public comments*

One commenter suggested language to indicate that staff training and the development of pollution prevention plans be applicable "as determined by the permittee." Permit requirements are required to be clear, specific, and measureable. The caveat language suggested by this commenter does not meet federal requirements under the Remand Rule and will not be incorporated into the permit.

Additional Comments

1. Shared responsibility

- **Comment:** Clarification was requested on whether permittees are required to have a formal agreement detailing responsibilities to meet permit requirements for which permittees are not delegated authority (e.g., erosion and sediment control enforcement authority).

Response: If MDE has not delegated erosion and sediment control enforcement authority to a permittee, a formal agreement outlining MDE's responsibility is unnecessary. For MCMs that are implemented by entities other than MDE (e.g., county inspections of

municipal stormwater BMPs), MDE recommends that permittees enter into a legally binding agreement (e.g., memorandum of understanding) to minimize uncertainty about compliance.

- **Comment:** One permittee expressed concern that fragmenting its jurisdiction by removing properties owned by other permittees would impede compliance with MCMs 3, 4, and 6 and prevent adherence to local ordinances. If responsibilities are to be shared between multiple entities, permits should be issued to those entities concurrently. The commenter stated that it "reserves the right to retain such parcels within its MS4 jurisdictional boundaries."

  Response: Permittees may implement their programs in accordance with approved ordinances. Permittees are required to coordinate with operators of interconnected MS4 systems within their jurisdictional boundaries in order to adequately address permit conditions. Therefore, concurrent permits are not necessary.

2. Water quality standards

- **Comment:** Clarification was requested on whether permittees are required to "prohibit" stormwater pollutants to comply with Maryland's receiving water quality standards as written in the permit. Clarification was also requested on whether permittees must attain WLAs or if compliance is achieved by making progress toward TMDLs and by meeting permit requirements.

  Response: Compliance with the permit (e.g., meeting impervious area restoration requirements during this five-year term, MCM implementation) will meet obligations for nutrient and sediment load reductions for permittees.

3. Public Education and Outreach

- **Comment:** Several permittees requested clarification regarding the requirement of a "hotline" to report water quality complaints.

  Response: Permittees have the discretion on what processes are established to receive water quality complaints. The processes must include a phone number; however, the phone number does not need to be a hotline dedicated solely to stormwater. A hotline used for multiple purposes (e.g., 311 services) must incorporate processes that will allow a water quality complaint to be successfully directed to the appropriate respondent.

  An online service request is an acceptable method for the public to report water quality complaints, but a telephone number should be available and advertised to citizens who do not have internet access.

- **Comment:** Clarification was requested regarding whether the permittee determines the target audience for MCM 1 and how many audiences are required to be targeted.

Response: The permittee may determine the target audience(s) for public education and outreach. No minimum number of target audiences is specified. The permit covers a diverse group of MS4s from small towns to larger counties. The permittee shall determine the target audience(s) in order to adequately communicate with their specific audience.

- **Comment:** Clarification was requested regarding whether educational material from other sources may be used instead of being developed in house.

  Response: The permittee may use educational materials developed by other sources including MDE, and the permit language has been updated to clarify this.

- **Comment:** Clarification was requested regarding whether the permittee must submit with MS4 Progress Reports copies of all educational materials used during the reporting year.

  Response: The permittee may submit a selection of examples with the MS4 Progress Report and is not required to submit all materials.

- **Comment:** A permittee asked if the permit requires that MDE approve the employee training topics used to fulfill the requirements of MCM 1.

  Response: The permit does not require that MDE approve training topics; however, as the permit states, topics should educate the public regarding impacts of stormwater runoff and solutions that residents can implement.

- **Comment:** A permittee asked that MDE clarify which employees require training under MCM 1 and what training topics and materials are acceptable.

  Response: MDE clarifies that this requirement may be fulfilled with the training requirement outlined in the Pollution Prevention and Good Housekeeping program of the permit; guidance can be found there on the specific types of employees that must be trained, however, the permittee may choose to educate a broader group of staff.

- **Comment:** Clarification was requested on the permit requirement to describe in MS4 Progress Reports how public education programs facilitate the permittee's efforts to reduce pollutants in stormwater runoff.

  Response: The permittee is required to briefly describe how this MCM's educational programs strategically target audiences and have been used to complement and strengthen other programs of the permit. Examples include use of educational activities to increase participation at public events, promoting awareness of the water quality hotline, or increasing collaboration with environmental groups related to education programs and restoration efforts. MDE has updated the permit language to clarify this.

- **Comment:** A permittee asked why Earth Day events, and not other similar events such as Arbor Day and Green Week, were specifically referenced in the MS4 Progress Report.

Response: Other public events are acceptable to achieve compliance with this requirement and MDE has updated the permit language to clarify this.

- **Comment:** A permittee requested to remove the requirement to provide public access to MS4 Progress Reports via a website or other method, and the requirement to consider any substantive public comments received concerning the permittee's MS4 program, attesting that these requirements are onerous.

  Response: Most permittees currently maintain a municipal website that provides information to residents on services such as water, sewer, and waste management where MS4 Progress Reports can be posted. The permit also provides flexibility in how permittees address public comments. The permittee is required to consider any substantive public comments received and describe how they have been incorporated into the permittee's MS4 program for improving water quality.

4. Public Involvement and Participation

- **Comment:** A permittee asked how many public events are required to be held each year to achieve compliance with MCM 2, and how MDE would document non-compliance if this requirement were not met.

  Response: The permittee may hold the minimum five public events at any time during the permit term. However, an annual event may be more efficient to host than five different events organized in the fifth year of the permit term. Also, a progress report addressing MCM implementation is required in year 5 only if the permittee has not demonstrated in previous reports that adequate progress has been made toward fulfilling program requirements.

- **Comment:** Two permittees asked for clarification on what activities are considered to be public events and to clarify whether the permittee may determine this. One permittee asked if, for example, public meetings, surveys, and requests for comment are considered to be public events.

  Response: The purpose of this requirement is to conduct an event that will engage residents and have a positive impact on water quality. The examples listed may be acceptable as long as the permittee is able to document citizen engagement.

5. Financial reporting

- **Comment:** One permittee requested clarification on how detailed costs must be when reporting on each MCM.

  Response: Estimated costs can be provided.

6. MS4 Progress Reports

- **Comment:** One permittee requested that MDE's annual report reviews provide specific feedback so that permittees can adjust program implementation as quickly as possible.

  Response: MDE's MS4 Progress Report reviews will evaluate each permittee's submission and provide detailed comments regarding program implementation and compliance.

- **Comment:** One permittee requested that MDE formally accept or reject annual reports to make it clear whether permittees are in compliance.

  Response: MDE will notify permittees of their compliance status as part of the MS4 Progress Report reviews.

7. Urbanized area designation

- **Comment:** Two permittees questioned inclusion in an urbanized area based on certain local population and density data.

  Response: MDE does not make the determination of what qualifies as an urbanized area. This is done by the U.S. Census Bureau and the criteria for the 2010 census are outlined in the Federal Register, volume 76, no. 164, published on Wednesday, August 24, 2011.

References

1. 2000 Maryland Stormwater Design Manual Volumes I & II, revised 2010, Maryland Department of the Environment.

2. Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits, Maryland Department of the Environment (August 2014).

3. Basis for Final Determination to Issue Stormwater Permits to Phase I MS4s (Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, and Prince George's Counties, Baltimore City, and Maryland State Highway Administration, available at www.mde.maryland.gov/programs/Water/StormwaterManagementProgram.

4. Chesapeake Bay Program, information available at www.chesapeakebay.net.

5. Impacts of Impervious Cover on Aquatic Systems, Watershed Protection Research Monograph No. 1, Center for Watershed Protection (March 2003).

6. *Maryland Department of the Environment et al. v. Anacostia Riverkeeper et al.*, No. 42, September Term, 2015, *Blue Water Baltimore et al. v. Maryland Department of the Environment*, No. 43, September Term, 2015, *Blue Water Baltimore et al. v. Maryland Department of the Environment et al.*, No. 44, September Term, 2015, Opinion by Adkins, J.

7. Maryland's Phase II Watershed Implementation Plan for the Chesapeake Bay TMDL (Updated October 2012) available at www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Pages/FINAL_PhaseII_WIPDocument_Main.aspx

8. National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System General Permit Remand Rule, Federal Register / Vol. 81, No. 237 / Friday, December 9, 2016 / Rules and Regulations.

9. Pilot TMDL Applications Using the Impervious Cover Method, Submitted by ENSR Corporation to the U.S. Environmental Protection Agency, Region I (October 2005), available at www.epa.gov/tmdl/pilot-tmdl-applications-using-impervious-cover-method.

10. U.S. Environmental Protection Agency letter from David B. McGuigan, Associate Director, Office of NPDES Permits and Enforcement, Water Protection Division, to Lynn Buhl, Director, Water Management Administration, re: Phase II General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4) (MDR055501) (December 5, 2016).

11. U.S. Environmental Protection Agency letter from Jon M. Capacasa, Director, Water Protection Division, to John Hines, Deputy Secretary for Water Management, Pennsylvania Department of Environmental Protection (July 9, 2010).

12. U.S. Environmental Protection Agency Memorandum from David Smith, Manager, NPDES Permits Office (WTR-5) and Charlotte Withey, Office of Regional Counsel (ORC-1), through Alexis Strauss, Director, Water Division (WTR-1) and Nancy Marvel, Regional Counsel, Office of Regional Counsel (ORC-1), to Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, re: Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage (February 8, 2011), available at www.epa.gov/sites/production/files/2015-11/documents/guam-ms4-residual-designation-memo.pdf.

13. Watershed Implementation Plans, information available at www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-watershed-implementation-plans-wips and www.mde.maryland.gov/programs/water/TMDL/TMDLImplementation/Pages/wip.aspx.

Attachments

1. Summary of Permit Language Clarifications.

2. List of organizations that submitted comments. Full comments are available on MDE's website.

3. U.S. Environmental Protection Agency letter from David B. McGuigan, Associate Director, Office of NPDES Permits and Enforcement, Water Protection Division, to Lynn Buhl, Director, Water Management Administration, re: Phase II General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4) (MDR055501) (December 5, 2016).

4. U.S. Environmental Protection Agency letter from Jon M. Capacasa, Director, Water Protection Division, to John Hines, Deputy Secretary for Water Management, Pennsylvania Department of Environmental Protection (July 9, 2010).

Attachment 1

Summary of Permit Language Clarifications

On December 22, 2016, MDE published the tentative determination NPDES small MS4 general permit to address pollutant discharges from municipalities. The public comment period ended on March 30, 2017, and MDE received numerous comments pertaining to the requirements of the permit. As a result, MDE provided edits and clarifications to address questions related to permit conditions. However, the requirements in the permit remain substantively unchanged. The language changes provide greater clarity of the intent of specific requirements and how to comply with these provisions. A summary of these editorial changes are listed below.

Regulated Small MS4s

- Clarified regulatory authority for designation under the permit

Notice of Intent Requirements: Contents

- Clarified which permits MDE requests information about coverage

Water Quality

- Title was changed to "Water Quality" for consistency with language in this section and the permit

Minimum Control Measures Overview

- Clarified when permittees are required to initiate and implement program activities

Public Education and Outreach

- Clarified that water quality complaints may be submitted by the public by other means in addition to a phone number
- Clarified MDE's intent of question 5 requesting permittees to describe how education programs complement and strengthen other programs of the permit

Illicit Discharge Detection and Elimination (IDDE)

- Revised mapping requirements: Changed "surface waters" to "waters of the U.S. receiving stormwater discharges" for consistency with CFR; changed "pipes" to "stormwater conveyances" to clarify that the MS4 as defined by CFR is not limited to pipe infrastructure; removed "inlets" to clarify that mapping inlets can be accomplished gradually through field investigations; and revised how illicit discharge screening locations are documented to demonstrate outfall prioritization
- Revised language to clarify that IDDE permit requirements do not preclude programmatic approaches to address broad categories of illicit discharges (e.g., pet waste)

Construction Site Stormwater Runoff Control

- Clarified that the State of Maryland implements an erosion and sediment control program in certain municipalities
- Clarified that the permittee is only required to track construction activities for which a grading permit is required

Post Construction Stormwater Management

- Clarified that all new and redevelopment projects must adhere to the design criteria and performance standards described in the *2000 Maryland Stormwater Design Manual*
- Clarified which staff are required to be trained

Pollution Prevention and Good Housekeeping

- Clarified which staff are required to be trained
- Clarified which properties are required to have a good housekeeping plan, based on the activities that are conducted at the property
- Clarified that a standard plan can be created to address multiple properties where similar activities are conducted
- Clarified that good housekeeping plans may cover multiple sites and are therefore not required to have a map
- Clarified that for properties covered under other NPDES permits, the permittee is only required to submit information if there are any status changes

Developing a Restoration Activity Schedule

- Clarified how to calculate treatment greater than one inch provided by BMPs
- Clarified that BMP cost information is required to be submitted after project completion

Reporting

- Updated due date of first MS4 Progress Report to reflect one year after effective date of permit (October 31, 2019)

Designation Criteria: Further Guidance

- Clarified regulatory authority for designation under the permit

Small MS4 General Permit Designation by County

- Clarified justification for designating specific MS4s

Compliance: Further Guidance

Options for filing a Notice of Intent (NOI) Application

- Simplified language to differentiate between the municipal general permit and the State and federal general permit

Mapping

- Revised the definition of "outfall" to be consistent with CFR
- Clarified that initial mapping efforts can be prioritized in areas with a higher potential to pollute

Standard Operating Procedures

- Clarified that permittees may prioritize the implementation of IDDE standard operating procedures in areas of high pollution potential

Illicit Discharge Investigation

- Clarified that permittees have the option to conduct dry weather screenings at a point further up the system from the outfall to detect illicit discharges closer to their sources

Land Use and Impervious Surface Area Analysis

- Clarified that the baseline year chosen can be the date when best available land use data is available
- Clarified that small MS4 counties may determine baselines according to the impervious surfaces within the urbanized area of that jurisdiction
- Clarified which era of stormwater BMPs are considered to have acceptable water quality treatment

Impervious Surfaces in Rural Areas

- Clarified required documentation to verify that rural areas have acceptable treatment to remove from the untreated impervious area baseline

Criteria for Impervious Area Restoration Crediting

- Clarified that BMPs designed to treat greater than one inch of rainfall may receive additional credit according to the Accounting Guidance
- Updated section title to clarify meaning

Acceptable Restoration Strategies

- Clarified that restoration BMPs may be implemented anywhere within the jurisdictional boundary

Alternative Stormwater BMPs

- Provided additional information on how to calculate credit for new, innovative, or alternative BMPs

Urban Best Management Practice (BMP) Database and Codes

- Simplified the information fields required in the BMP database

Notice of Intent Form

- Updated language in signature of NOI to be consistent with federal regulations

Reporting Forms

- Updated to be consistent with permit requirements and clarifications noted above

Attachment 2

Public Comments Received by MDE Regarding the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems

Public Comment Period: 12/22/16 – 3/30/17; Public Hearing: 2/6/17

Organization Sending Comments	Signature, Co-Signatures, and/or Affiliated Organizations
City of Aberdeen	Kyle E. Torster, Director of Public Works (referenced comments from the Associations)
Allegany County	Board of Allegany County Commissioners represented by Jacob C. Shade, President
The Associations	Maryland Association of Counties, Maryland Municipal League, Maryland Municipal Stormwater Association
Town of Boonsboro	Howard W. Long, Mayor
Calvert County	Board of County Commissioners as represented by Tom Hejl, President; Evan K. Slaughenhoupt, Jr., Vice President; Mike Hart; Pat Nutter; Steven R. Weems (referenced comments from the Associations)
Cecil County	Kordell Wilen, Chief, Development Services Division (referenced comments from the Associations)
Chesapeake Bay Foundation (CBF) et al.	Alison Prost (CBF), 1,000 Friends of Maryland, Montgomery Countryside Alliance, South River Federation, Maryland Conservation Council, Waterkeepers Chesapeake, Midshore Riverkeeper, West & Rhode Riverkeeper, Cecil Land Use Association, Blue Water Baltimore, Earth Force, Wicomico Environmental Trust, Rock Creek Conservancy, Anacostia Watershed Society, Friends of Lower Beaverdam Creek, Lackawanna River Conservation Association
City of Frederick	Tracy Ann Coleman, Deputy Director of Public Works – Engineering (referenced comments from the Associations)
City of Gaithersburg	Meredith Strider, Stormwater Program Manager
City of Hagerstown	Valerie A. Means, City Administrator (referenced comments from the Associations)
Maryland Department of Agriculture	Hans Schmidt, Assistant Secretary
Maryland League of Conservation Voters	Benjamin Alexandro, Water Policy Advocate
Queen Anne's County	Todd R. Mohn, Director of Public Works (referenced comments from the Associations)
St. Mary's County	James R. Guy, President, representing the Commissioners of St. Mary's County (referenced comments from the Associations)
Washington County	Julie A. Pippel, Director. Division of Environmental Management (referenced comments from the Associations)

Attachment 3

U.S. Environmental Protection Agency letter from David B. McGuigan, Associate Director, Office of NPDES Permits and Enforcement, Water Protection Division, to Lynn Buhl, Director, Water Management Administration, re: Phase II General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4) (MDR055501) (December 5, 2016)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Ms. Lynn Buhl, Director
Water Management Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

DEC 0 5 2016

Re: Phase II General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4) (MDR055500)

Dear Ms. Buhl:

In September 2014, the U.S. Environmental Protection Agency (EPA), received the first draft of the permit referenced above from the Maryland Department of the Environment (MDE). Since that time, EPA has reviewed various iterations of the permit documents and provided comments, most recently related to the 2010 census and EPA's MS4 General Permit Remand Rule (pre-publication version available at https://www.epa.gov/npdes/npdes-stormwater-final-ms4-general-permit-remand-rule). As a result of our reviews, numerous changes have been made to this MS4 permit to ensure that it: meets regulatory requirements; is enforceable; and achieves the water quality objectives of the Clean Water Act and implementing regulations.

On August 3, 2016, EPA received the draft permit and fact sheet, which contained significant changes from previous versions. EPA reviewed these documents pursuant to 40 C.F.R. § 123.44 and the Memorandum of Agreement (MOA) between MDE and EPA Region III (May 22, 1989). Extensive discussions on this draft occurred between EPA and MDE, and on September 29, 2016, EPA sent written comments and a marked-up version of the permit and fact sheet to MDE requesting that changes be made to the draft documents.

Subsequently, representatives from EPA and MDE participated in discussions to address the issues identified as deficient by EPA. Based upon these communications, MDE agreed to make changes to the draft permit and fact sheet to address EPA's concerns. MDE submitted a final revised draft permit and fact sheet to EPA on November 16, 2016. These versions of the permit and fact sheet are intended to serve as the basis for public notice.

This correspondence serves as EPA's acceptance of the November 16, 2016 version of the permit documents. The draft permit establishes a clear path forward for both local and Chesapeake Bay water quality restoration through the development and implementation of a plan

that requires permittees to perform watershed assessments, identify water quality improvement opportunities, secure appropriate funding, and develop an implementation schedule to show the twenty percent impervious area restoration requirement will be achieved by 2025 to meet Chesapeake Bay restoration targets.

Additionally, the permit requires specific deliverables and implementation schedules as enforceable provisions of the permit, which is supported by MDE guidance regarding the quantification of restoration efforts and comprehensive annual reporting requirements.

At this time, EPA expects the permit documents to be made available to the public for review and comment. Should you have any questions, please contact me or Liz Ottinger of my staff at (215) 814-5783.

Sincerely,

David B. McGuigan, Ph.D.
Associate Director
Office of NPDES Permits and Enforcement
Water Protection Division

Attachment 4

U.S. Environmental Protection Agency letter from Jon M. Capacasa, Director, Water Protection Division, to John Hines, Deputy Secretary for Water Management, Pennsylvania Department of Environmental Protection (July 9, 2010)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. John Hines
Deputy Secretary for Water Management
Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, Pennsylvania 17105-8775

JUL 09 2010

Dear Mr. Hines:

In a recent conversation in the context of the Chesapeake Bay TMDL Stormwater Methodology, the Pennsylvania Department of Environmental Protection (PADEP) advised the Environmental Protection Agency (EPA) that it considers only the actual pipes and roadways that are located within a municipal right-of-way to be part of a Municipal Separate Storm Sewer System (MS4) program which is regulated by the Pennsylvania Phase II Stormwater MS4 permit (PAG-13). In a subsequent email of June 25, 2010 from Ken Murin, PADEP requested clarification regarding the scope of a discharge program for a regulated MS4 and how that applies to NPDES permit-regulated activity. This letter is intended to respond to PADEP's request and clarify this issue.

The definition of MS4 in 40 C.F.R. § 122.26(b)(8) includes subparagraph (ii), which further defines MS4 as "designed or used for collecting or conveying storm water." Because of its function of collecting stormwater from a defined area (the "urbanized area" or designated area) regulating pollutants in stormwater conveyed by and discharged from the MS4 must include controlling inflow to the MS4. EPA's clear intent in creating the MS4 Stormwater Program was to regulate stormwater discharging from municipalities where dense populations exist (Phase I) or that are wholly or in part located within urbanized areas (Phase II) by requiring that the municipalities develop strategic management programs to control stormwater flowing into the MS4, *i.e.*, stormwater collected by the MS4 from throughout its service area.

With respect to Phase II MS4s, EPA considers stormwater discharges from within the geographic boundary of the urbanized area (and designated areas) served by small MS4s to be covered by the permit. *See* 64 Fed. Reg. 68722, 68751-52 and 68804 (Appendix 2) (Dec. 8, 1999). As the preamble explains, the reason for regulating small MS4s in urbanized areas was based on the correlation between the degree of development/urbanization and adverse water quality impacts from stormwater discharged from such areas. *Id.* at 68751. Moreover, in addition to the Census Bureau-defined urbanized areas, EPA also intended small MS4s serving areas outside of the "urbanized area" boundary to be designated for regulation.

Pursuant to 40 C.F.R. §§ 122.32(a) and 123.35(b), states must look beyond the urbanized area boundaries to determine whether "regulated MS4s" should include only MS4 service areas

within the urbanized area boundaries or whether states should designate MS4s and MS4 service areas outside of those boundaries. 40 CFR § 123.35(b) states that authorized states "must develop a process, as well as criteria, to designate small MS4s other than those described in section 122.32(a)(1) of this chapter, as regulated small MS4s to be covered under the NPDES storm water discharge control program." Section 122.35(b)(2) then requires the state to "apply such criteria *at a minimum* to any small MS4 located outside of an urbanized area serving a jurisdiction with a population density of at least 1,000 people per square mile and a population of at least 10,000" (emphasis added). In addition, section 123.35(b)(4) requires the state to "designate any small MS4 that contributes substantially to the pollutant loadings of a physically interconnected municipal separate storm sewer that is regulated by the NPDES storm water program." In sum, by regulating MS4s located in "urbanized areas" and requiring states to designate and regulate stormwater discharged by MS4s serving smaller densely populated areas, the MS4 definition and the Phase II rule together define the scope of regulated small MS4 discharges as the discharges collected by or conveyed by the system of conveyances serving these areas.

In light of the definition of MS4 as a system of stormwater conveyances that collects or conveys stormwater, both the Phase I and Phase II MS4 rules require MS4 stormwater management programs to control pollutants discharged from the MS4 by controlling stormwater entering the MS4 from the service area. As explained in the Phase I Rule preamble, this is consistent with the manner of regulation envisioned by Congress in enacting section 402(p) of the Clean Water Act:

> When enacting this provision, Congress was aware of the difficulties in regulating discharges from municipal separate storm sewers solely through traditional end-of-pipe treatment and intended for EPA and NPDES States to develop permit requirements that were much broader in nature than requirements which are traditionally found in NPDES permits for industrial process discharges or POTWs. The legislative history indicates, municipal storm sewer system "permits will not necessarily be like industrial discharge permits. Often, end of the pipe treatment technology is not appropriate for this type of discharge. 55 Fed. Reg. 47990, 48037-88 (Nov. 16, 1990).

Similarly, the content of the Phase II rule expresses EPA's intent to regulate all stormwater flowing into and through the municipal system from throughout the regulated service area. Specifically, the six minimum control measures require the MS4 permittee to reduce discharges of pollutants in stormwater from the MS4 by training its department staff and construction site contractors, educating the public and imposing controls on construction sites and other sources. *See,* 40 C.F.R. § 122.34(b).

Also, it is inconsistent with the requirements of section 122.34(b)(6) to only include the streets and pipes in the municipal roadways when defining the MS4 when there are a number of areas that are owned or operated by the municipality that have stormwater drainage associated with them and may not be located within a municipal right-of-way. Some examples of such areas are municipal garages/public works areas, parks and recreational areas, police, fire and emergency service facilities, municipal buildings such as a city hall, parking areas associated

with the aforementioned facilities and any facilities with associated drainage easements. PADEP's definition of MS4 would exclude these areas.

As it relates to the Chesapeake Bay TMDL, the MS4 area cannot for purposes of the Watershed Implementation Plan (WIP) be considered only the pipes and streets because the purpose of the WIP is to account for various types of loadings so that the TMDL allocations can be accurately distributed. Currently, the WIP separates the stormwater loads for the TMDL Wasteload Allocation (WLA) into three categories -- MS4, Industrial and Construction -- because these categories have permits and therefore have a distinct mechanism for controlling their discharges. The remaining portion is considered non-point source load and is charged to the Load Allocation (LA) portion of the TMDL. As a result, if the MS4 boundary does not include the area that drains into and through the MS4, Pennsylvania's WLA will be inaccurate; furthermore, such a definition would limit Pennsylvania's ability to track the reductions occurring as a result of BMPs implemented on land draining to the MS4 if that drainage area is not included in the MS4 boundary.

EPA recognizes that not all activities which occur within the footprint of a municipal boundary may be under the direct control of the MS4 permit. However, there was a clear expectation from the beginning of the program that the MS4 permit would include source reductions beyond the sewer pipes. For example, Pennsylvania's current MS4 permit (PAG-13), requires municipalities to enact an ordinance requiring review and approval of Erosion and Sediment (E&S) Plans; ensure installation, operation, and maintenance of post-construction best management practices (BMPs); implement special practices for vehicle maintenance, fueling, and washing; and other practices which rely on better source control as opposed to end-of-pipe treatment.

Please do not hesitate to direct any questions or comments to me or to Evelyn MacKnight, at 215-814-5717.

Sincerely,

Jon M. Capacasa, Director
Water Protection Division

cc: Ken Murin, PADEP
Glenn Rider, PADEP