

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-3322 MD0068365

B. **Permit Area**

This permit covers all stormwater discharges from the municipal separate storm sewer system (MS4) owned or operated by Charles County, Maryland.

C. **Effective Date:** December 26, 2014

D. **Expiration Date:** December 25, 2019

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 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

Charles County shall designate an individual to act as a liaison with the Maryland Department of the Environment (MDE) for the implementation of this permit. The County shall provide the coordinator's name, title, address, phone number, and email address. Additionally, the County shall submit in its annual reports 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

Charles County shall maintain adequate legal authority in accordance with NPDES regulations 40 CFR Part 122.26 throughout the term of this permit. In the event that any provision of its legal authority is found to be invalid, the County shall notify MDE within 30 days and make the necessary changes to maintain adequate legal authority. All changes shall be included in the County's annual report.

C. Source Identification

Sources of pollutants in stormwater runoff shall be identified and linked to specific water quality impacts on a watershed basis. Annual reporting of these data has been provided within the County's Development District for the previous permit. Because identification of water quality impacts in impaired watersheds outside of the Development District is necessary, this reporting is expanded to the entire permit area to support ongoing efforts in watershed restoration plans. This information shall be compiled and updated annually. By the end of the permit term, the County shall provide the following data for all watersheds 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 County has determined have the potential to contribute significant pollutants;
3. Urban best management practices (BMPs): stormwater management facility data including outfall locations and delineated drainage areas;
4. Impervious surfaces: public and private land use 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.

D. Management Programs

The following management programs shall be implemented in areas served by Charles County'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. The County shall modify these programs according to 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 the County 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*. 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 or need to be made to all ordinances, regulations, and new development 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 violation notices issued by Charles County.
- 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, follow-up inspections, the enforcement actions used to ensure compliance, the maintenance inspection schedules, and any other relevant information shall be submitted in the County'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 the County shall include, but not be limited to:

- a. Implementing program improvements identified in any MDE evaluation of the County's erosion and sediment control enforcement authority;
- 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. Program activity shall be recorded on MDE's annual report database and submitted as required in PART V of this permit; and
- d. Reporting quarterly, information regarding earth disturbances exceeding one acre or more. Quarters shall be based on calendar year and submittals shall be made within 30 days following each quarter. The information submitted shall cover permitting activity for the preceding three months.

3. Illicit Discharge Detection and Elimination

Charles County 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 100 outfalls annually. Each outfall having a 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 the County'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 enforcement procedures for investigating and eliminating illicit discharges, illegal dumping, and spills. Significant discharges shall be reported to MDE for enforcement and/or permitting; and
- e. Reporting illicit discharge detection and elimination activities as specified in PART V of this permit.

4. Litter and Floatables

This section of the permit requires Charles County to address problems associated with litter and floatables in waterways that adversely affect water quality. Increases in litter discharges to receiving waters have become a growing concern both nationally and within Maryland and cannot be ignored. Charles County 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 on a watershed by watershed basis.

- a. As part of Charles County's watershed assessments under PART IV.E.1 of this permit, Charles County shall document all litter control programs and identify potential sources, ways of elimination, 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, Charles County shall develop and implement a public education and outreach program to reduce littering and increase recycling. This shall include:
 - i. Educating the public on the importance of reducing, reusing, and recycling;
 - ii. Disseminating information by using signs, articles, and other media outlets; and
 - iii. Promoting educational programs in schools, businesses, community associations, etc.
- c. Evaluating annually the effectiveness of the education program.
- d. Submit annually, a report which details progress toward implementing the public education and outreach program. 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. Charles County shall ensure that a Notice of Intent (NOI) has been submitted to MDE and a pollution prevention plan developed for each County-owned municipal facility requiring NPDES stormwater general permit coverage. The status of pollution prevention plan development and implementation for each County-owned municipal facility shall be reviewed, documented, and submitted to MDE annually.
- b. The County shall implement a program to reduce pollutants associated with maintenance activities at County-owned facilities including parks, roadways, and parking lots. The maintenance program shall include these or MDE-approved alternative activities:
 - i. Street sweeping;
 - ii. Inlet inspection and cleaning;
 - iii. Reducing the use of pesticides, herbicides, fertilizers, and other pollutants associated with vegetation management through increased use of integrated pest management;
 - iv. Reducing 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 County staff receive adequate training in pollution prevention and good housekeeping practices.

The County 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

Charles County shall continue to implement a public education and outreach program to reduce stormwater pollutants. Outreach efforts may be integrated with other aspects of the County's activities. These efforts are to be documented and summarized in each annual report. The County 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 inform the general public about the benefits of:
 - i. Increasing water conservation;
 - ii. Residential and community stormwater management implementation and facility maintenance;
 - iii. Proper erosion and sediment control practices;
 - iv. Increasing proper disposal of household hazardous waste;

- v. Improving lawn care and landscape management (e.g., the proper use of herbicides, pesticides, and fertilizers, ice control and snow removal, cash for clippers, etc.);
 - vi. Residential car care and washing; and
 - vii. Proper pet waste management.
- 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 (see list of EPA approved TMDLs attached and incorporated as Attachment B).

Charles County shall annually provide watershed assessments, restoration plans, opportunities for public participation, and TMDL compliance status to MDE. A systematic assessment shall be conducted and a detailed restoration plan developed for all watersheds within Charles County. As required below, watershed assessments and restoration plans shall include a thorough water quality analysis, identification of water quality improvement opportunities, and a schedule for BMP and programmatic implementation to meet stormwater WLAs included in EPA approved TMDLs.

1. Watershed Assessments

- a. By the end of the permit term, Charles County shall complete detailed watershed assessments for the entire County. Watershed assessments conducted during previous permit cycles may be used to comply with this requirement provided the assessments include all of the items listed in PART IV.E.1.b below. Assessments shall be performed at an appropriate watershed scale (e.g., Maryland's hierarchical eight- or twelve-digit sub-basins) and be based on MDE's TMDL analysis or an equivalent and comparable County water quality analysis;
- b. Watershed assessments by the County shall:
 - i. Determine current water quality conditions;
 - ii. Include the results of a visual watershed inspection;
 - iii. Identify and rank water quality problems;
 - iv. Prioritize all structural and nonstructural water quality improvement projects; 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, Charles County 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, June 2011 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, Charles County shall commence and complete the implementation of restoration efforts for twenty percent of the County’s impervious surface area consistent with the methodology described in the MDE document cited in PART IV.E.2.a. that has not already been restored to the MEP. 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, Charles County shall submit to MDE for approval a restoration plan for each stormwater WLA approved by EPA prior to the effective date of the permit. The County shall submit restoration plans for subsequent TMDL WLAs within one year of EPA approval. Upon approval by MDE, these restoration plans will be enforceable under this permit. As part of the restoration plans, Charles County shall:
- i. Include the final date for meeting applicable WLAs and a detailed schedule for implementing all structural and nonstructural water quality 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 restoration plans through monitoring or modeling to document 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 County’s watershed assessments.

3. Public Participation

Charles County shall provide continual outreach to the public regarding the development of its watershed assessments and restoration plans. Additionally, the County shall allow for public participation in the TMDL process, solicit input, and incorporate any relevant

ideas and program improvements that can aid in achieving TMDLs and water quality standards. Charles County shall provide:

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

4. TMDL Compliance

Charles County 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 the County's restoration plans and how these plans are working toward achieving compliance with EPA approved TMDLs. Charles County 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

Charles County 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 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. The County 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, the County shall conduct physical stream monitoring 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

The County shall continue monitoring in the Mattawoman 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. Eight (8) storm events shall be monitored per year at each monitoring location with at least two 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 TMDL with a stormwater WLA.

- 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 approved study design; and
 - ii. The County 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: The County 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

The County shall continue monitoring the Piney Branch watershed, or select and submit for MDE's approval a new watershed restoration project for determining the effectiveness of stormwater management practices for stream channel protection. Physical stream monitoring protocols shall include:

- a. An annual stream profile and survey of permanently monumented cross-sections in the unnamed tributary to Piney Branch to evaluate channel stability;
- 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 Charles County's NPDES stormwater program. The County shall submit annual reports on or before the anniversary date of this permit and post these reports on the County's website. All information, data, and analyses shall be based on the 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. Litter and Floatables;
 - 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 the number and nature of enforcement actions, inspections, and 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 the County'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);
 - k. Grading permit information - quarterly (PART IV. D.2); and
 - l. Fiscal analyses - cost for NPDES related implementation (PART IV.G).
3. Because this permit uses an iterative approach to implementation, the County must evaluate the effectiveness of its programs in each annual report. BMP and program modifications shall be made within 12 months if the County's annual report does not demonstrate compliance with this permit and show progress toward meeting WLAs developed under EPA approved TMDLs.

B. Program Review

In order to assess the effectiveness of the County'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 local 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 the County 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 application process, Charles County shall submit to MDE an executive summary of its NPDES stormwater management program that specifically describes how the County is meeting the overall goal to ensure that each County watershed has been thoroughly evaluated and its progress in implementing water quality improvements. This application shall be used to gauge the effectiveness of the County's NPDES stormwater program and will provide guidance for developing future permit conditions. At a minimum, the application summary shall include:

1. Charles County'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 County 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 WLAs developed under EPA approved TMDLs;
 - c. Pollutant load reductions as a result of this permit and an evaluation of whether 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 County 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 the County'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 allocation (LA), point sources or WLA, 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 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 Charles County 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.

B. Comprehensive Planning

Charles County shall cooperate with other agencies during the completion of the Water Resources Element (WRE) as required by the Maryland Economic Growth, Resource Protection and Planning Act of 1992 (Article 66B, Annotated Code of Maryland). Such cooperation shall entail all reasonable actions authorized by law and shall not be restricted by the responsibilities attributed to other entities by separate State statute, including but not limited to reviewing and approving plans and appropriating funds.

PART VII. ENFORCEMENT AND PENALTIES

A. Discharge Prohibitions and Receiving Water Limitations

Charles County 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 County 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; or
4. Fish or other aquatic life.

B. Duty to Mitigate

Charles County 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

Charles County shall be responsible for complying with all conditions of this permit. Other entities may be used to meet various permit obligations provided that both the County and the other entity agree contractually. Regardless of any arrangement entered into, however, the County 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. The County 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.

The County 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 the County to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the County only when the operation is necessary to achieve compliance with the conditions of the permit.

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 the County 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 2 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 2 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 2 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 the County 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 the County 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 effluent limit requirements are consistent with any applicable TMDL WLA allocated to the discharge of pollutants from the MS4; or
- f. As specified in 40 CFR §§122.62, 122.63, 122.64, and 124.5.

2. Duty to Provide Information

The County 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. The County shall also furnish to MDE, upon request, copies of records required to be kept by this permit.

F. Inspection and Entry

Charles County 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

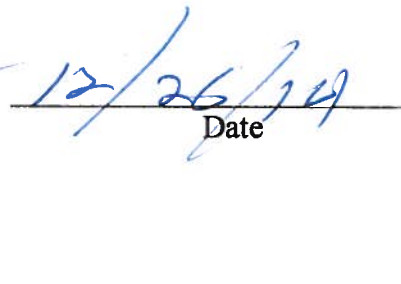
The provisions of this permit are severable. If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect. If the application of any provision of this permit to any circumstance is held invalid, its application to other circumstances 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 |
|-------------|-----------|---|--------------------------------------|

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 |

²Use 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 ½" 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-bioretenion 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 |

⁴Pollution 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)
Charles County

This NPDES permit requires Charles County to submit an annual TMDL assessment report evaluating the effectiveness of the County'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 Charles County:

| Basin Name | 8-digit Basin Number | Impairment | YEAR | Comments |
|--|--|----------------------|------|----------|
| Patuxent River Lower (Island Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Washington and Persimmons Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Trent Hall Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Town Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Solomons Is Harbor) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (St. Thomas Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Indian Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Harper and Pearsons Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Goose Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Cuckhold Creek) | 02131101 | Bacteria | 2005 | Local |
| Patuxent River Lower (Mill Creek) | 02131101 | Bacteria | 2009 | Local |
| Patuxent River Lower (Lake Lariat) | 02131101 | Mercury | 2004 | Local |
| Potomac River Lower (White's Neck Creek) | 02140101 | Bacteria | 2005 | Local |
| Potomac River Lower (Tall Timbers Cove) | 02140101 | Bacteria | 2005 | Local |
| Potomac River Lower | 02140101 | PCBs | 2007 | Local |
| Potomac River Middle Tidal | 02140102 | PCBs | 2007 | Local |
| Wicomico River (Chaptico Bay) | 02140106 | Bacteria | 2005 | Local |
| Wicomico River (Charleston Creek) | 02140106 | Bacteria | 2005 | Local |
| Port Tobacco River | 02140109 | Nutrients | 1999 | Local |
| Mattawoman Creek | 02140111 | Nutrients | 2005 | Local |
| Potomac River Upper Tidal | 02140201 | PCBs | 2007 | Local |
| Lower Patuxent River Mesohaline | 02131101 | Nutrients & Sediment | 2010 | Bay TMDL |
| Lower Potomac River Oligohaline 2 | 02140109 | Nutrients & Sediment | 2010 | Bay TMDL |
| Lower Potomac River Oligohaline 3 | 02140110 | Nutrients & Sediment | 2010 | Bay TMDL |
| Mattawoman Creek Tidal Fresh | 02140111 | Nutrients & Sediment | 2010 | Bay TMDL |
| Potomac River Mesohaline | 02140101, 02140103, 02140104, 02140105, 02140106, 02140107, 02140108 | Nutrients & Sediment | 2010 | Bay TMDL |
| Lower Potomac River Oligohaline 1 | 02140102, 02140101 | Nutrients & Sediment | 2010 | Bay TMDL |
| Potomac River Tidal Fresh | 02140102, 02140201, 02140202, 02140204 | Nutrients & Sediment | 2010 | Bay TMDL |