FACT SHEET

NPDES Permit Number:	**MD0068365**
MDE Permit Number:	**22-DP-3322**
Public Comment Period Expiration Date:	**June 9, 2022**
Contact:	**Raymond Bahr 410-537-3543**

The Maryland Department of the Environment, Water and Science Administration (the Department) proposes to issue a National Pollutant Discharge Elimination System (NPDES) permit for Municipal Separate Storm Sewer System (MS4) discharges to:

CHARLES COUNTY, MARYLAND
200 BALTIMORE STREET
LA PLATA, MD 20646
301-645-0692

Introduction

The Department proposes to reissue the NPDES Municipal Separate Storm Sewer System (MS4) permit for Charles County (permit number MD0068365, 22-DP-3322) authorizing the discharge of stormwater into, through, or from all MS4s owned or operated by Charles County. This fact sheet provides background information and explanations of the requirements in the County's permit. Contact information and procedures for submitting public comments can be found at the end of the fact sheet.

This permit represents the continued evolution of Charles County's NPDES municipal stormwater permit program. The County's initial permit in 1997 laid the foundation for a comprehensive approach for controlling stormwater runoff. Subsequent permits, along with those issued to other jurisdictions, helped Maryland to build one of the most progressive municipal stormwater programs in the country. Stormwater runoff from more than 35,000 impervious acres of roofs, roads, and parking lots have been treated with stormwater management practices, including green, innovative, and alternative practices, that reduce pollutants in local streams and rivers and help in restoring the Chesapeake Bay.

This permit requires Charles County to continue restoring impervious acres for the reduction of nutrients and sediments and implementing pollution reduction plans targeting specific pollutants that impair local waters (e.g., PCBs, trash, bacteria). This permit builds on new scientific knowledge as well as lessons learned under the previous permits. With these advancements, Charles County will continue to be a leader in reducing stormwater pollutants locally and nationally. Most significantly, the new permit:

- Incorporates Charles County's implementation of stormwater best management practices (BMPs) for impervious acre restoration using the County's total maximum daily load (TMDL) and BMP Implementation Strategy;
- Establishes annual impervious acre restoration benchmarks throughout the five-year permit term;
- Provides incentives to implement green stormwater infrastructure to increase the use of natural filters and BMPs that provide a climate change resiliency co-benefit;
- Strengthens the illicit discharge detection and elimination (IDDE) program by requiring the permittee to submit a process to prioritize the selection of outfalls for field screening and a plan and schedule for screening outfalls to the Department for review and approval;
- Requires IDDE coordination with other MS4s for conducting cross-jurisdictional investigations to track and respond to the source of an illicit discharge;
- Increases the use of good housekeeping and pollution prevention plans for additional County-owned properties to have a greater impact on stormwater prevention at key industrial areas;
- Improves winter management of deicing and anti-icing materials to further reduce chlorides, a pollutant of emerging concern;
- Leverages monitoring resources by providing the County the opportunity to participate in a pooled monitoring program; and
- Updates the *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits* (2021 Accounting Guidance) to include the Phase 6 Chesapeake Bay Watershed Model, new and updated BMPs approved by the Chesapeake Bay Program (CBP) expert panels, and nutrient credit trading. The 2021 Accounting Guidance is accessible via the web link: mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf

Successful implementation of the permit is in part dependent upon the County administration of well-established State stormwater programs. Maryland has a long history of developing statewide programs to reduce stormwater pollution that focus on protecting and restoring local water quality and the Chesapeake Bay. Maryland was one of the first in the nation to pass its Erosion and Sediment Control Law in 1970 for the control of stormwater runoff from construction sites. Numerous updates to the law and corresponding regulations over the years have added new and more stringent practices, better designs, more volume management, and more flexibility in implementation of controls for greater protection of Maryland's water resources.

The State's Stormwater Management Law passed in 1982, requires the implementation of BMPs in order to maintain after development, as nearly as possible, the pre-development runoff conditions. Over the years, this program has undergone significant revisions and enhancements, including the Stormwater Management Act of 2007 (Act), which introduced for the first time, environmental site design (ESD) to the maximum extent practicable (MEP) on all new development and redevelopment projects. The approach focuses on using natural drainage patterns and vegetation, and non-structural and small-scale practices (e.g., green infrastructure, low impact development, runoff reduction), that

more effectively manage stormwater runoff at its source rather than the use of larger practices like retention ponds.

Permit Authority

According to 40 Code of Federal Regulations (CFR) §122.26, owners or operators of large and medium MS4s must obtain an NPDES MS4 permit. In Maryland, this permit is a State permit subject to federal and State regulations. The Clean Water Act (CWA) and federal regulations provide the federal permit requirements. The Annotated Code of Maryland, Environment Article, Code of Maryland Regulations (COMAR), and policies and guidelines of the Department provide the State permitting requirements.

Permit History

Charles County is classified as a medium MS4. The County's initial NPDES MS4 permit was issued in 1997 and reissued in 2002 and 2014. In 1997, the County's initial permit laid the foundation for a comprehensive approach to controlling runoff. This was done by inventorying and mapping storm drain system infrastructure; identifying sources of pollution; monitoring storm events to judge chemical, biological, and physical stream responses; and enhancing existing management programs while establishing new ones. This approach complied with the maximum extent practicable (MEP) standard established under the Clean Water Act (CWA), 33 U.S.C. §1342(p)(3)(B)(iii).

During the second permit, the County evaluated urban runoff and water quality; prioritized watersheds in order to perform more detailed analyses and guide management implementation; and began to restore existing impervious areas within the Development District. During the County's third permit term, extensive restoration efforts continued, and technologies were implemented for new and redevelopment projects that incorporated ESD to the MEP. Furthermore, the County began the development and implementation of plans to address stormwater wasteload allocations (WLAs) established under U.S. Environmental Protection Agency (EPA) approved or established TMDL estimates.

This permit represents the next step forward for Charles County's NPDES municipal stormwater program and continues a long history when it comes to stormwater management. The County implemented a stormwater management program in 1984 that enabled the County to enter into the MS4 permitting program with practices in place. Charles County proposed a robust portfolio of programmatic, upland, and in-stream BMPs for this permit term, continuing its leadership by providing its residents with healthier streams and helping the State to meet its Chesapeake Bay restoration goals.

Regulated Permit Area

EPA defines "municipal separate storm sewer system" as "…a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body…having jurisdiction over disposal

of sewage, industrial wastes, storm water, or other wastes…; (ii) Designed or used for collecting or conveying storm water;" [40 CFR §122.26(b)(8)]. Under this definition, anywhere that a regulated jurisdiction "owns or operates" infrastructure that conveys runoff is covered under this NPDES MS4 permit.

The federal CWA amendments under 33 U.S.C. §1342(p)(3)(B) adopt a flexible framework for permitting MS4 discharges in order to effectively control pollutants and improve water quality. Accordingly, the CWA specifies that permits for discharges from MS4s:

- May be issued on a system- or jurisdiction-wide basis;
- Shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
- Shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

In addition, 40 CFR §122.26(a)(1)(v), specifies that permit coverage may be granted on a system-wide or jurisdiction-wide basis, to include areas where jurisdictions have control over land use decisions (see also 55 FR 48043 and 81 FR 89320). In accordance with this flexible permitting approach established under federal regulations and the CWA, the Department's regulatory framework for issuing MS4 permits is based on jurisdiction-wide coverage. This approach is consistent with the fact that specific permit provisions, such as erosion and sediment control and stormwater management programs, are administered under State statute as county-wide requirements (see the Environment Article, §4-103 and §4-202, Annotated Code of Maryland; and COMAR 26.17.02.01 and .02). As an example, private development requires the County's approval for erosion and sediment control and stormwater management, and is subsequently inspected, maintained, and enforced under local authority. The County also owns or operates a road system that extends throughout the entire County and generates stormwater discharges. Therefore, the Department defines the regulated permit area as jurisdiction-wide in order to most effectively meet the goals and requirements under the CWA and thus, considers all provisions of this permit to apply to the geographic area of the County.

Stormwater System in Charles County

Charles County's population continues to expand, from 146,551 in 2010 to an estimated 166,617 in 2020, according to the United States Department of Commerce's Census information, which means that the stormwater system continues to expand as it captures, treats and conveys runoff from more areas. Charles County covers an area of 458 square miles and has approximately 273 "major" outfalls. Major outfalls are defined by 40 CFR §122.26 (b)(5) as:

- An outfall pipe with an internal diameter of 36 inches or greater; or
- A discharge from a single conveyance other than a circular pipe that drains 50 acres or more; or

- An outfall pipe with an internal diameter of 12 inches or greater that drains an area that includes land zoned for industrial use.

Stormwater from these outfalls is discharged into the Patuxent River, the Potomac River, and the Anacostia River, three of Maryland's major Chesapeake Bay tributary basins. Stream segments in these basins are impaired by sediments, nutrients, polychlorinated biphenyls (PCBs), and bacteria. TMDLs have been approved and stormwater WLAs established for streams and watersheds within Charles County. A WLA is that part of an impairing pollutant's total allowable discharge that is attributed to regulated point sources. The list of TMDLs and WLAs applicable to Charles County is included as Appendix A of the permit. More information regarding approved TMDLs for Charles County can be found at:
mde.maryland.gov/programs/Water/TMDL/ApprovedFinalTMDLs/Pages/index.aspx

Maryland's NPDES Municipal Stormwater Permit Requirements

The management, restoration, and monitoring programs required by this permit are designed to control stormwater discharges to the MEP. Public education and outreach, property management, and storm drain system IDDE programs reduce the input of pollutants to the County's storm drain systems. Erosion and sediment control and stormwater management programs control stormwater discharges from new and redevelopment through the implementation of BMPs. These management programs, integrated with stormwater restoration and monitoring, described in more detail below, provide a comprehensive and adaptive approach toward improving and restoring local water resources and the Chesapeake Bay.

In compliance with §402(p)(3)(B)(iii) of the CWA, MS4 permits must require stormwater controls to reduce the discharge of pollutants to the MEP and such other provisions as the Department determines appropriate for the control of such pollutants. Additionally, by regulation under 40 CFR §122.44, BMPs and programs implemented pursuant to this permit must be consistent with applicable stormwater WLAs developed under EPA established or approved TMDLs (see list of EPA approved TMDLs incorporated as Appendix A of the permit).

Management Programs

Stormwater Management on New Development and Redevelopment

This permit requires Charles County to continue the implementation of a stormwater management program in accordance with the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland (www.lexisnexis.com/hottopics/mdcode/) and COMAR 26.17.02 (www.dsd.state.md.us/COMAR/subtitle_chapters/26_Chapters.aspx). The law and regulations require that ESD be used to the MEP to reduce runoff impacts associated with new and redevelopment. Maryland's stormwater regulations define ESD as "…using small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources." Under this definition, ESD includes conserving natural features, minimizing impervious surfaces,

slowing down runoff to promote infiltration and evapotranspiration, and using other approved nonstructural practices or innovative technologies.

The criteria for sizing ESD practices are based on capturing and retaining enough rainfall so that the runoff leaving a site is reduced to a level equivalent to a wooded site in good condition. The goal is to provide enough treatment using ESD practices to meet groundwater recharge requirements, provide water quality protection, and stream channel protection requirements by replicating woods in good condition for the 1-year, 24-hour rainfall event, or approximately 2.7 inches of rainfall over 24 hours. Managing the 1-year rainfall event on a site is equivalent to treating 98% of Maryland's average annual rainfall.

All jurisdictions in the State, including Charles County, are required to maintain and implement a stormwater management ordinance that is in compliance with the requirements of Maryland's stormwater management program. These requirements include ensuring the proper construction and maintenance of all stormwater management features through timely inspections of new ESD practices and structural stormwater management facilities. Long-term maintenance of BMPs is ensured through triennial inspections of completed ESD treatment systems and structural facilities. Maintenance procedures, including triennial inspection policies, are described in COMAR 26.17.02.11.

By following the conditions in its approved stormwater management ordinance, including mimicking natural hydrologic runoff characteristics, designing new projects to meet the woods in good condition criteria, and implementing ESD to the MEP, the County will be in compliance with this permit condition and with the requirements under 40 CFR 122.26(d)(2)(iv)(2). This includes post-construction stormwater management and also the Aligning for Growth strategy for new development described in "Maryland's Phase III Watershed Implementation Plan to Restore Chesapeake Bay by 2025" (Phase III WIP), that supports the Chesapeake Bay nutrient and sediment TMDLs.

The Department is committed to adapting Maryland's stormwater programs to address climate change. The Department recognizes the urgency needed to address climate change and this permit empowers the County to build infrastructure that meet both today's storm conditions and the future climate with more intense events. Acquiring the most up-to-date precipitation data and science is an important first step to address the impacts of climate change. The Department is updating precipitation data and integrating updated flood control standards into the statewide erosion and sediment control, and stormwater management programs. These programs are incorporated by reference into the draft permit, so changes made to the Department's regulations and guidance to address climate change will also apply to this permit.

Erosion and Sediment Control

This permit requires Charles County to implement an erosion and sediment control program in accordance with the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland (www.lexisnexis.com/hottopics/mdcode/) and COMAR 26.17.01 (www.dsd.state.md.us/COMAR/subtitle_chapters/26_Chapters.aspx). By reference, this requires the

County to ensure that all projects disturbing more than 5,000 square feet or 100 cubic yards have an approved erosion and sediment control plan; regularly inspect all active projects; maintain an effective enforcement program; have procedures to respond to complaints and violations regarding erosion and sediment control issues; and to adopt grading and building ordinances necessary to carry out the regulatory requirements. The Department reviews Charles County's program at least once every two years and has minimum standards for the design and content of erosion and sediment control plans. The incorporation of the State's program by reference in this permit is an administratively efficient way to ensure compliance with construction runoff control requirements under 40 CFR 122.26(d)(1)(v). In addition, this supports the aligning for growth strategy for new development and redevelopment described in the Maryland Phase III WIP that supports the Chesapeake Bay nutrient and sediment TMDLs.

Illicit Discharge Detection and Elimination

This permit requires Charles County to ensure that all non-stormwater discharges into, through, or from its storm sewer system, when found, are either issued a permit by the Department or eliminated. This is accomplished by maintaining a robust inspection and oversight program, including screening outfalls for dry weather discharges, conducting routine surveys of commercial and industrial areas, and maintaining the ability to take appropriate action when illicit discharges do occur (see PART IV.D.3). This permit creates four new requirements to advance Charles County's success at finding and eliminating illicit discharges. These additional requirements represent an increase in effort under the reissued permit. First, Charles County is required to review all outfalls in its jurisdiction to prioritize outfall screening locations based on the potential for polluted discharges. The process developed to prioritize outfall screenings must be submitted to the Department for review and approval. Second, the County must submit a plan and schedule for field screening prioritized outfalls for the Department's review and approval. The schedule must include screening a minimum of 100 storm drain outfalls each year to find and to eliminate any new polluted discharges. Each outfall having a dry weather discharge shall be sampled using a chemical test kit. Third, the County is required to maintain procedures for implementing the IDDE program, including investigating complaints and handling enforcement actions. Fourth, the permit includes an explicit requirement to maintain an ordinance under the IDDE program to ensure that the County has the authority to engage in enforcement actions to eliminate discovered illicit discharges. The goal of the enhanced requirements is to increase the number of illicit discharges discovered and eliminated each year. Finding and removing illicit discharges reduces pollutants from entering State waters and results in progress towards meeting State water quality standards and TMDLs.

Property Management and Maintenance

The County is required to ensure that a Notice of Intent be submitted and a pollution prevention plan developed for all County-owned facilities requiring coverage under the General Discharge Permit for Stormwater Associated with Industrial Activities. For other County-owned properties, this MS4 permit requires the County to develop and implement a good housekeeping plan where the following activities are performed: maintenance or storage of vehicles or equipment; storage of fertilizers, pesticides, landscaping materials, hazardous materials; or any other materials in a position likely to pollute stormwater runoff. These plans include an assessment of the property, focusing on activities

that may contaminate stormwater runoff, and the implementation of pollution prevention measures and stormwater BMPs to eliminate or treat any non-stormwater discharges.

This permit expands the requirements of the winter weather management program to reduce the amount of chlorides (deicing salts) entering the stormwater system, a pollutant of emerging concern (see PART IV.D.4.d). The permit requires the County to reduce the use of deicing and anti-icing materials by several methods, including: tracking and reporting of material used; tracking snow amounts; staff training; public education; and evaluation of new equipment technology and methods. Annual staff training shall include operation and proper calibration of snow removal equipment; knowledge and management of deicing and anti-icing materials; and how to improve winter weather management based on information collected during the winter season. The program shall be modeled on the winter weather management program of the Maryland Department of Transportation, State Highway Administration, as described in its annual document, *Maryland Statewide Salt Management Plan, 2020/2021*, or subsequent versions thereof.

This permit further requires the County to continue its efforts to reduce pollutants associated with the maintenance of County properties. Inlet cleaning, street sweeping, and litter pickup programs are all activities currently undertaken by Charles County along its roadways. Additionally, the County is required to reduce the use of pesticides, herbicides, and fertilizers along roadways and on County-owned properties (see PART IV.D.4 of the proposed permit). Charles County is not subject to any trash TMDLs. However, this permit requires a county-wide public education program (see below) to support and implement strategies to reduce trash (e.g., litter and floatables) including through recycling. This permit requires the County to evaluate current trash and litter control efforts; develop strategies to reduce trash, floatables, and debris in all of its watersheds; and provide public education to aid these efforts (see PART IV.D.5). The permit also requires the County to continue to remove from or prevent from entering its storm drain system 273.5 tons of trash in the first year of the permit (see PART IV.D.4.e). This amount, which is based on the County's efforts in the prior permit, may be updated annually in accordance with PART IV.E.6.a of the permit.

Public Education and Public Outreach

Charles County implements a diverse public education and outreach program that focuses on pollution prevention and includes participation in numerous public and community events to disseminate information regarding pollution prevention. The permit requires the County to implement a program that includes information about, at a minimum, the specific topics (e.g., water conservation, residential stormwater implementation and maintenance, litter reduction, pet waste management) related to stormwater management and water quality listed in the permit (see PART IV.D.5). This permit also requires the County to conduct 15 outreach efforts each year. This amount, which is based on prior permit performance, may include the distribution of printed or electronic materials, targeted workshops on stormwater management, or displays in public areas. Events should be tailored to local efforts and the Department strongly encourages the development of outreach strategies directed at underserved and underrepresented parts of the County. The Department's review of these programs will consider access to materials produced, timing, language, and participation by the diverse communities in the County. The County is further required to maintain a

complaint hotline for residents to report suspected illicit discharges, illegal dumping, and spills (see PART IV.D.5.b). Public education is a necessary component of successful TMDL restoration.

Stormwater Restoration for TMDL WLAs

MS4 permits must require stormwater controls to reduce the discharge of pollutants to the MEP and such other provisions as the Department determines appropriate for the control of such pollutants. Additionally, BMPs and programs implemented pursuant to this permit must be consistent with applicable stormwater WLAs developed under EPA established or approved TMDLs.

Under the previous permit, Charles County conducted a systematic assessment of water quality for each watershed within its jurisdiction to identify sources of pollutants in stormwater runoff and link them to specific water quality impacts. These watershed assessments included detailed water quality analyses, identified opportunities for water quality improvement, and were used as the basis for developing and implementing restoration plans to control stormwater discharges. As a result of these assessments, the County developed implementation plans for each TMDL that were subsequently approved by the Department and must be continued under this permit. Where additional information is still needed for the Department's approval of a TMDL, there is a requirement to provide this information in year one of the permit.

When new TMDLs are established or approved, Charles County is required by this permit to include strategies to meet these TMDLs by proposing a TMDL implementation plan and submitting this plan to the Department for review within one year of EPA's establishment or approval of the TMDL. This permit also requires the County to document the annual progress for all Chesapeake Bay and local TMDL implementation plans, approved by the Department, through monitoring and modeling of estimated net change in pollutant loads. Over the permit term, Charles County must evaluate and update the benchmarks and specific stormwater BMPs that need to be implemented, in an iterative and ongoing process to ensure that water quality targets and WLAs are met. Documentation of this process shall be reported in the Countywide Stormwater TMDL Implementation Plan (see PART IV.F).

This permit incorporates a list of BMPs the County is required to complete in Year 1 of the permit. The BMPs in the County's Year 1 BMP Portfolio (Appendix B of the permit) are linked to the County's Countywide Stormwater TMDL Implementation Plan. As part of each year's annual report, the County will propose a new list of BMPs to be implemented in the following year (see PART IV.E.8 and PART IV.F.3.c).

Impervious Acre Restoration

The Department uses an impervious acre restoration metric as a surrogate for measuring progress toward all nutrient and sediment related TMDLs. Impervious acre restoration represents direct or equivalent stormwater runoff treatment to the MEP. Upland stormwater BMPs, implemented according to the criteria described in Chapters 3 and 5 of the 2000 Maryland Stormwater Design Manual (Manual), provide direct impervious area treatment, removing pollutants in runoff associated with these impervious areas. An equivalent impervious acre (EIA) credit has been developed for

alternative BMPs such as street sweeping, tree planting, stream restoration, and the elimination of discovered nutrient discharges from grey infrastructure, among other approved practices. The EIA is based on reducing urban pollutant loads until they mimic the runoff from forest land cover. In addition, progress toward each specific TMDL WLA is reported by the County as part of the annual report.

Impervious Acre Accounting

In the 2021 Accounting Guidance, the Department provides updated information on how to calculate and report impervious area restoration and pollutant load reductions. The 2021 Accounting Guidance incorporates the Phase 6 Chesapeake Bay Watershed Model, new and updated BMPs approved by the CBP expert panels, an expansion of BMPs that also provide multiple benefits (e.g., increased climate resiliency and green infrastructure credits), and nutrient trading options. The nutrient load reductions for these BMP options are consistent with those used in Maryland's Phase III WIP and the resulting 2025 nutrient load targets. The 2021 Accounting Guidance was developed with the contributions of environmental non-governmental organizations, MS4 jurisdictions, State agencies, and EPA, and supersedes the 2014 Accounting Guidance.

Charles County may acquire Nutrient Credits for Total Nitrogen (TN), Total Phosphorus (TP), and Total Suspended Sediments (TSS) in accordance with COMAR 26.08.11 to meet its impervious acre restoration requirement in PART IV.E.5 of this permit. For acquiring Nutrient Credits in place of impervious acre restoration, an equivalent impervious acre is based on reducing 18.08 pounds of TN, 2.23 pounds of TP, and 8,046 pounds of TSS. These values reflect the difference in pollutant unit loads between aggregate impervious (i.e., impervious road and non-road surfaces) and the statewide average true forest land covers as estimated by the Phase 6 Chesapeake Bay Watershed Model. The County may acquire credits up to the equivalent of 108 impervious acres (10% of the total restoration target) from wastewater treatment plant sources. This cap encourages a diverse trading marketplace and cross-sector collaboration without excluding any sectors allowed to trade per COMAR and the State's Trading Program.

The Department developed an MEP analysis methodology with a set of metrics to assist Charles County in determining what level of restoration activity is achievable. The Department developed the MEP analysis methodology with input from the University of Maryland's Environmental Finance Center, which provided important national background, research, and recommendations. The MEP analysis methodology took into consideration Charles County's financial and physical capacities and limitations for implementing a comprehensive suite of restoration BMPs and stormwater management programs toward meeting the Chesapeake Bay TMDL. For example, included were a fiscal analysis incorporating median household income (MHI), willingness to pay, socioeconomic considerations, and the cost of operations and maintenance. Also included were a physical capacity analysis incorporating limitations and constraints on project scheduling, the procurement process and its impact on timing, the budget approval process, and the availability of qualified contractors. Considering the fiscal and physical capacity, the County generated a list of restoration BMPs and programs (i.e., BMP Portfolio) for implementation under this permit term. The BMP Portfolio, along with a justification narrative, was submitted to inform the Department's determination as to the level of effort required for the County to meet the MEP standard.

Based on discussions with the County regarding the justification narrative and BMP Portfolio, and comparison with the pace of past restoration trends, the Department determined that the proposed restoration of 1,083 acres is achievable. Charles County's permit that expired on December 25, 2019 required restoring 20% of its impervious area that was untreated for water quality by stormwater management, i.e., 1,577 acres. The County implemented restoration projects from 2010 through 2019 to meet and exceed this requirement at an average rate of 2.4% per year. The County's new requirement of an additional 1,083 acres requires restoring an average of 2.7% of the untreated impervious area per year, slightly more than past implementation. Charles County has the option to trade nutrient and sediment credits to meet its restoration requirement. However, as noted above, the maximum allowable credits obtained from trades with wastewater treatment plants cannot exceed 10% of the County's restoration requirement, or 108 acres.

Charles County has continued to implement restoration projects since completing the requirements of the previous permit. The impervious acres restored through these efforts will be considered toward meeting the requirements found in this permit. To ensure a steady rate of progress during the permit term, cumulative benchmarks are included in the County's Stormwater Restoration section's Table 1 (see PART IV.E.7). The cumulative benchmarks were developed by using the information presented in the County's BMP Portfolio and adjusting the cumulative percentages so that implementation would progress to restore 1,083 impervious acres by the end of the permit term. Charles County's restoration requirement is greater than the two percent per year Phase III WIP restoration goal by 294 impervious acres, advancing the achievement of all Phase I medium MS4 permittees to cumulatively exceed the two percent per year Phase III WIP restoration goal.

Charles County will provide continual outreach to the public regarding the development of new TMDL stormwater implementation plans (see PART IV.F.4). This permit requires the County to provide notice of its procedures for the public to obtain information and offer comment on the assessments and plans for new TMDLs. A minimum 30-day comment period is required prior to finalizing any assessments or plans, as well as a summary in annual reports of how the County addressed or will address any material comment received from the public.

Progress Toward Nutrient and Sediment TMDL WLAs

The impervious acre restoration requirements and associated pollutant reductions described in Charles County's MS4 permit are consistent with the Phase III WIP, and with local TMDL implementation plans. According to the Phase III WIP, "[r]ecent MS4 implementation and trend analysis indicates" that in aggregate Phase I MS4s "should be capable of annually restoring two percent of their impervious surface areas that currently have little or no stormwater treatment". This level of implementation was then used to estimate nutrient pollutant load reductions for Charles County and the State's other Phase I medium MS4s. The Department's decision to require the restoration of 1,083 impervious acres in this permit incorporates the need to be consistent with the Phase III WIP and make significant and continued progress toward achieving the Chesapeake Bay's WLAs as well as local nutrient and sediment TMDLs.

Bacteria TMDL WLAs

With respect to bacteria TMDLs, the implementation of WLAs is best addressed by eliminating bacteria at its source. Monitoring is necessary to identify the specific sources of bacteria in a watershed. To accomplish this, Charles County is required to perform bacteria trend monitoring for wildlife and domestic animal sources throughout its jurisdiction under this permit (PART IV.G.2.b.ii). Additionally, IDDE permit conditions require the screening of outfalls for dry weather flows from outfalls (PART IV.D.3.b) to identify illicit discharges, including sanitary sewer contributions that may contain bacteria from human sources. The Department has determined that the combination of these two required monitoring and screening programs are adequate to ensure progress toward implementation of all relevant bacteria WLAs within the County for this permit term.

Assessment of Controls

BMP Effectiveness Monitoring

The Chesapeake Bay Program partnership has determined that intensive monitoring on a small watershed scale where restoration efforts are being implemented is necessary to inform successful adaptive management. To support this initiative, Charles County's permit requires one of two monitoring options (see PART IV.G.1). If the County chooses, it may continue intensive monitoring and build upon past monitoring efforts at Mattawoman Creek. Alternatively, the County may choose and submit for approval a new location to assess the effects of a BMP installed for restoration. This option requires chemical, biological, and physical monitoring be used to assess small watershed restoration efforts, document BMP effectiveness and PCB monitoring, and calibrate water quality models. The *2021 MS4 Monitoring Guidelines: BMP Effectiveness and Watershed Assessments,* hereafter (2021 Monitoring Guidelines) provides technical information on the implementation of an acceptable monitoring program. The minimum criteria for chemical, biological, and physical monitoring are as follows:

Chemical Monitoring: Eight storm events shall be monitored per year in the selected watershed. A power analysis conducted on Maryland Phase I MS4 water quality data "suggests that this frequency…is sufficient to detect very strong decreases in loads and concentrations within 10 years and moderate trends (e.g., 5% per year) within 20 years" (Jepsen and Caraco 2019). Discrete samples of stormwater flow representative of each storm event shall be collected at the monitoring stations for developing event mean concentrations (EMC) for the following pollutants:

Biochemical Oxygen Demand (BOD_5) or Total Organic Carbon (TOC)
Total Nitrogen (TN)
Nitrate plus Nitrite
Total Ammonia (sewer signal)
Total Suspended Solids
E. coli or *Enterococcus*
Total Phosphorus

Orthophosphate
Chloride

Continuous measurements are also required for temperature, pH, discharge (flow), turbidity, and conductivity. Several parameters included in previous permits (e.g., copper, zinc) have been removed because their detection rates and concentrations are low, and there are no local TMDLs for these parameters.

Biological Monitoring: Benthic macroinvertebrate samples are required to be gathered each spring for gauging the biological response to stormwater discharges. A stream habitat assessment is also required using techniques defined by the EPA using Rapid Bioassessment Protocols (RBP), Maryland Biological Stream Survey (MBSS), or other similar method approved by the Department.

Physical Monitoring: A geomorphologic stream assessment is required and includes an annual comparison of permanently monumented stream channel cross-sections and the stream profile. A hydrologic and/or hydraulic model is required in the fourth year of the permit to analyze the effects of rainfall; discharge rates; stage; and, if necessary, continuous flow on channel geometry.

Continuous Flow Measurements: Flow measurements are required at the monitoring locations and will be used to estimate annual and seasonal pollutant loads and reductions, and for the calibration of watershed assessment models. Additionally, the County is required to provide a combined analysis of the chemical, biological, and physical monitoring results for the approved watershed.

The County alternatively may choose to collaborate with the Department in a Pooled Monitoring Advisory Committee (PMAC) administered by the Chesapeake Bay Trust. The committee will determine criteria for research proposals that address key questions pertaining to the cumulative impacts of watershed restoration and the effectiveness of specific restoration practices. All PMAC participants will determine monitoring needs, select appropriate studies, and contribute funding for specific projects that address permit requirements related to BMP effectiveness monitoring in a small watershed.

County Watershed Assessment Monitoring

The County is also required to select one of two available strategies for county-wide watershed assessment and trend monitoring (see PART IV.G.2). The County may choose to submit a comprehensive trend monitoring plan related to stream biology and habitat, bacteria, and chlorides. This includes monitoring biota, habitat assessment, and bacteria (*E. coli*, *Enterococcus*, or fecal coliform), and an assessment of chloride by measuring conductivity as a surrogate. Alternatively, the County may choose to accomplish this requirement through participation in the PMAC with an annual monetary contribution.

Special Programmatic Conditions

Charles County is required to offset any additional loads through Maryland's Accounting for Growth policies and procedures as articulated through Chesapeake Bay milestone achievement. Charles

County shall reflect these policies, programs, and implementation as part of its net WLA accounting. The County will further continue to work toward the completion of the State's Water Resources Element as required by the Maryland Economic Growth, Resource Protection and Planning Act of 1992 (Article 66B, Annotated Code of Maryland). The projects and programs proposed under this permit, as well as those implemented during the County's previous stormwater permits and as part of the other State and local regulations all work toward meeting these conditions.

Enforcement and Penalties

This permit regulates the discharge of stormwater into, through, or from Charles County's municipal separate storm sewer system. It also requires the County to take all reasonable steps to minimize or prevent discharges that are in violation of permit conditions. Failure to comply with a permit is a violation of the CWA and is grounds for enforcement action; penalty assessment; permit termination, revocation, or modification; or denial of a permit renewal application.

EPA affirmed in the preamble to its Municipal Separate Storm Sewer System Phase II Stormwater Rule (FR Vol. 64, No. 235, 68731) that water quality-based controls, which are implemented through the iterative process defined herein as the terms and conditions of the County's permit, are appropriate for the control of the discharge of pollutants into, through, or from the County's municipal separate storm sewer system and will result in reasonable progress toward attainment of water quality standards for this permit term. Successive iterations of the mix of BMPs and measurable goals will be driven by the objective of ensuring maintenance of water quality standards.

Public Review and Participation Opportunities

Upon advertisement, the Tentative Determination will be available on the Department's website at: mde.maryland.gov/programs/Water/StormwaterManagementProgram/Pages/storm_gen_permit.aspx

Hard copies of the draft permit may also be procured at a cost of $0.36 per page. Written requests for copies should be directed to Raymond P Bahr, Maryland Department of the Environment, Water and Science Administration, Stormwater, and Dam Safety Program, 1800 Washington Boulevard, Ste. 440, Baltimore, Maryland 21230-1708. Additional information on stormwater management in Maryland can also be found on the Department's website or by calling the Stormwater, Dam Safety, and Flood Management Program at 410-537-3543 or 1-800-633-6101.

In accordance with COMAR 26.08.04, the Department will hold an informational meeting and public hearing regarding the tentative determination permit on April 27 from 5:00 pm to 7:00 pm, at the Charles County Government Building, 200 Baltimore Street, La Plata MD 20646.

Comments on this tentative determination permit will be accepted by Raymond Bahr, Maryland Department of the Environment, Water and Science Administration, 1800 Washington Boulevard, Baltimore, Maryland, 21230, or Raymond.Bahr@Maryland.gov, if received within 90 days of publication of this notice. The 60-day extension of the comment period allowed for by section 1-606 (d) (1) (ii) of the Maryland Environment Article is being invoked to extend the usual 30-day comment period to 90 days. The Department will respond to all pertinent comments during the Final

Determination process. Once the Final Determination is issued, the public will have 30 days to request a judicial review of the permit.