FACT SHEET

NPDES Permit Number:	**MD0068276**
MDE Permit Number:	**24-DP-3313**
Public Comment Period Expiration Date:	**July 18, 2024**
Contact:	**Stewart Comstock (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:

Maryland Department of Transportation State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202
(410) 545-8407

Introduction

The Department proposes to reissue the NPDES MS4 permit for the Maryland Department of Transportation State Highway Administration or MDOT SHA (permit number MD0068276, 24-DP-3313) authorizing the discharge of stormwater into, through, or from all MS4s owned or operated by MDOT SHA. This fact sheet provides background information and explanations of the requirements in MDOT SHA'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 MDOT SHA's NPDES municipal stormwater permit program. MDOT SHA's initial permit in 1999 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 40,000 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 MDOT SHA 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., polychlorinated biphenyls or PCBs, trash, bacteria). This permit builds on new scientific knowledge as well as lessons learned under the previous permits. With these advancements, MDOT SHA will continue to be a leader in reducing stormwater pollutants locally and nationally. Most significantly, the new permit:

- Incorporates MDOT SHA's implementation of stormwater best management practices (BMPs) for impervious acre restoration using MDOT SHA'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;
- Requires MDOT SHA to develop an inventory of previously implemented green stormwater infrastructure (GSI), assess future opportunities, and make progress toward additional restoration using GSI;
- Promotes GSI in underserved and overburdened communities by requiring MDOT SHA to inventory past GSI implemented in underserved and overburdened communities, assess future opportunities, and make progress toward implementing additional GSI restoration practices in underserved and overburdened communities;
- 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 investigations to track and respond to the source of an illicit discharge;
- Increases the use of good housekeeping and pollution prevention plans for additional MDOT SHA-owned properties to have a greater impact on stormwater pollution 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 MDOT SHA the opportunity to participate in a pooled monitoring program; and
- Incorporates the 2021 updates to the *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits* (2021 Accounting Guidance) that 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 here: 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 MDOT SHA's 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 Title 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

MDOT SHA is classified as a large MS4. MDOT SHA's initial NPDES MS4 permit was issued in 1999 and reissued in 2005 and 2015. In 1999, MDOT SHA's initial permit laid the foundation for a comprehensive approach to controlling stormwater runoff. This was done by inventorying and mapping storm drain system infrastructure; identifying sources of pollution; monitoring storm events to evaluate chemical, biological, and physical stream responses; and enhancing existing management programs as well as establishing new ones. MDOT SHA's initial permit also required the construction of 20 BMP retrofit projects.

During the second permit, MDOT SHA evaluated urban runoff and water quality; prioritized watersheds in order to perform more detailed analyses and guide management implementation; and continued to restore existing impervious areas. During MDOT SHA's third permit term, extensive restoration efforts continued, and technologies were implemented for new and redevelopment projects that incorporated ESD to the MEP. Furthermore, MDOT SHA 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 MDOT SHA's NPDES municipal stormwater program and continues a long history when it comes to stormwater management. MDOT SHA has stormwater management facilities that date back to 1923. This early use of BMPs, combined with MDOT SHA's construction under the stormwater management law of 1982 enabled MDOT SHA to enter into the MS4 permitting program with practices in place. MDOT SHA is required to continue extensive efforts to implement BMPs, continuing its leadership by improving stream health 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.

This permit covers all stormwater discharges from the MS4 owned or operated by MDOT SHA in Anne Arundel, Baltimore, Carroll, Calvert, Cecil, Charles, Frederick, Harford, Howard, Montgomery, Prince George's, Queen Anne's, Saint Mary's, Washington, and Wicomico Counties; Phase II MS4s located within other federally regulated MS4 jurisdictions; and the Phase II municipalities identified in the Phase II general permit located here: https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Pages/NPDES_MS4_New.aspx.

For the purposes of determining applicable restoration requirements as well as TMDL loads, MDOT SHA owned or operated storm drain systems within the above-listed Phase I and Phase II jurisdictions shall be considered the regulated permit area. Newly designated Phase II jurisdictions include Calvert, Queen Anne's, Saint Mary's, and Wicomico Counties, as well as the municipalities of Boonsboro, Fruitland, Indian Head, La Plata, North East, Perryville, Rising Sun, and Williamsport. Subsequently, any impervious acres owned or maintained by MDOT SHA associated with these areas will be included in MDOT SHA's requirement for restoration.

MDOT SHA's Stormwater System

MDOT SHA maintains all interstates, U.S. routes, and State roads within Maryland excluding those associated with toll facilities or located in Baltimore City. The State system includes approximately 5,211 centerline miles, 14,927 lane miles, and more than 2,569 bridges. This network of highways spans numerous physiographic regions and services urban, suburban, and rural jurisdictions.

Headquartered in Baltimore, MDOT SHA's Administrative offices set statewide policies, conduct major traffic studies, and provide technical assistance to seven engineering districts that handle most of the day-to-day responsibilities.

All 23 counties fall into one of SHA's seven engineering districts. Districts 1, 2, and 6 encompass Maryland's Eastern Shore and the western part of the State where populations are considered rural. These districts contain Phase II MS4s. Conversely, Districts 3, 4, 5, and 7 are located in central Maryland and cover more urbanized areas. These urban Districts will play a vital role in MDOT SHA's NPDES stormwater permit because they are within jurisdictions having populations greater than 100,000 and are required to have NPDES municipal stormwater permits.
MDOT SHA has approximately 22,386 "minor" outfalls and 5,208 "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 various water bodies across the State and ultimately the Chesapeake Bay. Stream segments in these basins are impaired by sediments, nutrients, PCBs, trash, and bacteria. TMDLs and stormwater WLAs have been approved. 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 MDOT SHA is included as Appendix A of the permit. More information regarding approved TMDLs for MDOT SHA 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 MDOT SHA's storm drain systems. Erosion and sediment control and stormwater management programs control stormwater discharges from new development 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 MDOT SHA 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 development 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 meet 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.

In 2014, MDOT SHA was designated as the authority for stormwater management plan approval for MDOT SHA projects. MDOT SHA is required to maintain and implement a stormwater management program that is in compliance with the requirements of Maryland's stormwater management regulations. 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 stormwater management program, including mimicking natural hydrologic runoff characteristics, designing new projects to meet the woods in good condition criteria, and implementing ESD to the MEP, MDOT SHA 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 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 MDOT SHA to build infrastructure that meets 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. Inclusion of resources that use future casting and multiplier effects is under review. These programs are incorporated by reference into MDOT SHA's 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 MDOT SHA 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 MDOT SHA 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; and have procedures to respond to complaints and violations regarding erosion and sediment control issues. The Department reviews MDOT SHA's program 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 TMDL.

Illicit Discharge Detection and Elimination

This permit requires MDOT SHA 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 three new requirements to advance MDOT SHA's success at finding and eliminating illicit discharges. These additional requirements represent an increase in effort under the reissued permit. First, MDOT SHA 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, MDOT SHA 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 150 storm drain outfalls each year to find and eliminate any new polluted discharges. Each outfall having a dry weather discharge shall be sampled using a chemical test kit. Third, MDOT SHA is required to maintain procedures for implementing the IDDE program, including investigating complaints and handling enforcement actions. 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

MDOT SHA is required to ensure that a Notice of Intent be submitted and a pollution prevention plan developed for all MDOT SHA-owned facilities requiring coverage under the General Discharge Permit for Stormwater Associated with Industrial Activities. For other MDOT SHA-owned properties, this MS4 permit requires MDOT SHA 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. The permit requires MDOT SHA to continue implementing the Maryland Department of Transportation, State Highway Administration's *Maryland Statewide Salt Management Plan*, 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.

This permit further requires MDOT SHA to continue its efforts to reduce pollutants associated with the maintenance of MDOT SHA properties. Inlet cleaning, street sweeping, and litter pickup programs are all activities currently undertaken by MDOT SHA along its roadways. Inlet cleaning and street sweeping shall continue annually in the amounts outlined in Appendix B of the permit, as applicable. Appendix B will be updated annually as required in PART IV.E.11.a. Additionally, MDOT SHA is required to reduce the use of pesticides, herbicides, and fertilizers along roadways and on MDOT SHA-owned properties (see PART IV.D.4.c of the proposed permit).

In addition to permit requirements for implementing the Anacostia River Montgomery County Portion, Anacostia River Prince George's County Portion, Gwynns Falls, and Jones Falls trash TMDLs described below, this permit requires a MDOT SHA-wide program to support and implement strategies to reduce trash (e.g., litter and floatables) including through recycling (see PART IV.F.3.d.). This permit requires MDOT SHA 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 MDOT SHA to continue to remove from or prevent from entering its storm drain system 600 tons of trash in the first year of the permit (see PART IV.D.4.e). This amount, which is based on MDOT SHA's efforts in the prior permit, may be updated annually in accordance with PART IV.E.11.a of the permit.

Public Education and Public Outreach

MDOT SHA 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 MDOT SHA to implement a program that includes information about, at a minimum, the specific topics (e.g., water conservation, residential stormwater management 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 MDOT SHA to conduct a minimum of 115 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. The Department strongly encourages the development of outreach strategies directed at underserved and overburdened communities located within the MS4 permit area. The Department's review of these programs will consider access to materials produced, timing, language, and participation by the public. MDOT SHA 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, MDOT SHA 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, MDOT SHA 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, MDOT SHA 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 MDOT SHA 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, MDOT SHA 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 MDOT SHA-wide TMDL Stormwater Implementation Report (see PART IV.F).

With the first annual report submitted under this permit and using the BMP Portfolio format found in Appendix B of the permit, MDOT SHA is required to develop a list of BMPs that are planned to be completed in Year 2 of the permit. As part of each year's annual report, MDOT SHA will propose a new list of BMPs to be implemented in the following year (see PART IV.E.11.a and PART IV.F.3.c). The BMPs in the BMP Portfolio are linked to the MDOT SHA-wide TMDL Stormwater Implementation Report.

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 MDOT SHA as part of the annual report in the MDOT SHA-wide Stormwater TMDL Implementation Plan (see PART IV.F).

Impervious Acre Accounting

In the 2021 Accounting Guidance, the Department provides updated information on how to calculate and report impervious acre 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.

The Department developed an MEP analysis methodology with a set of metrics to assist MDOT SHA in determining what level of restoration activity is achievable. The MEP analysis methodology took into consideration MDOT SHA's physical capacity and limitations for implementing a comprehensive suite of restoration BMPs and stormwater management programs toward meeting the Chesapeake Bay TMDL. For example, included was a physical capacity analysis incorporating limitations and constraints on project scheduling and available rights-of-way, the procurement process and its impact on timing, the budget approval process, and the availability of qualified contractors. Considering the physical capacity, MDOT SHA 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 MDOT SHA to meet the MEP standard.

Based on discussions with MDOT SHA regarding the justification narrative and BMP Portfolio that proposed 2,871 impervious acres, and recognizing MDOT SHA's exemplary performance, the Department determined that additional restoration is achievable. Specifically, the Department concluded, based on MDOT SHA's concurrence, that green infrastructure and climate resiliency incentives can be implemented, along with redevelopment and new BMPs included in the 2021 Guidance (e.g., urban soil restoration, floating treatment wetlands, riparian buffers, and conservation of forests). Therefore, the Department increased the restoration required for this permit term to 3,046 impervious acres recognizing these unrealized opportunities for credits based on the 2021 Accounting Guidance.

MDOT SHA, as a State agency, is leading by example with its continued restoration efforts. MDOT SHA's permit that expired on October 8, 2020 required restoring 20% of its impervious acres that were untreated for water quality by stormwater management, i.e., 4,621 acres. MDOT SHA met the 20% requirement by the end of its administratively continued permit (i.e., October 8, 2020), restoring a total of 6,127 impervious acres. MDOT SHA has implemented restoration projects since completing the requirements of the previous permit, restoring an additional 661 impervious acres. In total, MDOT SHA has restored 2,167 impervious acres in addition to 4,621 impervious acres (i.e., 20%) as required by the expired permit. The impervious acres restored through these efforts will be considered toward meeting the requirements found in this permit.

To promote the use of green stormwater infrastructure, MDOT SHA is required to make progress toward impervious acre restoration using GSI practices identified in Table 19, Table 20, and Section V.3 Land Cover Conversion BMPs of the 2021 Accounting Guidance. Additionally, MDOT SHA shall make progress toward impervious acre restoration using GSI in underserved or overburdened communities. For the purposes of the permit, underserved communities are defined in the Environment Article, Title 1, Subtitle 7, Annotated Code of Maryland as "any census tract in which, according to the most recent U.S. Census Bureau Survey", "At least 25% of the residents qualify as low-income;" "At least 50% of the residents identify as nonwhite;" or "At least 15% of the residents have limited English proficiency." Likewise, an "overburdened community" is "any census tract for which three or more of the" 21 environmental health indicators identified in the Environment Article §1-701.(a)(7), Annotated Code of Maryland, "are above the 75th percentile statewide".

MDOT SHA 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. MDOT SHA may acquire credits up to the equivalent of 609 impervious acres (20% 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.

To ensure a steady rate of progress during the permit term, cumulative benchmarks are included in the permit in the Stormwater Restoration section in Table 1 (see PART IV.E.10). The cumulative benchmarks were developed by adjusting the cumulative percentages so that implementation would progress to restore 3,046 impervious acres by the end of the permit term. MDOT SHA's restoration requirement is greater than the two percent per year Phase III WIP restoration goal by 318 impervious acres.

MDOT SHA will provide continual outreach to the public regarding the development of new TMDL stormwater implementation plans (see PART IV.F.4). This permit requires MDOT SHA 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 MDOT SHA 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 MDOT SHA'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 MDOT SHA and the State's other Phase I medium and large MS4s. The Department's decision to require the restoration of 3,046 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.

Trash TMDL WLAs

With respect to the trash TMDLs for the Anacostia River Montgomery County Portion, Anacostia River Prince George's County Portion, Gwynns Falls, and Jones Falls, MDOT SHA is required to annually reduce 6,044, 14,134, 2,300, and 1,419 pounds of trash, respectively, and report on the ongoing efforts to meet the requirements of this TMDL as described above (See PART IV.F.3.d). The permit requires MDOT SHA to report progress toward implementing practices and projects to achieve the trash allocations. This includes reporting on efforts to reduce trash and meet trash WLAs, effectiveness of public education and outreach efforts, and any modifications necessary to improve source reduction and proper disposal.

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, MDOT SHA 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). MDOT SHA alternatively may choose to collaborate with the Department in a Pooled Monitoring Advisory Committee (PMAC) administered by the Chesapeake Bay Trust (see Assessment of Controls below for more information). Additionally, IDDE permit conditions require the screening of outfalls for dry weather flows (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 MDOT SHA for this permit term.

PCB TMDL WLAs

MDOT SHA is required to develop a source tracking monitoring plan for all PCB TMDL WLAs where watershed reductions are required to meet water quality standards (PART IV.G.3). MDOT SHA shall submit results and provide updates annually on its monitoring efforts. This is currently the most effective and efficient means of locating sources of PCBs in the landscape and reducing loads to a waterbody.

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, MDOT SHA's permit requires one of two monitoring options (see PART IV.G.1). If MDOT SHA chooses, it may continue intensive monitoring and build upon past monitoring efforts at the Little Catoctin Creek watershed. Alternatively, MDOT SHA 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: Twelve 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* spp.
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, MDOT SHA is required to provide a combined analysis of the chemical, biological, and physical monitoring results for the approved watershed.

MDOT SHA alternatively may choose to collaborate with the Department in a 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.

MDOT SHA Watershed Assessment Monitoring

MDOT SHA is also required to select one of two available strategies for MDOT SHA-wide watershed assessment and trend monitoring (see PART IV.G.2). MDOT SHA 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, MDOT SHA may choose to accomplish this requirement through participation in the PMAC with an annual monetary contribution.

Special Programmatic Conditions

MDOT SHA is required to offset any additional loads through Maryland's Aligning for Growth policies and procedures as articulated through Chesapeake Bay milestone achievement. MDOT SHA shall reflect these policies, programs, and implementation as part of its net WLA accounting. MDOT SHA 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 MDOT SHA'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 MDOT SHA's municipal separate storm sewer system. It also requires MDOT SHA 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 MDOT SHA's permit, are appropriate for the control of the discharge of pollutants into, through, or from MDOT SHA'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 Stewart Comstock, Maryland Department of the Environment, Water and Science Administration, Stormwater, Dam Safety, and Flood Management Program, 1800 Washington Boulevard, 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 June 4, 2024 from 11:00 AM to 1:00 PM at the Department's Aeris and Aqua Conference Rooms at 1800 Washington Boulevard, Baltimore, MD. Comments on this tentative determination permit will be accepted by Stewart Comstock, Maryland Department of the Environment, Water and Science Administration, 1800 Washington Boulevard, Baltimore, Maryland, 21230, or Stewart.Comstock@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.