

MARYLAND DEPARTMENT OF THE ENVIRONMENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT

PART I. IDENTIFICATION

A. **Permit Number:** 11-DP-3313 (MD0068276)

B. **Permit Area**

This permit covers stormwater discharges from the municipal separate storm sewer system (MS4) owned or operated by the Maryland State Highway Administration (SHA) located in all Maryland Phase I and Phase II jurisdictions including, but not limited to, Anne Arundel, Baltimore, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, Prince George's, and Washington counties, and regulated State and federal entities.

C. **Effective Date:** To be determined

D. **Expiration Date:** To be determined

PART II. DEFINITIONS

Terms used in this permit are defined in relevant chapters of Title 40 of the Code of Federal Regulations (CFR) Parts 122-124 or the Code of Maryland Regulations (COMAR) 26.08.01, 26.17.01, and 26.17.02. Terms not defined in CFR or COMAR shall have the meanings attributed by common use.

PART III. WATER QUALITY

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

1. Effectively prohibit pollutants in stormwater discharges or other unauthorized discharges into the MS4 as necessary to comply with Maryland's receiving water quality standards;
2. Attain applicable wasteload allocations (WLAs) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with Title 33 of the U.S. Code (USC) § 1342(p)(3)(B)(iii); 40 CFR § 122.44(k)(2) and (3); and
3. Comply with all other provisions and requirements contained in this permit, and in plans and schedules developed in fulfillment of this permit.

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

PART IV. STANDARD PERMIT CONDITIONS

A. Permit Administration

SHA shall designate an individual to act as a liaison with the Maryland Department of the Environment (MDE) for the implementation of this permit. SHA shall provide the coordinator's name, title, address, phone number, and email address. Additionally, SHA shall in its annual reports submit to MDE an organizational chart detailing personnel and groups responsible for major NPDES program tasks in this permit. MDE shall be notified of any changes in personnel or organization relative to NPDES program tasks.

B. Legal Authority

SHA shall carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions according to 40 CFR 122.26, including the prohibition on illicit discharges to the MS4 owned or operated by SHA. In cases where violations are discovered from adjacent land uses, SHA will contact the appropriate jurisdiction with legal authority over the adjacent land uses and report the violations. All inspections, violations, jurisdiction contacts, and resolution schedules will be included in SHA's annual report.

C. Source Identification

Sources of pollutants in stormwater runoff within the permit area shall continue to be identified and linked to specific water quality impacts on a watershed basis. Data collected as a result of source identification shall be shared with surrounding NPDES counties and used for watershed restoration planning. The source identification process shall be used to aid in the development of watershed restoration plans. The following information shall be submitted annually for all SHA stormwater infrastructure within the permit area in geographic information system (GIS) format with associated tables as required in PART V of this permit:

1. Storm drain system: all infrastructure, major outfalls, inlets, and associated drainage areas delineated;
2. Industrial and commercial sources: industrial and commercial land uses and sites that the SHA has determined have the potential to contribute significant pollutants to SHA storm drain systems;
3. Urban best management practices (BMPs): stormwater management facility data including outfall locations and delineated drainage areas;

4. Impervious surfaces: SHA-owned and private land use (if within SHA BMP drainage area) delineated, controlled and uncontrolled impervious areas based on, at a minimum, Maryland's hierarchical eight-digit sub-basins;
5. Monitoring locations: locations established for chemical, biological, and physical monitoring of watershed restoration efforts and the *2000 Maryland Stormwater Design Manual*; and
6. Water quality improvement projects: projects proposed, under construction, and completed with associated drainage areas delineated, when applicable.

D. Management Programs

The following management programs shall be implemented in areas served by SHA's MS4. These management programs are designed to control stormwater discharges to the maximum extent practicable (MEP) and shall be maintained for the term of this permit. Additionally, these programs shall be integrated with other permit requirements to promote a comprehensive adaptive approach toward solving water quality problems. SHA shall make needed program improvements identified as a result of periodic evaluations by MDE.

1. Stormwater Management

An acceptable stormwater management program shall continue to be maintained in accordance with the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland. Activities to be undertaken by SHA shall include, but not be limited to:

- a. Implementing the stormwater management design policies, principles, methods, and practices found in the latest version of the *2000 Maryland Stormwater Design Manual* for SHA projects. This includes:
 - i. Complying with the Stormwater Management Act of 2007 (Act) by implementing environmental site design (ESD) to the MEP for new and redevelopment projects;
 - ii. Tracking the progress toward satisfying the requirements of the Act and identifying and reporting annually the problems and modifications necessary to implement ESD to the MEP; and
 - iii. Reporting annually the modifications that have been or need to be made to plan review and approval processes to comply with the requirements of the Act.
- b. Maintaining programmatic and implementation information including, but not limited to:
 - i. Number of Concept, Site Development, and Final plans received. Plans that are re-submitted as a result of a revision or in response to comments should not be considered as a separate project;

- ii. Number of redevelopment projects received;
- iii. Number of stormwater exemptions issued; and
- iv. Number and type of waivers received and issued, including those for quantity control, quality control, or both. Multiple requests for waivers may be received for a single project and each should be counted separately, whether part of the same project or plan. The total number of waivers requested and granted for qualitative and quantitative control shall be documented.

Stormwater program data shall be recorded on MDE's annual report database and submitted as required in PART V of this permit.

- c. Maintaining construction inspection information according to COMAR 26.17.02 for all ESD treatment practices and structural stormwater management facilities including the number of inspections conducted and any enforcement actions.
- d. Conducting preventative maintenance inspections, according to COMAR 26.17.02, of all ESD treatment systems and structural stormwater management facilities at least on a triennial basis. Documentation identifying the ESD systems and structural stormwater management facilities inspected, the number of maintenance inspections and follow-up inspections, actions used to ensure that stormwater controls are adequately maintained, cooperation with MDE regarding enforcement, and any other relevant information shall be submitted in SHA's annual reports.

2. Erosion and Sediment Control

An acceptable erosion and sediment control program shall continue to be maintained and implemented in accordance with the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland. Activities to be undertaken by SHA shall include, but not be limited to:

- a. Implementing program improvements identified in any MDE evaluation of SHA's erosion and sediment control program;
- b. Ensure that construction site operators have received training regarding erosion and sediment control compliance and hold a valid Responsible Personnel Certification as required by MDE;
- c. Recording program activity on MDE's annual report database and submitted as required in PART V of this permit; and
- d. Ensuring that all applicable construction projects obtain a notice of intent (NOI) for stormwater associated with construction activity.

3. Illicit Discharge Detection and Elimination

SHA shall continue to implement an inspection and enforcement program to ensure that all discharges to and from the MS4 that are not composed entirely of stormwater are either permitted by MDE or eliminated. Activities shall include, but not be limited to:

- a. Field screening at least 150 outfalls annually. Each outfall having a dry weather discharge shall be sampled using a chemical test kit. Within one year of permit issuance, an alternative program may be submitted for MDE approval that methodically identifies, investigates, and eliminates illegal connections to SHA's storm drain system;
- b. Conducting annual visual surveys of commercial and industrial areas as identified in PART IV.C.2. above for discovering, documenting, and eliminating pollutant sources. Areas surveyed shall be reported annually;
- c. Maintaining a program to address and, if necessary, respond to illegal discharges, dumping, and spills;
- d. Using appropriate procedures for investigating and reporting illicit discharges, illegal dumping, and spills to local or State authorities as applicable for control or clean-up. Significant discharges shall be reported to MDE for enforcement and/or permitting;
- e. Coordinate with surrounding jurisdictions when illicit connections originate from beyond SHA's rights-of-way; and
- f. Reporting illicit discharge detection and elimination activities as specified in PART V of this permit.

4. Trash and Litter

This section of the permit requires SHA to address problems associated with litter and floatables in waterways that adversely affect water quality. Increases in trash discharges to receiving waters have become a growing concern both nationally and within Maryland and cannot be ignored. SHA needs to evaluate current litter control problems associated with discharges from its storm drain system and develop and implement a public outreach and education program as needed.

- a. SHA shall document litter control problems on its properties, ways of eliminating litter, and opportunities for overall improvement.
- b. Within one year of permit issuance, as part of the public education program described in Part IV.D.6., SHA shall develop and implement a public education and outreach program with specific performance goals to reduce littering. This shall include:

- i. Educating the transportation community on the importance of reducing, reusing, and recycling;
 - ii. Disseminating information by using signs, articles, and other media outlets; and
 - iii. Promoting educational programs for SHA employees, consultants, contractors, traveling/trucking public, vacationers and commuters, etc.
- c. Evaluating annually the effectiveness of the education program.
- d. Submit annually, a report that details progress toward implementing the public education and outreach program and trash reduction strategies. The report shall describe the status of public outreach efforts including resources (e.g., personnel and financial) expended and the effectiveness of all program components.

5. Property Management and Maintenance

- a. SHA shall ensure that an NOI has been submitted to MDE and a pollution prevention plan developed for each SHA-owned facility requiring NPDES stormwater general permit coverage. The status of pollution prevention plan development and implementation for each SHA-owned municipal facility shall be reviewed, documented, and submitted to MDE annually.
- b. SHA shall continue to implement a program to reduce pollutants associated with maintenance activities at SHA-owned facilities including garages, roadways parking lots, rest areas, and park and rides. The maintenance program, shall include, but not be limited to, these activities:
 - i. Street sweeping;
 - ii. Inlet inspection and cleaning;
 - iii. Minimize the use of pesticides, herbicides, fertilizers, and other pollutants associated with vegetation management through increased use of integrated pest management;
 - iv. Minimize to the MEP the use of winter weather deicing materials through research, continual testing and improvement of materials, equipment calibration, employee training, and effective decision-making; and
 - v. Ensuring that all SHA staff receives adequate training in pollution prevention and good housekeeping practices.

SHA shall report annually on the changes in any maintenance practices and the overall pollutant reductions resulting from the maintenance program. Within one year of permit issuance, an alternative maintenance program may be submitted for MDE approval indicating the activities to be undertaken and associated pollutant reductions.

6. Public Education

SHA shall continue to implement a public education and outreach program to reduce stormwater pollutants. Outreach efforts may be integrated with other aspects of SHA's activities. These efforts are to be documented and summarized in each annual report. SHA shall continue to implement a public outreach and education campaign with specific performance goals and deadlines to:

- a. Maintain a compliance hotline or similar mechanism for public reporting of water quality complaints, including suspected illicit discharges, illegal dumping, and spills.
- b. Provide information to the transportation community about the benefits of:
 - i. Stormwater management implementation and facility maintenance;
 - ii. Proper erosion and sediment control practices;
 - iii. Increasing proper disposal of vehicle fluids such as brake fluid or motor oil (not in inlets or catch basins);
 - iv. Refraining from and reporting roadside dumping;
 - v. Proper litter and trash disposal;
 - vi. Decreasing vehicle idling;
 - vii. Utilizing alternative modes of transportation (bus, train, walking, biking, carpooling);
 - viii. Car care and washing; and
 - ix. Proper pet waste management at rest areas and welcome centers.
- c. Provide information regarding the following water quality issues to the regulated community when requested:
 - i. NPDES permitting requirements;
 - ii. Pollution prevention plan development;
 - iii. Proper housekeeping; and
 - iv. Spill prevention and response.

E. Restoration Plans and Total Maximum Daily Loads

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. By regulation at 40 CFR §122.44, BMPs and programs implemented pursuant to this permit must be consistent with applicable WLAs developed under EPA approved TMDLs.

In pursuit of these goals, SHA shall coordinate watershed assessments with surrounding jurisdictions and annually report on restoration plans, opportunities for public participation, and TMDL compliance status to MDE. As required below, watershed assessments and restoration plans shall include a thorough discussion of water quality analysis findings based on coordination

with surrounding jurisdictions, TMDL documents and other resources when available, identification of water quality improvement opportunities, and a schedule for BMP and programmatic implementation to meet stormwater WLAs included in EPA approved TMDLs. SHA shall address both specific WLAs and target loads when SHA is part of larger aggregate loads. A list of EPA approved TMDLs for SHA in the permit area is included in Attachment B of the permit.

1. Watershed Assessments

- a. SHA shall coordinate watershed assessments with surrounding jurisdictions, which shall include, but not be limited to the evaluation of available State and county watershed assessments, SHA data, visual watershed inspections targeting SHA rights-of-way and facilities, and approved stormwater WLAs to:
 - i. Determine current water quality conditions;
 - ii. Include the results of visual inspections targeting SHA rights-of-way and facilities conducted in areas identified as priority for restoration;
 - iii. Identify and rank water quality problems for restoration associated with SHA rights-of-way and facilities;
 - iv. Using the watershed assessments established under section a. above to achieve water quality goals by identifying all structural and nonstructural water quality improvement projects to be implemented; and
 - v. Specify pollutant load reduction benchmarks and deadlines that demonstrate progress toward meeting all applicable stormwater WLAs.

2. Restoration Plans

- a. Within one year of permit issuance, SHA shall submit an impervious surface area assessment consistent with the methods described in the MDE document “Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits” (MDE, August 2014 or subsequent versions). Upon approval by MDE, this impervious surface area assessment shall serve as the baseline for the restoration efforts required in this permit.

By the end of this permit term, SHA shall commence and complete the implementation of restoration efforts for twenty percent of SHA’s impervious surface area consistent with the methodology described in the MDE document cited in PART IV.E.2.a. that has not already been restored to the MEP. Equivalent acres restored of impervious surfaces, through new retrofits or the retrofit of pre-2002 structural BMPs, shall be based upon the treatment of the WQ_v criteria and associated list of practices defined in the *2000 Maryland Stormwater Design Manual*. For alternate BMPs, the basis for calculation of equivalent impervious acres restored is based upon the pollutant loads from forested cover.

- b. Within one year of permit issuance, a coordinated TMDL implementation plan shall be submitted to MDE for approval that addresses all EPA approved stormwater WLAs (prior to the effective date of the permit) and requirements of Part VI.A., Chesapeake Bay Restoration by 2025 for SHA's storm sewer system. Both specific WLAs and aggregate WLAs which SHA is a part of shall be addressed in the TMDL implementation plans. Any subsequent stormwater WLAs for SHA's storm sewer system shall be addressed by the coordinated TMDL implementation plan within one year of EPA approval. Upon approval by MDE, this implementation plan will be enforceable under this permit. As part of the coordinated TMDL implementation plan, SHA shall:
- i. Include the final date for meeting applicable WLAs and a detailed schedule for implementing all structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives necessary for meeting applicable WLAs;
 - ii. Provide detailed cost estimates for individual projects, programs, controls, and plan implementation;
 - iii. Evaluate and track the implementation of the coordinated implementation plan through monitoring or modeling to document the progress toward meeting established benchmarks, deadlines, and stormwater WLAs; and
 - iv. Develop an ongoing, iterative process that continuously implements structural and nonstructural restoration projects, program enhancements, new and additional programs, and alternative BMPs where EPA approved TMDL stormwater WLAs are not being met according to the benchmarks and deadlines established as part of the SHA's watershed assessments.

3. Public Participation

SHA shall provide opportunity to the public regarding the development of its coordinated TMDL implementation plan by allowing for public participation, soliciting input, and incorporating any relevant ideas and program improvements that can aid in achieving TMDLs and water quality standards according to the actions below. SHA shall provide:

- a. Notice in a regional newspaper and SHA's website outlining how the public may obtain information on the development of the coordinated TMDL implementation plan and opportunities for comment;
- b. Procedures for providing copies of the coordinated TMDL implementation plan to interested parties upon request;
- c. A minimum 30 day comment period before finalizing the coordinated TMDL implementation plan; and
- d. A summary in each annual report of how SHA addressed or will address any material comment received from the public.

4. TMDL Compliance

SHA shall evaluate and document its progress toward meeting all applicable stormwater WLAs included in EPA approved TMDLs. An annual TMDL assessment report with tables shall be submitted to MDE. This assessment shall include complete descriptions of the analytical methodology used to evaluate the effectiveness of SHA's restoration plans and how these plans are working toward achieving compliance with EPA approved TMDLs. SHA shall further provide:

- a. Estimated net change in pollutant load reductions from all completed structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives;
- b. A comparison of the net change in pollutant load reductions detailed above with the established benchmarks, deadlines, and applicable stormwater WLAs;
- c. Itemized costs for completed projects, programs, and initiatives to meet established pollutant reduction benchmarks and deadlines;
- d. Cost estimates for completing all projects, programs, and alternatives necessary for meeting applicable stormwater WLAs; and
- e. A description of a plan for implementing additional watershed restoration actions that can be enforced when benchmarks, deadlines, and applicable stormwater WLAs are not being met or when projected funding is inadequate.

F. Assessment of Controls

SHA and ten other municipalities in Maryland have been conducting discharge characterization monitoring since the early 1990s. From this expansive monitoring, a statewide database has been developed that includes hundreds of storms across numerous land uses. Analyses of this dataset and other research performed nationally effectively characterize stormwater runoff in Maryland for NPDES municipal stormwater purposes. To build on the existing information and to better track progress toward meeting TMDLs, better data are needed on ESD performance and BMP efficiencies and effectiveness.

Assessment of controls is critical for determining the effectiveness of the NPDES stormwater management program and progress toward improving water quality. SHA shall use chemical, biological, and physical monitoring to assess watershed restoration efforts, document BMP effectiveness, or calibrate water quality models for showing progress toward meeting any applicable WLAs developed under EPA approved TMDLs identified above. Additionally, SHA shall propose a stream monitoring site to assess the implementation of the latest version of the *2000 Maryland Stormwater Design Manual*. Specific monitoring requirements are described below.

1. Watershed Restoration Assessment

SHA shall continue monitoring in the Montgomery County Seneca Creek watershed, or, select and submit for MDE's approval a new watershed restoration project for monitoring. Monitoring activities shall occur where the cumulative effects of watershed restoration activities can be assessed. One outfall and an associated in-stream station, or other locations based on a study design approved by MDE, shall be monitored. The minimum criteria for chemical, biological, and physical monitoring are as follows:

a. Chemical Monitoring:

- i. Twelve (12) storm events shall be monitored per year at each monitoring location with at least three occurring per quarter. Quarters shall be based on the calendar year. If extended dry weather periods occur, baseflow samples shall be taken at least once per month at the monitoring stations if flow is observed;
- ii. Discrete samples of stormwater flow shall be collected at the monitoring stations using automated or manual sampling methods. Measurements of pH and water temperature shall be taken;
- iii. At least three (3) samples determined to be representative of each storm event shall be submitted to a laboratory for analysis according to methods listed under 40 CFR Part 136 and event mean concentrations (EMC) shall be calculated for:

Biochemical Oxygen Demand (BOD ₅)	Total Lead
Total Kjeldahl Nitrogen (TKN)	Total Copper
Nitrate plus Nitrite	Total Zinc
Total Suspended Solids	Total Phosphorus
Total Petroleum Hydrocarbons (TPH)	Hardness
E. coli or enterococcus	

- iv. Continuous flow measurements shall be recorded at the in-stream monitoring station or other practical locations based on the approved study design. Data collected shall be used to estimate annual and seasonal pollutant loads and reductions, and for the calibration of watershed assessment models. Pollutant load estimates shall be reported according to any EPA approved TMDLs with stormwater WLAs.

b. Biological Monitoring:

- i. Benthic macroinvertebrate samples shall be gathered each Spring between the outfall and in-stream stations or other practical locations based on an MDE approved study design; and
- ii. SHA shall use the EPA Rapid Bioassessment Protocols (RBP), Maryland Biological Stream Survey (MBSS), or other similar method approved by MDE.

c. Physical Monitoring:

- i. A geomorphologic stream assessment shall be conducted between the outfall and in-stream monitoring locations or in a reasonable area based on the approved study design. This assessment shall include an annual comparison of permanently monumented stream channel cross-sections and the stream profile;
- ii. A stream habitat assessment shall be conducted using techniques defined by the EPA's RBP, MBSS, or other similar method approved by MDE; and
- iii. A hydrologic and/or hydraulic model shall be used (e.g., TR-20, HEC-2, HEC-RAS, HSPF, SWMM, etc.) in the fourth year of the permit to analyze the effects of rainfall; discharge rates; stage; and, if necessary, continuous flow on channel geometry.

d. Annual Data Submittal: SHA shall describe in detail its monitoring activities for the previous year and include the following:

- i. EMCs submitted on MDE's long-term monitoring database as specified in PART V below;
- ii. Chemical, biological, and physical monitoring results and a combined analysis for the approved monitoring locations; and
- iii. Any requests and accompanying justifications for proposed modifications to the monitoring program.

2. Stormwater Management Assessment

SHA shall select a site to monitor, develop a monitoring plan, and submit for MDE's approval within 1 year of permit issuance for determining the effectiveness of stormwater management practices for stream channel protection as implemented under the latest stormwater regulations. Physical stream monitoring protocols shall include:

- a. An annual stream profile and survey of permanently monumented cross-sections at the approved monitoring site to evaluate channel stability in conjunction with surrounding and on-going development;
- b. A comparison of the annual stream profile and survey of the permanently monumented cross-sections with baseline conditions for assessing areas of aggradation and degradation; and
- c. A hydrologic and/or hydraulic model shall be used (e.g., TR-20, HEC-2, HEC-RAS, HSPF, SWMM, etc.) in the fourth year of the permit to analyze the effects of rainfall; discharge rates; stage; and, if necessary, continuous flow on channel geometry.

G. Program Funding

1. Annually, a fiscal analysis of the capital, operation, and maintenance expenditures necessary to comply with all conditions of this permit shall be submitted as required in PART V below.
2. Adequate program funding to comply with all conditions of this permit shall be maintained. Lack of funding does not constitute a justification for noncompliance with the terms of this permit.

PART V. PROGRAM REVIEW AND ANNUAL PROGRESS REPORTING

A. Annual Reporting

1. Annual progress reports, required under 40 CFR 122.42(c), will facilitate the long-term assessment of SHA's NPDES stormwater program. SHA shall submit annual reports on or before the anniversary date of this permit and post these reports on SHA's website. All information, data, and analyses shall be based on the State fiscal year and include:
 - a. The status of implementing the components of the stormwater management program that are established as permit conditions including:
 - i. Source Identification;
 - ii. Stormwater Management;
 - iii. Erosion and Sediment Control;
 - iv. Illicit Discharge Detection and Elimination;
 - v. Trash and Litter;
 - vi. Property Management and Maintenance;
 - vii. Public Education;
 - viii. Watershed Assessment;
 - ix. Restoration Plans;
 - x. TMDL Compliance;
 - xi. Assessment of Controls; and
 - xii. Program Funding.
 - b. A narrative summary describing the results and analyses of data, including monitoring data that is accumulated throughout the reporting year;
 - c. Expenditures for the reporting period and the proposed budget for the upcoming year;
 - d. A summary describing public education programs;
 - e. The identification of water quality improvements and documentation of attainment and/or progress toward attainment of benchmarks and applicable

WLAs developed under EPA approved TMDLs; and

- f. The identification of any proposed changes to SHA's program when WLAs are not being met.
2. To enable MDE to evaluate the effectiveness of permit requirements, the following information shall be submitted in a format consistent with Attachment A:
 - a. Storm drain system mapping (PART IV.C.1.);
 - b. Urban BMP locations (PART IV.C.3.);
 - c. Impervious surfaces (PART IV.C.4.);
 - d. Water quality improvement project locations (PART IV.C.6.);
 - e. Monitoring site locations (PART IV.C.5.);
 - f. Chemical monitoring results (PART IV.F.1.);
 - g. Pollutant load reductions (PART IV.E.4. and IV.F.1);
 - h. Biological and habitat monitoring (PART IV.F.1.);
 - i. Illicit discharge detection and elimination activities (PART IV.D.3.);
 - j. Erosion and sediment control and stormwater program information (PART IV.D.1. and IV.D.2.); and
 - k. Fiscal analyses - cost for NPDES related implementation (PART IV.G.).
3. Because this permit uses an iterative approach to implementation, SHA must evaluate the effectiveness of its programs in each annual report. Program modifications shall be made within 12 months if SHA's annual report does not demonstrate compliance with this permit and show progress toward meeting stormwater WLAs developed under EPA approved TMDLs.

B. Program Review

In order to assess the effectiveness of SHA's NPDES program for eliminating non-stormwater discharges through the illicit connection program and reducing the discharge of pollutants to protect water quality, MDE will review program implementation, annual reports,

and periodic data submittal. Procedures for the review of erosion and sediment control and stormwater management programs exist in Maryland's sediment control and stormwater management laws. Additional evaluations may be conducted at MDE's discretion to determine compliance with permit conditions.

C. Reapplication for NPDES Stormwater Discharge Permit

This permit is effective for no more than five years, unless administratively continued by MDE. Continuation or reissuance of this permit beyond this permit term will require SHA to reapply for NPDES stormwater discharge permit coverage in its fourth year annual report. Failure to reapply for coverage constitutes a violation of this permit.

As part of this reapplication process, SHA shall submit to MDE an executive summary of its NPDES stormwater management program that specifically describes how SHA has thoroughly evaluated its storm drain system and progressed in implementing water quality improvements. This application shall be used to gauge the effectiveness of SHA's NPDES stormwater program and will provide guidance for developing future permit conditions. At a minimum, the application summary shall include:

1. SHA's NPDES stormwater program goals;
2. Program summaries for the permit term regarding:
 - a. Illicit discharge detection and elimination results;
 - b. Restoration plan status including SHA totals for impervious acres, impervious acres controlled by stormwater management, the current status of water quality improvement projects and acres managed, and documentation of progress toward meeting stormwater WLAs developed under EPA approved TMDLs and compliance with Part VI.A.;
 - c. Pollutant load reductions as a result of this permit and an evaluation of whether applicable TMDLs are being achieved;
 - d. Impervious acres compared to the baseline and twenty percent restoration requirement in PART IV.E.2.a.; and
 - e. Other relevant data and information for describing applicable SHA programs;
3. Program operation and capital improvement costs for the permit term; and
4. Descriptions of any proposed permit condition changes based on analyses of the successes and failures of SHA's efforts to comply with the conditions of this permit.

PART VI. SPECIAL PROGRAMMATIC CONDITIONS

A. Chesapeake Bay Restoration by 2025

A Chesapeake Bay TMDL has been developed by the EPA for the six Bay States (Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia) and the District of Columbia. The TMDL describes the level of effort that will be necessary for meeting water quality criteria and restoring the Chesapeake Bay. This permit is requiring compliance with the Chesapeake Bay TMDL through the use of a strategy that calls for the restoration of twenty percent of previously developed impervious land with little or no controls within this five year permit term as described in Maryland's Watershed Implementation Plan. The TMDL is an aggregate of nonpoint sources or the load allocations (LA), and point sources or WLAs, and a margin of safety. The State is required to issue NPDES permits to point source discharges that are consistent with the assumptions of any applicable TMDL, including those approved subsequent to permit issuance.

Urban stormwater is defined in the CWA as a point source discharge and will subsequently be a part of Maryland's Chesapeake Bay WLA. The NPDES stormwater permits can play a significant role in regulating pollutants from Maryland's urban sector and in the development of Chesapeake Bay Watershed Implementation Plans. Therefore, Maryland's NPDES stormwater permits issued to SHA and other municipalities will require coordination with MDE's Watershed Implementation Plan and be used as the regulatory backbone for controlling urban pollutants toward meeting the Chesapeake Bay TMDL by 2025.

PART VII. ENFORCEMENT AND PENALTIES

A. Discharge Prohibitions and Receiving Water Limitations

SHA shall prohibit non-stormwater discharges through its MS4. NPDES permitted non-stormwater discharges are exempt from this prohibition. Discharges from the following will not be considered a source of pollutants when properly managed: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated ground water infiltration to separate storm sewers; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; air conditioning condensation; irrigation waters; springs; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; de-chlorinated swimming pool discharges (not including filter backwash); street wash water; and fire fighting activities.

Consistent with § 402(p)(3)(B)(iii) of the CWA, the SHA shall take all reasonable steps to minimize or prevent the contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into any waters of the State, that will render the waters harmful to:

1. Public health, safety, or welfare;
2. Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial use;
3. Livestock, wild animals, or birds; and
4. Fish or other aquatic life.

B. Duty to Mitigate

SHA shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

C. Duty to Comply

SHA shall be responsible for complying with all conditions of this permit. Other entities may be used to meet various permit obligations provided that both SHA and the other entity agree contractually. Regardless of any arrangement entered into however, SHA remains responsible for permit compliance. In no case may this responsibility or permit compliance liability be transferred to another entity.

Failure to comply with a permit provision constitutes a violation of the CWA and is grounds for enforcement action; permit termination, revocation, or modification; or denial of a permit renewal application. SHA shall comply at all times with the provisions of the Environment Article, Title 4, Subtitles 1, 2, and 4; Title 7, Subtitle 2; and Title 9, Subtitle 3 of the Annotated Code of Maryland.

SHA shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by SHA to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.

D. Sanctions

1. Penalties Under the CWA - Civil and Criminal

Section 309(d) of the CWA, 33 USC §1319(d) provides that any person who violates any permit condition is subject to a civil penalty not to exceed \$25,000 per day for each violation. Pursuant to the Civil Monetary Penalty Inflation Adjustment Rule, 40 CFR Part 19, any person who violates any NPDES permit condition or limitation after December 6, 2013, is liable for an administrative penalty not to exceed \$37,500 per day for each such violation. Section 309(g)(2) of the CWA, 33 USC §1319(g)(2) provides that any person who violates any permit condition is subject to an administrative penalty not to exceed \$10,000 per day for each violation, not to exceed \$125,000. Pursuant to the Civil Monetary Penalty Inflation Adjustment Rule, 40 CFR Part 19, any person who

violates any NPDES permit condition or limitation after December 6, 2013, is liable for an administrative penalty not to exceed \$16,000 per day for each such violation, up to a total penalty of \$187,500. Pursuant to Section 309(c) of the CWA, 33 USC §1319(c), any person who negligently violates any permit condition is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one year, or both. If a person has been convicted of negligent violations of the CWA previously, the criminal penalties may be increased to \$50,000 per day of violation, or imprisonment of not more than two years, or both. Any person who knowingly violates any permit condition is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three years, or both. If a person has been convicted of knowing violations of the CWA previously, the criminal penalties may be increased to \$100,000 per day of violation, or imprisonment of not more than six years, or both.

2. Penalties Under the State's Environment Article - Civil and Criminal

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve SHA from civil or criminal responsibilities and/or penalties for a violation of Title 4, Title 7, and Title 9 of the Environment Article, Annotated Code of Maryland, or any federal, local, or other State law or regulation. Section 9-342 of the Environment Article provides that a person who violates any condition of this permit is liable to a civil penalty of up to \$10,000 per violation, to be collected in a civil action brought by MDE, and with each day a violation continues being a separate violation. Section 9-342 further authorizes the MDE to impose upon any person who violates a permit condition, administrative civil penalties of up to \$10,000 per violation, up to \$100,000.

Section 9-343 of the Environment Article provides that any person who violates a permit condition is subject to a criminal penalty not exceeding \$25,000 or imprisonment not exceeding one year, or both for a first offense. For a second offense, Section 9-343 provides for a fine not exceeding \$50,000 and up to two years imprisonment.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$50,000 per violation, or by imprisonment for not more than two years per violation, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who knowingly makes any false statement, representation, or certification in any records or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$50,000 per violation, or by imprisonment for not more than two years per violation, or both.

E. Permit Revocation and Modification

1. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by SHA for a permit modification or a notification of planned changes or anticipated noncompliance does not stay any permit condition. A permit may be modified by MDE upon written request by SHA and after notice and opportunity for a public hearing in accordance with and for the reasons set forth in COMAR 26.08.04.10.

After notice and opportunity for a hearing and in accordance with COMAR 26.08.04.10, MDE may modify, suspend, or revoke and reissue this permit in whole or in part during its term for causes including, but not limited to the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary reduction or elimination of the authorized discharge;
- d. A determination that the permitted discharge poses a threat to human health or welfare or to the environment and can only be regulated to acceptable levels by permit modification or termination;
- e. To incorporate additional controls that are necessary to ensure that the permit requirements are consistent with any applicable TMDL WLA allocated to the discharge of pollutants from the MS4; or
- f. As specified in 40 C.F.R §§122.62, 122.63, 122.64, and 124.5.

2. Duty to Provide Information

SHA shall furnish to MDE, within a reasonable time, any information that MDE may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit; or to determine compliance with this permit. SHA shall also furnish to MDE, upon request, copies of records required to be kept by this permit.

F. Inspection and Entry

SHA shall allow an authorized representative of the State or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulatory activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and obtain copies at reasonable times of any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times, without prior notice, any construction site, facility, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

G. Monitoring and Recordkeeping

Unless otherwise specified by this permit, all monitoring and records of monitoring shall be in accordance with 40 CFR Part 122.41(j).

H. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State, or local law or regulations.

I. Severability

The provisions of this permit are severable. If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect. If the application of any provision of this permit to any circumstance is held invalid, its application to other circumstances shall not be affected.

J. Signature of Authorized Administrator and Jurisdiction

Each application, report, or other information required under this permit to be submitted to MDE shall be signed as required by COMAR 26.08.04.01-1. Signatories shall be a principal executive officer, ranking elected official, or other duly authorized employee.

Jay G. Sakai, Director
Water Management Administration

Date

Attachment A Annual Report Databases

As part of the NPDES annual reporting process, permittees are required to complete databases for storm drain systems, urban best management practices, impervious surfaces, watershed restoration, monitoring site locations, chemical monitoring, pollutant load reductions, biological monitoring, illicit discharge detection, erosion and sediment control responsible personnel training, quarterly grading permit summaries, and fiscal analyses. For compatibility purposes, databases should be submitted in Access or Excel. Any file in a format other than Access or Excel is to be submitted in a “*.dbf” format. Examples of databases and definitions for each category are provided below. If there are any questions regarding the compatibility of databases, please contact the Water Management Administration’s Sediment, Stormwater, and Dam Safety Program at (410) 537-3543.

MDE is utilizing Environmental System Research Institute (ESRI) Arc Geographic Information System (ArcGIS) technologies to track and update all collected datasets and integrate them spatially. GIS datasets shall be submitted in an ESRI Geodatabase or shapefile format, (i.e., “*.shp”). All datasets shall conform to the Maryland State Geographic Information Committee standard – North American Datum (NAD), 1983 Maryland State Plane Coordinate System in “meter” units. Location information collected by global positioning systems (GPS) for the purposes of populating the GIS datasets shall be accurate to the sub-meter (+/- 1 meter) level for acceptable mapping. Additionally, each table below requires a “unique identifier” which is necessary for linking GIS mapping locations to datasets with further descriptions (i.e., outfall dimensions, BMP type, chemical results, etc.).

A. Storm Drain System Mapping Associated with GIS Coverage (PART IV.C.1.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
OUTFALL_ID	TEXT	15	Unique outfall ID
MD_NORTH	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Northing
MD_EAST	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Easting
DIM_OUTFL	NUMBER	3	Outfall Dimensions in inches
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
TYPE_OUTFL	TEXT	3	Outfall Type (RCP,CMP, PVC)
DRAIN_AREA	NUMBER	8	Drainage area to outfall (acres) ¹
LAND_USE	NUMBER	3	Predominant land use ²

¹ GIS shapefile required

² Use attached Maryland Office of Planning land use codes.

B. Urban Best Management Practices (BMPs) Associated with GIS Coverage (PART IV.C.3.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
STRU_ID	TEXT	8	Unique structure ID ⁵
PERMIT_NO	TEXT	10	Unique permit number
STRU_NAME	TEXT	60	Structure name
ADDRESS	TEXT	50	Structure address
CITY	TEXT	15	Structure address
STATE	TEXT	2	Structure address
ZIP	NUMBER	10	Structure address
MD_NORTH	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Northing
MD_EAST	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Easting
ADC_MAP	TEXT	5	ADC map book coordinate (optional if BMP has MD Northing/Easting)
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code

STRU_TYPE	TEXT	10	Identify structure or BMP type ³
LAND_USE	NUMBER	3	Predominant land use ²
CON_PURPOSE	TEXT	4	New development (NEWD), Redevelopment (REDE), or Restoration (REST)
DRAIN_AREA	NUMBER	8	Structure drainage area (acres) ¹
IMP_ACRES	NUMBER	8	Structure impervious drainage area (acres) ¹
TOT_DRAIN	NUMBER	8	Total site area (acres)
WQ_VOLUME	NUMBER	8	Volume of rainfall depth in inches managed by the practice
RCN	NUMBER	5	Runoff curve number (weighted)
ON_OFF_SITE	TEXT	3	On or offsite structure
APPR_DATE	DATE/TIME	8	Permit approval date
BUILT_DATE	DATE/TIME	8	Construction completion date
INSP_DATE	DATE/TIME	8	Record most recent inspection date
GEN_COMNT	TEXT	60	General comments
LAST_CHANGE	DATE/TIME	8	Date last change made to this record

¹ GIS shapefile required

² Use attached Maryland Office of Planning land use codes

³ Use attached urban BMP type code

⁵ Use attached unique structure identification codes

C. Impervious Surfaces Associated with GIS Coverage (PART IV.C.4.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
IMP_ACREAGE	NUMBER	8	Total impervious acreage in watershed ¹
IMP_CONTROLLED	NUMBER	8	Impervious acreage controlled to the maximum extent practicable ¹
IMP_BASELINE	NUMBER	8	Impervious acreage not controlled to the maximum extent practicable ^{1, 2}
RESTORATION_P	NUMBER	8	Impervious acreage proposed for watershed restoration ¹
RESTORATION_UC	NUMBER	8	Impervious acreage under construction for watershed restoration ¹
RESTORATION_C	NUMBER	8	Impervious acreage completed (since program inception) ¹

¹ GIS shapefile required

² Fixed baseline based on MDE Guidance and approval

D. Water Quality Improvement Project Locations Associated with GIS Coverage (PART IV.C.6.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
STRU_ID	TEXT	8	Unique structure ID ⁵
STRU_NAME	TEXT	60	Structure name
MD_NORTH	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Northing
MD_EAST	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Easting
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
STRU_TYPE	TEXT	10	Identify structure or BMP type ³
LAND_USE	NUMBER	3	Predominant land use ²
DRAIN_AREA	NUMBER	8	Structure drainage area (acres) ¹
IMP_ACRES	NUMBER	8	Structure impervious drainage area (acres) ¹
WQ_VOLUME	NUMBER	8	Volume of rainfall depth in inches managed by the practice
LINEAR_FT	NUMBER	8	Use this field for stream restoration or shoreline protection
POUNDS_TN	NUMBER	8	Use this field for street sweeping or inlet cleaning
POUNDS_TP	NUMBER	8	Use this field for street sweeping or inlet cleaning
POUNDS_TSS	NUMBER	8	Use this field for street sweeping or inlet cleaning
APPR_DATE	DATE/TIME	8	Permit approval date
BUILT_DATE	DATE/TIME	8	Construction completion date
INSP_DATE	DATE/TIME	8	Record most recent inspection date
GEN_COMNT	TEXT	60	General comments

LAST_CHANGE	DATE/TIME	8	Date last change made to this record
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¹ GIS shapefile required

² Use attached Maryland Office of Planning land use codes

³ Use attached urban BMP type code

⁵ Use attached unique structure identification codes

E. Monitoring Site Locations Associated with GIS Coverage (PART IV.C.5.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
STATION	TEXT	30	Unique station ID
OUTFALL_OR_INSTREAM	TEXT	10	Outfall or instream station
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
MD_NORTH	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Northing
MD_EAST	NUMBER	8	Maryland grid coordinate (NAD 83 meters) Easting
DRAIN_AREA	NUMBER	8	Drainage area in acres ¹

¹ GIS shapefile required

E.1. Monitoring Site Locations - Use for Multiple Land Use Values in the Drainage Area

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
STATION	TEXT	30	Name of station (associated with unique station ID in section E.)
LAND_USE_RANK	NUMBER	8	Ranking of land use from predominant to least
LAND_USE	NUMBER	3	Identify land use ²
DRAIN_AREA	NUMBER	8	Drainage area in acres ¹

¹ GIS shapefile required

² Use attached Maryland Office of Planning land use codes

E.2. Monitoring Site Locations - Use for Multiple Stormwater BMPs in the Drainage Area

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
STATION	TEXT	30	Name of station (associated with unique station ID in section E.)
BMP_RANK	NUMBER	5	Ranking of BMPs from predominant to least
STRU_TYPE	TEXT	10	Identify structure or BMP type ³
BMP_DESCRIPTION	TEXT	60	Brief description of BMP
DRAIN_AREA	NUMBER	8	Drainage area in acres treated by BMP ¹

¹ GIS shapefile required

³ Use attached urban BMP type code.

F. Chemical Monitoring (PART IV.F.1.)

Column Name	Data Type	Length	Description
JURISDICTION	TEXT	50	Monitoring jurisdiction name
EVENT_DATE	DATE/TIME	8	Date of storm event
EVENT_TIME	DATE/TIME	8	Time monitoring begins
STATION	TEXT	30	Station name (associated w/ unique station ID in section E.)
OUTFALL_OR_INSTREAM	TEXT	10	Outfall or instream station
STORM_OR_BASEFLOW	TEXT	10	Storm or base flow sample
DEPTH	NUMBER	5	Depth of rain in inches
DURATION	NUMBER	5	Duration of event in hours and minutes
INTENSITY	NUMBER	5	Intensity = depth/duration
TOTAL_STORM_FLOW_VOLUME	NUMBER	5	Total storm flow volume in gallons

WATER_TEMP	NUMBER	5	Flow weighted average of water temperature (Fahrenheit)
pH	NUMBER	5	Flow weighted average of pH
BOD_dt	NUMBER	5	Biological Oxygen Demand detection limit used in analysis
BOD EMC0	NUMBER	5	EMC for Biological Oxygen Demand in mg/l using (0)*
BOD EMC_dt	NUMBER	5	EMC for Biological Oxygen Demand in mg/l using (dt)**
TKN_dt	NUMBER	5	Total Kjeldahl Nitrogen detection limit used in analysis
TKN EMC0	NUMBER	5	EMC for Total Kjeldahl Nitrogen in mg/l using (0)*
TKN EMC_dt	NUMBER	5	EMC for Total Kjeldahl Nitrogen in mg/l using (dt)**
NITRATE+NITRITE_dt	NUMBER	5	Record Nitrate + Nitrite detection limit used in analysis
NITRATE+NITRITE EMC0	NUMBER	5	Enter EMC for Nitrate + Nitrite in mg/l using (0)*
NITRATE EMC_dt	NUMBER	5	Enter EMC for Nitrate + Nitrite in mg/l using (dt)**
TOTAL_PHOSPHORUS_dt	NUMBER	5	Record Total Phosphorus detection limit used in analysis
TOTAL_PHOSPHORUS EMC0	NUMBER	5	Enter EMC for Total Phosphorus in mg/l using (0)*
TOTAL_PHOSPHORUSEMC_dt	NUMBER	5	Enter EMC for Total Phosphorus in mg/l using (dt)**
TSS_dt	NUMBER	5	Total Suspended Solids detection limit used in analysis
TSS EMC0	NUMBER	5	EMC for Total Suspended Solids in mg/l using (0)*
TSS EMC_dt	NUMBER	5	EMC for Total Suspended Solids in mg/l using (dt)**
TOTAL_COPPER_dt	NUMBER	5	Record Total Copper detection limit used in analysis
TOTAL_COPPER EMC0	NUMBER	5	Enter EMC for Total Copper in ug/l using (0)*
TOTAL_COPPER EMC_dt	NUMBER	5	Enter EMC for Total Copper in ug/l using (dt)**
TOTAL_LEAD_dt	NUMBER	5	Record Total Lead detection limit used in analysis
TOTAL_LEAD EMC0	NUMBER	5	Enter EMC for Total Lead in ug/l using (0)*
TOTAL_LEAD EMC_dt	NUMBER	5	Enter EMC for Total Lead in ug/l using (dt)**
TOTAL_ZINC_dt	NUMBER	5	Record Total Zinc detection limit used in analysis
TOTAL_ZINC EMC0	NUMBER	5	Enter EMC for Total Zinc in ug/l using (0)*
TOTAL_ZINC EMC_dt	NUMBER	5	Enter EMC for Total Zinc in ug/l using (dt)**
HARDNESS_dt	NUMBER	5	Record detection limit used in analysis
HARDNESS EMC0	NUMBER	5	Enter EMC for Hardness in ug/l using (0)*
HARDNESS EMC_dt	NUMBER	5	Enter EMC for Hardness in ug/l using (dt)**
TPH_dt	NUMBER	5	Record detection limit used in analysis
TPH EMC0	NUMBER	5	EMC for Total Petroleum Hydrocarbons in mg/l using (0)*
TPH EMC_dt	NUMBER	5	EMC for Total Petroleum Hydrocarbon in mg/l using (dt)**
ENTEROCOCCI_dt	NUMBER	5	Record detection limit used in analysis
ENTEROCOCCI EMC0	NUMBER	5	EMC for enterococci in MPN/100 using (0)*
ENTEROCOCCI EMC_dt	NUMBER	5	EMC for enterococci in MPN/100 using (dt)**
ECOLI_dt	NUMBER	5	Record E. Coli detection limit used in analysis
ECOLI EMC0	NUMBER	5	Enter EMC for E. Coli in MPN/100ml using (0)*
ECOLI EMC_dt	NUMBER	5	Enter EMC for E. Coli in MPN/100ml using (dt)**
LOCAL_CONCERN1_dt	NUMBER	5	Record detection limit used in analysis
LOCAL_CONCERN1 EMC0	NUMBER	5	Enter EMC for in mg/l using (0)*
LOCAL_CONCERN1 EMC_dt	NUMBER	5	Enter EMC for in mg/l using (dt)**
LOCAL_CONCERN2_dt	NUMBER	5	Record detection limit used in analysis
LOCAL_CONCERN2 EMC0	NUMBER	5	Enter EMC for in mg/l using (0)*
LOCAL_CONCERN2 EMC_dt	NUMBER	5	Enter EMC for in mg/l using (dt)**
LOCAL_CONCERN3_dt	NUMBER	5	Record detection limit used in analysis
LOCAL_CONCERN3 EMC0	NUMBER	5	Enter EMC for in mg/l using (0)*
LOCAL_CONCERN3 EMC_dt	NUMBER	5	Enter EMC for in mg/l using (dt)**
GEN_COMNT	TEXT	50	Monitoring comments/documentation

key: **mg/l** = milligrams per liter **ug/l** = micrograms per liter **MPN** = most probable number per 100 milliliters

* **EMC (0)** = Flow weighted averages for three discrete samples representative of a storm using zero (0) for any discrete samples recorded less than the detection limit.

** EMC (dt) = Flow weighted averages for three discrete samples representative of a storm using the detection limit value (dt) for any discrete samples recorded less than the detection limit.

G. Pollutant Load Reductions Associated with GIS Coverage (PART IV.E.4. and IV.F.1.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
TN_RUNOFF	NUMBER	10	(TKN) + (Nitrate + Nitrite) load before treatment (lbs/year)
TN_CONTROLLED	NUMBER	10	(TKN) + (Nitrate + Nitrite) treated by BMPs (lbs/year)
TP_RUNOFF	NUMBER	10	TP load before treatment (lbs/year)
TP_CONTROLLED	NUMBER	10	TP treated by BMPs (lbs/year)
TSS_RUNOFF	NUMBER	10	TSS load before treatment (lbs/year)
TSS_CONTROLLED	NUMBER	10	TSS treated by BMPs (lbs/year)

G.1. Additional Pollutants - Use for Multiple Pollutant Entries

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
POLLUTANT	TEXT	20	Identify additional pollutants for impaired water (TMDLs)
WLA_RUNOFF	NUMBER	10	WLA for an approved TMDL before treatment (lbs/year)
WLA_CONTROLLED	NUMBER	10	Waste load for an approved TMDL treated by BMPs (lbs/year)

H. Biological and Habitat Monitoring (PART IV.F.1.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
STATION	TEXT	30	Unique station ID
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
MD_NORTH	NUMBER	8	Maryland grid coordinate (NAD 83 Meters) Northing
MD_EAST	NUMBER	8	Maryland grid coordinate (NAD 83 Meters) Easting
DRAIN_AREA	NUMBER	8	Drainage area in acres
BIBI	NUMBER	4	Benthic index of biological indicators
EMBEDDEDNESS	NUMBER	4	Rapid bioassessment protocol score for embeddedness
EPIFAUNAL	NUMBER	4	Rapid bioassessment protocol score for epifaunal
HABITAT	NUMBER	4	Rapid bioassessment protocol score for habitat
LAND_USE	NUMBER	3	Predominant land use ²

² Use attached Maryland Office of Planning land use codes

I. Illicit Discharge Detection and Elimination (PART IV.D.3.)

Column Name	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
OUTFALL_ID	TEXT	15	Unique outfall ID used in Section A. database
SCREEN_DATE	DATE/TIME	8	Field screening date
TEST_NUM	NUMBER	5	Initial screening, follow-up test, 3rd, etc.
LAST_RAIN	DATE/TIME	8	Date of last rain > 0.10"
TIME	DATE/TIME	8	Field screening time
OBSERV_FLOW	TEXT	3	Was flow observed? (yes/no)
CFS_FLOW	NUMBER	5	Flow rate in cubic feet per second (CFS)
WATER_TEMP	NUMBER	5	Water temperature (Fahrenheit)
AIR_TEMP	NUMBER	5	Air temperature in (Fahrenheit)
CHEM_TEST	TEXT	3	Was chemical test performed? (yes/no)
pH	NUMBER	5	pH meter reading

PHENOL	NUMBER	5	Milligrams per Liter (mg/l)
CHLORINE	NUMBER	5	mg/l
DETERGENTS	NUMBER	5	mg/l
COPPER	NUMBER	5	mg/l
ALGAEGROW	TEXT	3	Was algae growth observed? (yes/no)
ODOR	TEXT	2	Type of odor ⁴
COLOR	TEXT	2	Discharge color ⁴
CLARITY	TEXT	2	Discharge clarity ⁴
FLOATABLES	TEXT	2	Floatables in discharge ⁴
DEPOSITS	TEXT	2	Deposits in outfall area ⁴
VEG_COND	TEXT	2	Vegetative condition in outfall area ⁴
STRUCT_COND	TEXT	2	Structural condition of outfall ⁴
EROSION	TEXT	2	Erosion in outfall area ⁴
COMPLA_NUM	TEXT	3	Is screening complaint driven? (yes/no)
ILLICIT_Q	TEXT	3	Was illicit discharge found? (yes/no)
ILLICIT_ELIM	TEXT	3	Was illicit discharge eliminated? (yes/no)

⁴Use Attached Pollution Prevention Activities Codes

J. Responsible Personnel Certification Information (PART IV.D.2.)

Column Name	Data Type	Length	Description*
PREFIX	TEXT	2	Mr, Ms
FIRSTNAME	TEXT	15	First name
LASTNAME	TEXT	15	Last name
ADDRESS	TEXT	50	Full address
CITY	TEXT	15	City
STATE	TEXT	2	State
ZIP	NUMBER	10	Zip code
DATE	DATE/TIME	8	Date of class
PHONE	NUMBER	10	Phone number
CERT_NUM	NUMBER	6	Certification number as provided by MDE
COMPANY	TEXT	30	Employer
INSTRUCTOR	TEXT	20	Instructor's last name

* Do not use all caps

K. Quarterly Grading Permit Information Associated with GIS Coverage (PART IV.D.2.)

Column Name	Data Type	Length	Description
SITE_NAME	TEXT	60	Construction site name
SITE_OWNER	TEXT	60	Construction site owner
OWNER_ADDRESS	TEXT	50	Owner address
OWNER_CITY	TEXT	15	Owner address
OWNER_ZIP	NUMBER	10	Owner zip code
SITE_ADDRESS	TEXT	50	Site address
SITE_CITY	TEXT	15	Site address
SITE_ZIP	NUMBER	10	Site zip code
MD_NORTH	NUMBER	8	Maryland grid coordinate (NAD 83 meters) – site
MD_EAST	NUMBER	8	Maryland grid coordinate (NAD 83 meters) – site
WATERSHED_CODE	NUMBER	20	Maryland 8 or 12-digit hydrologic unit code
DIST_AREA	NUMBER	8	Disturbed area of site in acres ¹
GRAD_PERMIT	TEXT	50	Local grading permit number
APPR_DATE	DATE/TIME	8	Grading Permit approval date
LAND_USE	NUMBER	3	Predominant land use ² (built)

¹ GIS shapefile required

² Use attached Maryland Office of Planning land use codes

L. Fiscal Analyses (PART IV.G.)

Permit Condition	Data Type	Length	Description
YEAR	NUMBER	4	Annual report year
LEGAL_AUTH	NUMBER	13	Total annual cost for legal authority
SOURCE_ID	NUMBER	13	Total annual cost for source ID
SW_MANAGEMENT	NUMBER	13	Total annual cost for stormwater management
EROS_SED_CON	NUMBER	13	Total annual cost for erosion and sediment
ILLICIT_DET/ELIM	NUMBER	13	Total annual cost for illicit det/elimination
TRASH_ELIM	NUMBER	13	Total annual cost for trash elimination
PROP_MANAGEMENT	NUMBER	13	Total annual cost for property management
INLET_CLEAN	NUMBER	13	Total annual cost for inlet cleaning
STRT_SWEEP	NUMBER	13	Total annual cost for street sweeping
RD_MAINT_OTHER	NUMBER	13	Total annual cost for road maintenance - other
PUB_EDUCATION	NUMBER	13	Total annual cost for public education
WATERSHED_ASSESS	NUMBER	13	Total annual cost for watershed assessment
WATERSHED_RESTOR	NUMBER	13	Total annual cost for watershed restoration
CHEM_MON_ASSESS	NUMBER	13	Total annual cost for chemical monitoring
BIO_MON_ASSESS	NUMBER	13	Total annual cost for biological monitoring
PHYS_STRM_ASSESS	NUMBER	13	Total annual cost for physical assessment
MANUAL_MON	NUMBER	13	Total annual cost for design manual monitorin
TMDL_ASSESS	NUMBER	13	Total annual cost for tmdl assessment
TOTAL_NPDES_FUNDS	NUMBER	13	Total annual cost for total npdes program

²MDP Land Use/Land Cover

10 Urban Built-up

- **11 Low Density Residential** – Detached single family/duplex dwelling units, yards, and associated areas. Areas of more than 90 percent single family/duplex dwelling units, with lot sizes less than five acres but at least one-half acres (.2 dwelling units/acre to 2 dwelling units/acre).
- **12 Medium Density Residential** – Detached single family/duplex, attached single unit row housing, yards, and associated areas. Areas of more than 90 percent single family/duplex units and attached single unit row housing, with lot sizes of less than one-half acre but at least one-eighth acre (2 dwelling units/acre to 8 dwelling units/acre).
- **13 High Density Residential** – Attached single unit row housing, garden apartments, high rise apartments/condominiums, mobile home and trailer parks. Areas of more than 90 percent high density residential units, with more than 8 dwelling units/acre.
- **14 Commercial** – Retail and wholesale services. Areas used primarily for the sale of products and services, including associated yards and parking areas.
- **15 Industrial** – Manufacturing and industrial parks, including associated warehouses, storage yards, research laboratories, and parking areas.
- **16 Institutional** – Elementary and secondary schools, middle schools, junior and senior high schools, public and private colleges and universities, military installations (built-up areas only, including buildings and storage, training, and similar areas) churches and health facilities, correctional facilities, and government offices and facilities that are clearly separable from the surrounding land cover.
- **17 Extractive** – Surface mining operations, including sand and gravel pits, quarries, coal surface mines, and deep coal mines. Status of activity (active vs. abandoned) is not distinguished.
- **18 Open Urban Land** – Urban areas whose use does not require structures, or urban areas where non-conforming uses characterized by open land have become isolated. Included are golf courses, parks, recreation areas (except associated with schools or other institutions), cemeteries, and entrapped agricultural and undeveloped land within urban areas.
- **191 Large Lot Subdivision (Agriculture)** – Residential subdivisions with lot sizes less than 20 acres but at least 5 acres, with a dominant land cover of open fields or pasture.
- **192 Large Lot Subdivision (Forest)** – Residential subdivisions with lot sizes less than 20 acres but at least 5 acres, with a dominant land cover of deciduous, evergreen or mixed forest.

20 Agriculture

- **21 Cropland** – Field and forage crops.
- **22 Pasture** – Land used for pasture, both permanent and rotated: grass.
- **23 Orchards/Vineyards/Horticulture** – Areas of intensively managed commercial bush and tree crops, including areas used for fruit production, vineyards, sod and seed farms, nurseries, and green houses.

- **24 Feeding Operations** – Cattle or hog feeding lots, poultry houses, and holding lots for animals, and commercial fishing areas (including oyster beds).
- **241 Feeding Operations** – Cattle or hog feeding lots, poultry houses, and holding lots for animals.
- **242 Agricultural Building** – Breeding and training facilities, storage facilities, built-up areas associated with a farmstead, small farm ponds, and commercial fishing areas.
- **25 Row and Garden Crops** – Intensively managed track and vegetable farms and associated areas.

40 Forest

- **41 Deciduous Forest** – Forested areas in which the trees characteristically lose their leaves at the end of the growing season. Included are such species as oak, hickory, aspen, sycamore, birch, yellow poplar, elm, maple, and cypress.
- **42 Evergreen Forest** - Forested areas in which the trees are characterized by persistent foliage throughout the year. Included are such species as white pine, pond pine, hemlock, southern white cedar, and red pine.
- **43 Mixed Forest** – Forested areas in which neither deciduous or evergreen species dominate, but in which there is a combination of both types.
- **44 Brush** – Areas that do not produce timber or other wood products but may have cut-over timber stands, abandoned agriculture fields, or pasture. These areas are characterized by vegetation types such as sumac, vines, rose, brambles, and tree seedlings.

50 Water – Rivers, waterways, reservoirs, ponds, bays, estuaries, and ocean.

60 Wetlands – Forested and non-forested wetlands, including tidal flats, tidal and non-tidal marshes, and upland swamps and wet areas.

70 Barren Land

- **71 Beaches** – Extensive shoreline areas of sand and gravel accumulation, with no vegetative cover or other land use.
- **72 Bare Exposed Rock** – Areas of bedrock exposure, scarps, and other natural accumulations of rock without vegetative cover.

73 Bare Ground – Areas of exposed ground caused naturally, by construction, or other cultural processes.

³ Glossary of Stormwater BMP Structure Types and Practices Reported to MDE

Structural BMPs			
Structure Type	Code	Structure Function	Chesapeake Bay Program Classification
Artificial Wetlands (See Shallow Marsh also)	SM	A structure with a permanent shallow pool planted with wetland vegetation often designed to provide extended detention.	Wet Pond & Wetlands
Attenuation swale or dry swale	SW	Open drainage channel designed to detain and promote the filtration of stormwater runoff through underlying fabricated soil media (see Grassed Swale or SW).	Filtering Practice
Bio-retention	BR	Landscape designed such that stormwater runoff collects in shallow depressions before filtering through fabricated planting soil media .	Filtering Practice
Check Dam	CD	A small dam constructed in a gully or other small waterway to decrease flow velocity (by reducing the channel gradient), minimize scour, & promote deposition of sediment.	Filtering Practice
Detention Structure (Dry Pond)	DP	Designed to store runoff without a permanent pool.	Dry Detention Pond & Hydrodynamic Structure
Dry Well	DW	An infiltration trench variant designed to exclusively accommodate rooftop runoff.	Infiltration Practice
Extended Detention Structure (Two types):	ED	Designed to temporarily detain a portion of runoff for 24 hrs after a storm using a fixed orifice to regulate outflow at a specific rate, allowing solids & associated time to settle out.	Dry Extended Detention Pond
Extended Detention Structure, Dry	EDSD	Designed for the temporary storage of runoff associated with at least a 24 hr 1-year storm without creating a permanent pool of water.	Dry Extended Detention Pond
Extended Detention Structure, Wet	EDSW	Designed for the storage of runoff associated with at least a 24 hr 1-year storm. The detained water drains partially & the remaining portion creates a permanent pool .	Dry Extended Detention Pond or Wet Pond & Wetlands
Filter Strip	FS	Vegetated land designed to intercept sheet flow from upstream development.	Filtering Practice
Flow Splitter	FISp	Hydraulic structure designed either to divert a portion of stream flow to a BMP located away from a channel, direct stormwater to a parallel pipe system or bypass a portion of base flow around a pond .	Not a WQ BMP
Flood Management Area	FLOOD	10 year storm overbank flood protection	Not a WQ BMP
Forebay	FOREBAY	Storage structure adjoining a SWM BMP inlet designed to trap coarse sediments and thereby lessen their accumulation in the main treatment area .	Dry Detention Pond & Hydrodynamic Structure
Gabion	GABION	A large rectangular box made of heavy gauge wire mesh which holds cobbles and boulders for changing stream flow patterns, bank stabilization, and erosion control.	Filtering Practice
Grass Swale	SW	Open vegetated channel used to convey runoff and provide treatment by filtering pollutants and sediment.	Filtering Practice
Hydrodynamic Structure such as 1) Oil grit separator 2) Bay Saver® 3) Stormceptor®	OGS BS SC	An engineered structure used to separate sediments and oils from stormwater runoff using gravitational separation and/or hydraulic flow.	Dry Detention Pond & Hydrodynamic Structure
Infiltration Basin	IB	Designed to allow stormwater to infiltrate into permeable soils. It differs from a retention structure in that it may include a back-up underdrain pipe to ensure eventual removal of standing water.	Infiltration Practice

Infiltration Trench (Three types):	IT	An excavated trench that has been backfilled with exposed or unexposed stones to form an underground reservoir (Also see Dry Well).	Infiltration Practice
Complete Exfiltration	ITCE	Runoff can only exit the trench by exfiltrating through the stone reservoir into the underlying soil	
Partial Exfiltration	ITPE	Runoff exits the trench by exfiltrating a) through the stone reservoir into the underlying soil, and b) via a perforated underdrain at the bottom of the trench that diverts runoff to a central outlet.	
Water Quality Exfiltration	ITWQE	Storage volume is set to receive only the first $\frac{1}{2}$ " of runoff (first flush) from an impervious area of the watershed.	
Landscape	LANDSCAPE	Impervious area reduction (Thus far, only Prince Georges County has submitted reports of this practice).	Filtering Practice
Level Spreader	LS	A device for distributing stormwater uniformly over the ground surface as sheet flow to prevent concentrated, erosive flow and promote infiltration.	Infiltration Practice
Micropool (Reported by various jurisdictions before the standardization of codes)	MP	A smaller permanent pool used in a stormwater pond to mitigate the thermal impacts of a larger pond, impacts on existing wetlands, or compensate for lack of topographic relief.	Wet Pond & Wetlands
Observation well	OBS_WELL	A test well installed in an infiltration trench to monitor draining time after installation.	Not a SWM BMP - Observation Well
Other	OTH	A stormwater facility that is known to have been implemented but whose type cannot definitively be identified at the time of submitting a Notice of Construction Completion report to MDE.	Defaults to Dry Detention Pond & Hydrodynamic Structure, evaluated as the least efficient class of facilities in removing TSS, TN, and TP from stormwater runoff.
Porous Pavement	PP	A porous asphalt surface designed to have bearing strength similar to conventional asphalt but provides a rapid conduit for runoff to reach a subsurface stone reservoir.	Infiltration Practice
Retention Pond (See Wet Pond/WP)	WP	A structure with a permanent pool of water for treating incoming storm runoff.	Wet Pond & Wetlands
Sand Filter	SF	A bed of sand to which the first flush of runoff is diverted. Water leaving the filter is collected in underground pipes & returned to a waterway. A layer of peat, limestone, and/topsoil may be added to improve removal efficiency.	Filtering Practice
Shallow Marsh	SM	A structure with a permanent shallow pool planted with wetland vegetation often designed to provide extended detention.	Wet Pond & Wetlands
Underground Storage	UGS	Vault like structure designed for the temporary storage of storm flow.	Dry Detention Pond & Hydrodynamic Structure
Vegetated Buffer	VB	A vegetated protective zone of variable width located along both sides of a waterway.	Filtering Practice
Water Quality Inlet	OGS	See Hydrodynamic Structure-Oil Grit Separator.	Dry Detention Pond & Hydrodynamic Structure
Wet Pond	WP	A structure with a permanent pool of water for treating incoming storm runoff.	Wet Pond & Wetlands

Environmental Site Design Practices			
Practice Type	Code	Function	Chesapeake Bay Program Classification
<u>Environmental Site Design</u> -- alternative surfaces, non-structural and micro-scale practices may be grouped as a comprehensive stormwater design system and identified singly as ESD.	ESD	A comprehensive design strategy for maintaining predevelopment runoff characteristics and protecting natural resources is available. This strategy relies on integrating site design, natural hydrology, and smaller controls to capture and treat runoff.	Stormwater to the MEP
Alternative Surfaces			
1) Green Roof	ESDGR	Alternative surface used in place of traditional flat or pitched roofs to reduce runoff.	Stormwater to the MEP
2) Permeable Pavements	ESDPERMP	Any of the available materials that are used to replace traditional pavements (e.g., asphalt, concrete) and reduce runoff.	
3) Reinforced Turf	ESDRTRF	Grassed or gravel area with open, load-bearing matrix for structural integrity.	
Nonstructural Practices			
1) Disconnection of Rooftop Runoff	ESDRTD	Rooftop runoff is disconnected and then directed to a pervious area where it either infiltrates or is filtered.	Stormwater to the MEP
2) Disconnection of Non-Rooftop Runoff	ESDNRTD	Runoff from surface impervious areas is disconnected and then directed to a pervious area where it either infiltrates or is filtered. Examples: Overland sheet flow, permeable pavers, rain gardens and small scale filters.	
3) Sheetflow to Conservation Areas	ESDSFNAC	Runoff is discharged to a natural conservation or buffer area (e.g. stream buffers, forest buffers) through overland flow.	
Micro-Scale Practices			
1) Rainwater Harvesting	ESDRH	These practices intercept and store rainfall for future use.	Stormwater to the MEP
2) Submerged Gravel Wetlands	ESDSGW	Small-scale filter using wetland plants and a gravel media to provide treatment.	
3) Landscape Infiltration	ESDIL	Combination of landscape features with infiltration practices.	
4) Infiltration Berms	ESDIB	Series of small berms used in sloped areas to detain, infiltrate, and filter runoff.	
5) Dry Wells	ESDDW	An infiltration trench variant designed to exclusively accommodate rooftop runoff.	
6) Micro-Bioretenention	ESDMB	Small, vegetated filter used to capture and treat runoff from adjacent impervious areas.	
7) Rain Gardens	ESDRG	Shallow landscaped feature used to detain and filter runoff and used primarily in residential applications.	
8) Swales	ESDSW	Channels that provide conveyance, water quality treatment and flow attenuation of runoff. Variants include the grassed swale, bio-swale, and wet swale.	
9) Enhanced Filters	ESDEF	A modification applied to other filters that increase nutrient removal and groundwater recharge.	

Alternative MS4 BMPs

Practice Type	Code	Description	Chesapeake Bay Program Classification
Mechanical Street Sweeping	MSS	Removes the buildup of pollutants that have been deposited along the street or curb using a mechanical sweeper truck	Street Sweeping, Mechanical
Regenerative/Vacuum Street Sweeping	VSS	Removes the buildup of pollutants that have been deposited along the street or curb using a vacuum-assisted sweeper truck	Street Sweeping, Regenerative
Nutrient Management	NM	Comprehensive nutrient management plan for reducing and or eliminating fertilizer use	Nutrient Management
Grass/Meadow Buffers	GMB	An area of trees at least 35 feet wide on one side of a stream, usually accompanied by infrequently-mowed grass, meadow flora species, and other vegetation that is adjacent to a body of water	Urban Grass/Meadow Buffers
Forest Buffers	FB	An area of trees at least 35 feet wide on one side of a stream, usually accompanied by trees, shrubs, and other vegetation that is adjacent to a body of water	Urban Forest Buffers
Impervious Surface Elimination (to Pervious)	IMPP	Pollutant load reduction expected when land cover is converted from impervious to pervious	Land Cover Change
Impervious Surface Elimination (to Forest)	IMPF	Pollutant load reduction expected when land cover is converted from impervious to forest	Land Cover Change
Planting Trees or Forestation on Pervious Urban	FPU	100 trees per acre or greater is necessary with at least 50% of the trees being 2 inches or greater in diameter at 4 ½ feet above ground level (an aggregate of smaller sites may be used)	Land Cover Change
Catch Basin Cleaning	CBC	Routine cleanouts performed on targeted infrastructure that have high accumulation rates	Street Sweeping
Storm Drain Vacuuming	SDV	Routine vacuuming performed on targeted infrastructure that has high accumulation rates	Street Sweeping
Stream Restoration	STRE	Stream restoration includes re-establishing a stable channel; reconnecting the stream with the floodplain; introducing habitat features such as step-pools, woody debris, or riparian vegetation; and integrating structural approaches such as rock walls or riprap.	Urban Stream Restoration
Shoreline Stabilization	SHST	These practices apply to the shoreline of the Chesapeake and Atlantic Coastal Bays and tidal rivers. Nonstructural practices or living shorelines include tidal marsh creation and beach nourishment; structural practices include stone revetments, breakwaters, or groins.	Shoreline Stabilization
Septic Pumping	SEPP	Implementation of septic system pumping	Septic Pumping
Septic Denitrification	SEPD	Implementation of enhanced denitrification technology	Septic Denitrification
Septic Connections to WWTP	SEPC	Removal of septic system and waste stream connection made to a waste water treatment plant.	Septic Connection to WWTP
Education	EDU	Education	To Be Determined
Sub-Soiling	SUB	Sub-Soiling	To Be Determined
Trash Removal	TRA	Trash Removal	To Be Determined
Pet Waste Management	PET	Pet Waste Management	To Be Determined
Outfall Stabilization	OUTS	Outfall Stabilization	To Be Determined
Floodplain Restoration	FPRES	Floodplain Restoration	To Be Determined
River Bank Stabilization	RBS	River Bank Stabilization	To Be Determined
Bio-Reactor Carbon Filter	BRCF	Bio-Reactor Carbon Filter	To Be Determined
Disconnection of Illicit Discharges	DID	Disconnection of Illicit Discharges	To Be Determined

Alternative MS4 BMPs (Continued)			
Practice Type	Code	Description	Chesapeake Bay Program Classification
Step Pool Storm Conveyance	SPSC	Step Pool Storm Conveyance; if used as a filtration practice, the pollutant removal efficiencies for micro-bioretenention can be applied to the drainage area treated.	To Be Determined

Policy Decision			
Policy	Code	Description	Chesapeake Bay Program Classification
Exemption	EXEMPT	Land development activities that are not subject to the stormwater management requirements.	Not a SWM BMP
Variance	VARIANCE	A modification of the minimum stormwater management requirements if site conditions are such that strict adherence would impose unnecessary.	Not a SWM BMP
Waiver	WAIVER	Exemption from stormwater management requirements granted to an applicant for a specific project based on a review by "the appropriate approval authority."	Not a SWM BMP

⁴ **Pollution Prevention Activities Codes**

- 21. ODOR:** None(N), Sewage (SE), Sulfur (S), Oil (IL), Gas (G), Rancid-Sour (RS), Other (O)
- 22. COLOR:** Clear (C), Yellow (Y), Brown (B), Green (GR), Red (R), Gray (G), Other (O)
- 23. CLARITY:** Clear (C), Opaque (OP), Cloudy (CD), Other (O)
- 24. FLOATABLES:** None (N), Oil Sheen (OS), Sewage (SE), Trash (T), Other (O)
- 25. DEPOSITS:** None (N), Sediment (S), Oil (IL), Other (O)
- 26. VEG_COND.:** Normal (N), Excessive Growth (EG), Inhibited Growth (IG), Other (O)
- 27. STRUCT_COND:** Normal (N), Concrete Cracking (CC), Concrete Spalling (SP), Other (O)
- 28. EROSION:** None (N), Moderate (M), Severe (S)

⁵Unique Structure Identification Codes

Each stormwater best management structure or water quality improvement project will need a unique identification code. For management of these data statewide it is necessary that these codes also indicate the jurisdiction where they are implemented. Please use the County, City, or State abbreviations listed below as part of each structures unique identification code.

Anne Arundel County	AA
Baltimore City	BC
Baltimore County	BA
Carroll County	CA
Charles County	CH
Frederick County	FR
Harford County	HA
Howard County	HO
Prince George's County	PG
Montgomery County	MO
Maryland State Highway Administration	SHA

Attachment B
EPA Approved Total Maximum Daily Loads (TMDLs)
State Highway Administration

This NPDES permit requires SHA to submit an annual TMDL assessment report evaluating the effectiveness of SHA's restoration plans and progress made in achieving compliance with EPA approved TMDLs. Similarly, by regulation at 40 CFR §122.44, EPA further requires that stormwater controls and programs implemented pursuant to this NPDES permit be consistent with applicable WLAs developed under any approved TMDLs. The following is a list of approved TMDLs applicable to SHA:

Basin Name	8-Digit Basin Number	Impairment	Year
Bynum Run	02130704	Sediment	2011
Loch Raven Reservoir	02130805	Bacteria	2009
Back River	02130901	PCBs	2012
Curtis and Bear Creek	02130903	PCBs	2012
Marley and Furnace Creek	02130903	Bacteria	2011
Jones Falls	02130904	Sediment	2011
Gwynns Falls	02130905	Sediment	2010
Patapsco River LN Branch	02130906	Sediment	2011
Patapsco River LN Branch	02130906	Bacteria	2009
Liberty Reservoir	02130907	Phosphorus and Sediment	2014
Patuxent River Upper	02131104	Sediment	2011
Patuxent River Upper	02131104	Bacteria	2011
Little Patuxent River	02131105	Sediment	2011
Potomac River Tidal	02140101, 02140102, 02140201	PCBs	2007
Potomac River MO County	02140202	Sediment	2012
Anacostia River	02140205	Trash	2010
Anacostia River Tidal	02140205	PCBs	2007
Anacostia River NE and NW Branch	02140205	PCBs	2011
Rock Creek	02140206	Phosphorus	2013
Rock Creek	02140206	Sediment	2011
Cabin John Creek	02140207	Sediment	2011
Seneca Creek	02140208	Sediment	2011
Lower Monocacy River	02140302	Phosphorus	2013
Lower Monocacy River	02140302	Sediment	2009
Upper Monocacy River	02140303	Phosphorus	2013
Upper Monocacy River	02140303	Sediment	2009
Double Pipe Creek	02140304	Phosphorus	2013
Double Pipe Creek	02140304	Sediment	2009

Catoctin Creek	02140305	Phosphorus	2013
Catoctin Creek	02140305	Sediment	2009
Antietam Creek	02140502	Phosphorus	2013
Antietam Creek	02140502	Sediment	2008
Conococheague Creek	02140504	Sediment	2008