MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER AND SCIENCE ADMINISTRATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

GENERAL DISCHARGE PERMIT NO. 26-IM-5500
GENERAL NPDES NO. MDR055500

Final Determination:	To be determined
Effective Date:	To be determined (180 days after final determination)
Expiration Date:	To be determined

This National Pollutant Discharge Elimination System (NPDES) general permit covers small municipal separate storm sewer systems (MS4) in certain portions of the State of Maryland. MS4 owners or operators regulated under this general permit must seek authorization to discharge under this general permit by submitting a Notice of Intent (NOI) to the Maryland Department of the Environment by the effective date of this general permit. An NOI serves as notification that the MS4 owner or operator intends to comply with the terms and conditions of this general permit.

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PART I. COVERAGE UNDER THIS GENERAL PERMIT

A. Permit Area

This National Pollutant Discharge Elimination System (NPDES) general permit covers small municipal separate storm sewer systems (MS4) in certain portions of the State of Maryland (State) as defined under Title 40 of the Code of Federal Regulations (CFR) §§ 122.26(b)(16) and 122.32(a).

B. Regulated Small MS4s

MS4 owners or operators required to obtain coverage under this general permit are those located within the geographical area of:

1. Urban areas with a population of 50,000 or more people as determined by the latest Decennial Census by the United States (U.S.) Census Bureau; or

2. Other MS4s designated by the Maryland Department of the Environment (MDE) under the Clean Water Act (CWA) and associated regulations.

C. Obtaining Coverage

Any owner or operator of an MS4 regulated under 40 CFR §§ 122.26(b)(16) and 122.32(a) must seek authorization to discharge under this general permit by submitting a Notice of Intent (NOI) according to the requirements in Part II below, using the form provided by MDE in Appendix C. A list of MS4 owners or operators required to obtain permit coverage is found in Appendix A. A small municipality may be a co-permittee or coordinate with a surrounding county covered under an NPDES MS4 permit.

D. Definitions

The terms used in this general permit are defined in the relevant chapters of 40 CFR §§ 122 – 124 and 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 II. NOTICE OF INTENT REQUIREMENTS

A. Deadlines for Notification

Each MS4 owner or operator identified in Appendix A must seek authorization to discharge under this general permit and submit an NOI to MDE that contains the information outlined in Part II.B by the effective date of this general permit.

B. Contents

An NOI serves as notification that the MS4 owner or operator intends to comply with this general permit. The NOI form is provided in Appendix C of this general permit. Each NOI must contain the following:

1. The name, address, telephone number, and e-mail address of the responsible contact person for the required MS4 programs listed in Parts IV and V of this general permit.

2. A brief description of the jurisdiction. This must include the approximate size, land use(s), a description of the stormwater conveyance system, name of receiving waters to which the MS4 discharges, and a list of any properties owned or operated by the permittee that are covered under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity.

3. A brief description of any agreements with another entity when responsibilities for permit compliance are shared between the permittee and the entity. The relationship and specific duties of all parties must be provided.

4. An estimate of the anticipated expenditures to implement the required programs specified in this general permit.

5. An authorized signature from a responsible official according to Part VII.O of this general permit.

C. Where to Submit

MS4 owners or operators applying for coverage under this general permit must submit NOIs to the following:

Via email: Phase2MS4.MDE@Maryland.gov; or

Via U.S. Mail:
Maryland Department of the Environment
Water and Science Administration
Stormwater, Dam Safety, and Flood Management Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1708

PART III. WATER QUALITY

MS4 owners or operators covered under this general permit must manage, implement, and enforce management programs to control all stormwater discharges in accordance with the CWA

and corresponding stormwater NPDES regulations, 40 CFR §§ 122 – 124, and 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 (WLA) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with Title 33 of the U.S. Code (U.S.C.) § 1342(p)(3)(B)(iii); 40 CFR § 122.44(k)(2) and (3).

3. Comply with all other provisions and requirements contained in this general permit, and in plans and schedules developed in fulfillment of this general permit.

Compliance with the conditions contained in Parts IV and V of this general permit shall constitute compliance with 33 U.S.C. § 1342(p)(3)(B)(iii) of the CWA and adequate progress toward compliance with Maryland's receiving water quality standards and any stormwater WLA approved by the U.S. Environmental Protection Agency (EPA) for this permit term.

PART IV. MINIMUM CONTROL MEASURES

Permittees must ensure that the following minimum control measures (MCMs) are implemented in the jurisdiction served by each MS4 covered under this general permit. The six MCMs described below include: Public Education and Outreach, Public Involvement and Participation, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post Construction Stormwater Management, and Pollution Prevention and Good Housekeeping. Specific requirements for compliance with this general permit are outlined for each MCM below. Additional guidance may be found in Appendix B. Permittees must report on the status of implementation for each of these required programs in accordance with the MS4 Progress Report (Appendix D).

Permittees renewing coverage (renewal permittees) under this general permit must continue to implement and update each of the required MCM programs as described below. Permittees must document program development in MS4 Progress Reports and demonstrate full implementation of all permit requirements by the end of the five-year permit term.

Permittees may partner with or share responsibility with other entities for compliance with any requirement of this general permit. This may entail establishing partnerships with the surrounding county or a municipality performing similar activities under the requirements of an NPDES MS4 permit. If responsibility for permit compliance is shared between the permittee and another entity, the relationship and specific duties of each participating entity must be outlined and submitted as part of each permittee's MS4 Progress Reports. MDE recommends that permittees establish a legally binding contract, memorandum of understanding (MOU), or similar agreement that identifies the roles and responsibilities of all parties. However, the permittee remains responsible for compliance with federal and State law and all conditions of this general permit.

A. Public Education and Outreach

Permittees must implement and maintain a public education and outreach program and distribute educational materials to the community and the permittee's personnel to reduce the discharge of pollutants in stormwater runoff in accordance with 40 CFR § 122.34(b)(1). This includes developing materials, such as brochures, booklets, and training programs, to educate the public about the impacts of pollution in stormwater discharges on receiving waters, the importance of controlling these discharges, and how the public can reduce pollutants in stormwater runoff. This program may be coordinated with other portions of the permittee's MS4 program or developed independently of other pollution control efforts.

Renewal permittees must update and continue to maintain their public education and outreach program. New permittees must develop this program within the first year of the effective date of this general permit and initiate implementation in years two through five. All permittees must provide program updates in accordance with the MS4 Progress Report specified for this MCM. Permittees must demonstrate full implementation of all permit requirements by the end of the five-year permit term.

To comply with this MCM, each permittee must:

1. Develop a process by which the public can report water quality complaints that includes a phone number or online reporting system within one year of the effective date of this general permit.

2. Promote public education and outreach activities by determining the target audience(s) and include audiences with environmental justice (EJ) concerns where applicable. The target audience(s) should be located within the area served by the permittee's MS4. Permittees must utilize the MDEnviroScreen Tool to identify these communities.

3. Develop materials to educate the public on the impacts of stormwater pollution on water quality and human health. Topics may include but are not limited to water conservation, chemical application on lawns and landscaping, proper car-washing procedures, proper disposal of paint and other household hazardous waste, recycling and trash pick-up, and proper pet waste disposal.

4. Distribute at least five stormwater educational materials through newsletters, websites, or other appropriate methods. Submit examples of educational material to MDE in accordance with reporting requirements.

5. Develop and implement an annual personnel training program that addresses appropriate topics to prevent or reduce pollutant discharges in stormwater into the MS4. Submit the topics selected and the attendee list to MDE in accordance with reporting requirements.

6. Briefly describe in each MS4 Progress Report, as required in Part VI.C.3, how the education programs complement and strengthen other programs of the general permit.

B. Public Involvement and Participation

Permittees must provide and foster opportunities for public participation in the MS4 management program to prevent or reduce pollutant discharges from stormwater into the MS4 in accordance with 40 CFR § 122.34(b)(2). This program may be coordinated with other portions of the permittee's MS4 program or developed independently of other pollution control efforts.

Renewal permittees must update and continue to maintain their public involvement and participation program. New permittees must develop this program within the first year of the effective date of this general permit and initiate implementation in years two through five. All permittees must provide program updates in accordance with the MS4 Progress Report specified for this MCM. Permittees must demonstrate full implementation of all permit requirements by the end of the five-year permit term.

To comply with this MCM, each permittee must:

1. Promote public involvement and participation activities by determining the target audience(s), including audiences with EJ concerns where applicable. The target audience(s) should be located within the area served by the permittee's MS4.

2. Specify activities that are appropriate for the target audience and promote public participation. Include activities that are appropriate for communities with EJ concerns that are served by the permittee's MS4.

3. Perform at least five public events during the term of this general permit and report to MDE in accordance with reporting requirements. Activities may include but are not limited to the implementation of stormwater projects such as tree planting, community beautification, adopt-a-stream programs, drain stenciling, Earth Day events, neighborhood gardens, stream cleanups, green infrastructure, other infrastructure improvements, or public surveys.

4. Provide public access to the permittee's MS4 Progress Reports via the permittee's website or similar method(s), subject to 33 U.S.C. § 1318(b).

5. Comply with all State and federal public notice requirements for any regulated activity associated with this general permit.

6. Briefly describe in each MS4 Progress Report how the public involvement and participation activities complement and strengthen other programs under the general permit.

C. Illicit Discharge Detection and Elimination (IDDE)

Permittees must develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4 in accordance with 40 CFR § 122.34(b)(3). A permittee satisfies this MCM by field screening outfalls or conducting visual surveys of alternative inspection points that drain to the MS4, inspecting the MS4 to identify sources of illicit discharges, eliminating illegal connections and illicit discharges, and enforcing penalties where appropriate. The illicit discharge program must also address illegal dumping and spills. Permittees should utilize MDE's IDDE guidance in Appendix B of this general permit to comply with IDDE requirements.

Renewal permittees must update their IDDE program in accordance with the requirements noted below. New permittees must develop this program within the first year of the effective date of this general permit and initiate implementation in years two through five. All permittees must provide program updates in accordance with the MS4 Progress Report specified for this MCM. Permittees must demonstrate full implementation of all permit requirements by the end of the five-year permit term.

To comply with this MCM, each permittee must:

1. Develop, maintain, and update a map of the MS4 as follows:

    a. Continue to identify all stormwater conveyances, outfalls as defined in 40 CFR § 122.26(b)(9) (i.e., "the point where a municipal separate storm sewer discharges to waters of the United States"), stormwater best management practices (BMPs), and surface waters of the State, including waters of the United States, that receive stormwater discharges.

    b. Prioritize mapping efforts in areas with the highest potential to pollute, such as regulated urban areas (these areas are described in Appendix A), commercial areas, or rapidly developing areas as noted in the standard operating procedures (SOP) outlined below.

2. Adopt or maintain an ordinance or other regulatory means that prohibits illicit discharges into the MS4 and establishes appropriate remedies to enforce these prohibitions.

3. Establish and document legal means for gaining access to private property to investigate and eliminate illicit discharges (e.g., ordinance, easements).

4. New permittees must develop and submit SOPs to MDE for review and approval within two years of the effective date of this general permit. Renewal permittees must implement existing SOPs previously approved by MDE. Renewal permittees must also review and update existing SOPs to include the criteria noted below and re-submit these SOPs to MDE for review and approval within two years of the

effective date of this general permit. Both new and updated SOPs must include the following:

a. Identify the frequency of outfall inspections. This shall be determined by tabulating the total number of outfalls within the permittee's jurisdiction and implementing an inspection schedule to screen 20% of the total outfalls per year, up to 100 outfalls annually.

b. Identify priority areas for illicit discharge screening at locations that have the greatest potential to pollute. This may include locations within highly developed land uses such as commercial or industrial complexes; locations where sanitary sewer overflows (SSO) occur; or locations with aging infrastructure.

c. Develop an inspection checklist that describes how outfalls are screened for dry weather flows. An example of an outfall screening checklist is provided in MDE's guidance in Appendix B of this general permit.

d. Develop inspection procedures for screening alternative inspection points as appropriate. Alternative inspection points further up the system (e.g., at a manhole, inlet, inflow to a stormwater BMP, or at a point source discharge in a commercial or industrial area) are necessary when outfalls are submerged or where groundwater flow is present. Alternative inspection points are also encouraged where an outfall serves a large drainage area or serves highly urban, commercial, or industrial properties.

e. Develop procedures to identify the source and eliminate spills, illegal dumping, and other illicit discharges.

f. Develop enforcement and penalty procedures.

g. Develop education and outreach to inform personnel, businesses, and the public of the issues relating to illegal discharges and improper waste disposal. Consider targeting communities with EJ concerns for education on issues related to illicit discharges.

h. Coordinate with any adjacent MS4 operator(s) to track and eliminate suspected illicit discharges from interconnected systems.

5. Document the results of illicit discharge screening efforts in MS4 Progress Reports. This must include a description of how screening locations were prioritized and any necessary follow-up investigations, enforcement, or remediation measures implemented to address any suspected illicit discharge.

6. Maintain complete records of IDDE program investigations and submit example inspection reports in each MS4 Progress Report.

D. Construction Site Stormwater Runoff Control

Permittees must comply with Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland, and MDE's erosion and sediment control regulations under COMAR 26.17.01. The statute and COMAR specify the requirements for any construction activity that disturbs 5,000 square feet of land area or 100 cubic yards or more of earth movement. MDE considers compliance with Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland, and COMAR 26.17.01 to constitute compliance with this MCM and 40 CFR § 122.34(b)(4).

Permittees must provide program updates in accordance with the MS4 Progress Report specified for this MCM. Permittees must demonstrate full implementation of all permit requirements by the end of the five-year permit term.

To comply with this MCM and with State and federal laws and regulations pertaining to an acceptable erosion and sediment control program, each permittee must:

1. Adopt an MDE-approved ordinance that includes a process for plan review and approval of proposed construction drawings and erosion and sediment control plans, and inspection and enforcement procedures in accordance with COMAR 26.17.01. Any proposed amendments to this ordinance must be submitted to MDE for review and approval.

   A municipality may accept the program that is being implemented by its respective county, Soil Conservation District, or the State of Maryland, as applicable. Each permittee that relies on its respective county for the implementation of an erosion and sediment control program must execute a binding agreement or resolution with the county. The agreement must clarify each party's respective roles related to plan review and approval, construction site inspections, and enforcement.

2. Comply with requirements under MDE's *2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control* or the most recent revision and COMAR 26.17.01.

3. Ensure that all necessary permits are obtained, including MDE's General Permit for Stormwater Associated with Construction Activity for projects disturbing one acre or more, and local sediment and erosion control plan approval.

4. Develop a process for receiving, investigating, and resolving complaints from any interested party related to construction activities within the jurisdiction. Notify the complainant of the investigation and findings within seven days of receipt of the complaint.

5. Track all active grading permits within the jurisdiction and report to MDE the disturbed areas for all active grading permits in accordance with the MS4 Progress Report.

6. Ensure that construction site inspections and enforcement procedures are performed in accordance with COMAR 26.17.01. For permittees that are not delegated, this requires ongoing communication and collaboration with the enforcement authority to ensure that any violations are properly addressed.

7. Use procedures within existing municipal codes to prevent and reduce erosion and sediment pollution into waters of the State from any construction activity. For example, a municipality may suspend or deny the issuance of a building or grading permit when it determines that the applicant is not in compliance with an approved erosion and sediment control plan.

8. Ensure personnel are adequately trained in proper procedures and actions to address potential discharge of pollutants into the MS4 as a result of any construction activity. Ensure that appropriate personnel complete the Responsible Personnel Certification online training course through MDE.

E. Post Construction Stormwater Management

Permittees must maintain an acceptable stormwater management program in accordance with Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland, and MDE's stormwater management regulations under COMAR 26.17.02. Stormwater management must be addressed for new development and redevelopment for any proposed project that disturbs 5,000 square feet or more of land area. MDE considers compliance with Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland, and COMAR 26.17.02 to constitute compliance with this MCM of this general permit and 40 CFR § 122.34(b)(5).

Permittees must provide program updates in accordance with the MS4 Progress Report specified for this MCM. Permittees must demonstrate full implementation of all permit requirements by the end of the five-year permit term.

To comply with this MCM and with State and federal laws, regulations, ordinances, and procedures pertaining to an acceptable stormwater management program, each permittee must:

1. Adopt an MDE-approved stormwater management ordinance that establishes plan review and approval processes, and inspection and enforcement procedures that ensure proper construction and maintenance of best management practices (BMPs) in accordance with COMAR 26.17.02. Any proposed amendments to this ordinance must be submitted to MDE for review and approval.

   A municipality may accept an MDE-approved stormwater program implemented by its respective county. Each permittee that relies on the county for the implementation of a stormwater management program must execute a binding agreement or resolution with the county. The agreement must clarify the respective roles of each party related to stormwater plan review and approval, construction and post-construction inspections, routine maintenance, enforcement, and BMP tracking.

2. Require that all new and redevelopment projects adhere to the principles outlined in COMAR 26.17.02 and MDE's design criteria, methods, and performance standards in the latest version of the Maryland Stormwater Design Manual (Manual). This includes:

   a. Complying with the Stormwater Management requirements under COMAR and the Manual for all new and redevelopment projects; and

   b. Implementing thermal stormwater management strategies in cold water and thermally impaired watersheds.

3. Maintain stormwater program implementation information and provide updates in accordance with the MS4 Progress Report that include:

   a. A BMP database in accordance with the database structure in Appendix B of this general permit.

   b. The status of inspections for each BMP and verification that inspections occur at least once every three years.

   c. The total number of violation notices issued and the status of enforcement activities.

   d. Update inspection and maintenance procedures for MDE review and approval for specific BMP types. MDE's Technical Memorandum #9 may be referenced for this purpose.

   e. A summary of routine maintenance activities for all publicly owned BMPs. Specify actions taken to correct problems noted during routine maintenance activities.

4. Provide training to stormwater program personnel and to personnel who are responsible for proper BMP design, performance, inspection, or routine maintenance. Report to MDE the number of trainings offered, topics covered, and number of attendees.

F. Pollution Prevention and Good Housekeeping

Permittees must develop, implement, and maintain an operation and maintenance program that includes a training component to prevent and reduce pollutant runoff from municipal operations in accordance with 40 CFR § 122.34(b)(6). A permittee satisfies this MCM by developing, implementing, and maintaining procedures for pollution prevention and good housekeeping on permittee-owned or operated properties and roads as outlined below. Permittees should utilize MDE's Good Housekeeping guidance in Appendix B of this general permit.

Renewal permittees must update and continue to maintain their pollution prevention and good housekeeping program. New permittees must develop this program within the first

year of the effective date of this general permit and initiate implementation in years two through five. All permittees must provide program updates in accordance with the MS4 Progress Report. Permittees must demonstrate full implementation of all permit requirements by the end of the five-year permit term.

To comply with this MCM, each permittee must:

1. Ensure that appropriate personnel and contractors receive training at least annually. The training must be designed to reduce or eliminate the discharge of pollutants during municipal operations. Training may include in-person, online, toolbox talks, on-the-job, or other formats. Permittees may enhance and improve existing training activities to fulfill this requirement. Topics must include road salt use during winter weather management, spill prevention and response, proper waste disposal, and periodic visual inspections to detect and correct potential discharges at properties that are owned or operated by the permittee.

2. Develop salt management strategies to reduce the use of winter salt on roads, sidewalks, and parking lots without compromising safety. Permittees shall review the resources and guidance related to salt management strategies in Appendix B of this general permit to develop these program components. Progress on the development and implementation of strategies that address each of the following categories must be submitted in the fourth year MS4 Progress Report:

    a. Personnel training: Train applicable personnel and contractors in best practices for winter weather management with the goal of reducing the application of winter salt and reducing salt discharges into storm drain systems and receiving waters.

    b. Develop and distribute educational information to the public about the impacts of winter salt on human health and the environment, and best practices for salt application.

    c. Equipment and technology: Evaluate opportunities to upgrade equipment and utilize advanced technology to reduce the application of winter salt on roads, sidewalks, and parking lots that the permittee owns or maintains.

    d. Operations: Evaluate and report on permittee procedures involving winter salt storage, handling, application, cleanup, spill prevention, stockpiling and disposal of snow, and equipment cleaning and maintenance. The procedures must identify strategies to reduce salt discharges into storm drain systems and receiving waters.

    e. Tracking: Establish recordkeeping procedures for tracking and reporting the following during each winter season:

        i. Total amount of salt, brine, or other deicing material applied;

        ii. Total precipitation from winter-related events; and

iii. Number of events when salt, brine, or other deicing material was applied.

3. Develop, implement, and maintain a good housekeeping plan (GHP) for permittee-owned or operated properties not required to be covered under Maryland's NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity, where any of the following activities are performed: maintenance of vehicles or heavy equipment, or handling of any of the following materials: deicers, anti-icers, fertilizers, pesticides, road maintenance materials such as gravel and sand, or hazardous materials. A standard plan may be created to address multiple properties where similar activities are conducted, provided the items listed below are addressed. New permittees must develop and implement GHPs as outlined below. Renewal permittees must review and update existing GHPs to include appropriate programmatic improvements. Both new and updated GHPs must include:

   a. A description of site activities;

   b. A list of potential pollutants, including their sources and locations on the site. The plan must consider the conveyance of stormwater entering, flowing across, and leaving the site;

   c. Written good housekeeping procedures designed to prevent discharge of pollutants off-site that include regular visual inspections to detect potential discharges;

   d. Written procedures for corrective actions to address any release, spill, or leak on site;

   e. Documentation of any discharge, release, leak, or spill, including date, findings, and response actions;

   f. Written procedures for maintaining stormwater conveyance systems; and

   g. Reporting on evaluation of opportunities for increasing the solar reflectance of impervious surfaces in cold water and thermally impaired watersheds consistent with the Manual.

4. Quantify and report pollution prevention efforts in each MS4 Progress Report as specified in Appendix D.

5. Submit an update in annual MS4 Progress Reports if the status of industrial activity permit coverage changes for any property submitted in the NOI under Part II.B.2.

PART V. IMPERVIOUS AREA RESTORATION

This general permit includes impervious area restoration requirements to support Chesapeake Bay restoration and local water quality initiatives. Acceptable BMPs to be implemented for

restoration may include the use of ESD practices, structural stormwater BMPs, retrofitting, or alternative restoration practices. Trading with other sectors is allowed in accordance with Maryland's Water Quality Trading Program, outlined in COMAR 26.08.11. Appendix B of this general permit outlines acceptable design criteria, crediting procedures, and impervious area baseline calculations to comply with these requirements.

Permittees must demonstrate compliance with permit requirements by performing the following:

A. Develop a Baseline Impervious Area Assessment

Renewal permittees must use the baselines established and approved by MDE under the prior permit.

New permittees must develop an impervious area baseline analysis. This analysis will calculate the baseline used to determine restoration targets under this permit. The impervious area baseline assessment must be submitted with the first-year MS4 Progress Report for MDE's review and approval. The following information must be submitted in accordance with the MS4 Progress Report:

1. Total impervious area within the permit area of the jurisdiction subject to impervious area restoration requirements. Small MS4 counties may determine baselines within the urban area with a population greater than 50,000 within that jurisdiction.

2. Total impervious acres treated by water quality BMPs.

3. Total impervious acres treated by BMPs providing partial water quality treatment.

4. Total impervious acres treated by nonstructural practices (i.e., rooftop disconnections, non-rooftop disconnections, sheet flow to conservation areas, and vegetated swales).

5. Verification that any impervious area draining to BMPs with missing inspection records is not considered treated for the purpose of calculating the baseline.

6. Total untreated impervious acres, which is the baseline to determine restoration targets.

B. Restoration Implementation

Permittees must meet the following restoration planning and implementation milestones:

1. Renewal permittees must complete restoration of the twenty percent impervious area target approved by MDE under the previous MS4 general permit (No. 13-IM-5500, MDR055500).

2. Renewal permittees must maintain operations for all annual alternative control practices (e.g., street sweeping, catch basin cleaning) implemented in the previous

MS4 general permit or replace an equivalent number of impervious acre credits with other restoration BMPs if operations are discontinued or otherwise reduced.

3. All permittees must ensure proper operation and maintenance of each BMP installed to meet restoration requirements to ensure that it operates as designed and retains its annual pollutant load reductions as follows:

    a. Restore to proper function any failed BMP or replace it with one or more BMPs of equivalent credit and pollution reduction performance.

    b. Update maintenance procedures for each BMP to verify that ongoing maintenance actions are performed and documented to prevent failure and promote resilience. MDE's Technical Memorandum #9 may be referenced for this purpose. Submit the procedures to MDE for review and approval.

4. All permittees must develop restoration plans to treat ten percent of the impervious area baseline approved by MDE under Part V.A. above. This level of restoration is over and above the requirement in Part V.B.1 above. Water quality treatment for the ten percent target can be satisfied by installing BMPs in accordance with Appendix B of this general permit as follows:

    a. Renewal permittees must complete restoration of ten percent of the baseline by the expiration date of this general permit.

    b. New permittees must develop and submit restoration schedules in accordance with the MS4 Progress Report. These schedules must include projected completion dates for restoration of ten percent of the baseline within five years after the expiration date of this general permit.

    c. All permittees that experience restoration implementation delays in the schedule referenced in Part V.B.4.b must develop and submit an adaptive management report in the fourth year Progress Report. This must describe actions to address setbacks and advance implementation to achieve compliance with this requirement.

5. All permittees must submit a Restoration Capabilities Assessment (RCA) in the fourth year MS4 Progress Report for this general permit to inform future permits. This assessment will be used to inform restoration targets in the next permit cycle. Permittees may include local stormwater initiatives that are over and above MS4 permitting obligations to inform the process. The Restoration Capabilities Assessment shall include:

    a. A list of restoration projects and estimated credits with projected implementation dates within five years after the expiration of this general permit.

    b. Restoration opportunities for installing green infrastructure or other stormwater projects in communities with environmental justice concerns.

Permittees must utilize the MDEnviroScreen Tool to identify these communities.

c. Partnerships with other jurisdictions, State and federal agencies, non-governmental organizations, or other entities where applicable.

d. Assessments of infrastructure upgrades and priorities related to sanitary sewer, storm drainage, and conveyance capacity where applicable.

e. Forest conservation or other preservation planning initiatives where applicable.

f. Other initiatives may include local priorities involving stormwater management where applicable. This may include watershed management studies, efforts to address nuisance flooding or other flooding problems, infrastructure, and watershed planning.

6. Reporting: The MS4 Progress Report in Appendix D and the BMP database must be submitted to MDE and include the following:

a. The status of completing all restoration requirements.

b. The status of maintaining operations for alternative annual control practices, including annual and permit average implementation data.

c. The status of ongoing inspections and maintenance for all restoration BMPs.

d. The Restoration Capabilities Assessment, to be submitted in the fourth year annual MS4 Progress Report.

e. A BMP Database and Restoration Activity Schedule consistent with the format in Appendix B of this general permit that includes:

i. All BMPs planned, under construction, or completed for new development, redevelopment, or restoration. The projected or completion date of restoration BMPs must demonstrate compliance with the milestones noted above.

ii. Inspection data. When this information is missing, incomplete, or indicates that a BMP is in failed condition, then any credit previously applied must be removed until proper inspection and maintenance activities are completed.

PART VI. EVALUATION AND ASSESSMENT, RECORDKEEPING, REPORTING, AND PROGRAM REVIEW

A. Evaluation and Assessment

The permittee must evaluate progress toward achieving compliance with all permit requirements, and the appropriateness of implemented BMPs. This must be achieved through reporting to MDE as specified in Part VI.C below.

B. Recordkeeping

The permittee must keep records for at least three years after the termination of this general permit. In addition to the information required in MS4 Progress Reports specified below in Part VI.C, permittees must submit any additional supporting documentation at the request of MDE. The permittee must make its MS4 program information, including all records, available to the public during regular business hours.

C. Reporting

1. The required information specified in Appendix D of the MS4 Progress Report must be submitted each year as described in this section. The reporting period must be based on the State fiscal year, i.e., July 1 – June 30. MS4 Progress Reports are due no later than October 31 of each year.

2. MS4 Progress Reports must include progress toward meeting the restoration targets specified in Part V above and must be submitted each year.

3. Reporting for the six MCMs specified in Part IV must be submitted in years 2 and 4 of this general permit term and include all information requested in Appendix D of the MS4 Progress Report.

PART VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The permittee must comply with all conditions of this general permit. Any permit noncompliance constitutes a violation of the CWA and State law and is grounds for enforcement action; for permit coverage termination, revocation and reissuance, or modification; and denial of permit renewal submittal. The permittee 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, Annotated Code of Maryland, and MDE's regulations adopted pursuant to these statutes.

B. Failure to Notify

Jurisdictions engaging in an activity under this general permit that fail to notify MDE of their intent to be covered under this general permit as described in Part II and who

discharge to waters of the State without submitting an NOI approved by MDE are in violation of the Environment Article, Annotated Code of Maryland, and may be subject to penalties.

C. Limitations on Coverage

1. The following categories of non-stormwater discharges or flows must be addressed where such discharges are identified by the permittee as sources of pollutants to waters of the State: landscape irrigation, diverted stream flows, rising groundwater, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, foundation drains, air conditioning condensate, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering runoff, flows from riparian habitats and wetlands, residual street wash water, and discharges or flows from firefighting activities.

2. Non-stormwater sources, stormwater associated with industrial activity, or discharges associated with construction activities may be authorized to discharge via the municipal separate storm sewer system if such discharges are specifically authorized under an applicable discharge permit issued by MDE.

3. Only discharges from municipal separate storm sewer systems are authorized under this general permit.

D. Penalties Under the CWA - Civil and Criminal

Section 309(g)(2) of the CWA, 33 USC § 1319(d) provides that any person who violates any permit condition is subject to a civil penalty prescribed by statute and subject to adjustment under the inflation adjustment rule. As of the effective date of this permit, pursuant to the Civil Monetary Penalty Inflation Adjustment Rule, 40 CFR Part 19, any person who violates any NPDES permit condition or limitation is liable for an administrative penalty not to exceed $68,445 per day for each such violation. 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 1 year, 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 3 years, or both.

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

Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the permittee from any civil or criminal liability or penalty for violating Title 4, Title 7, or 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 general 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 MDE to impose upon any person who violates a permit condition, administrative civil penalties of up to $10,000 per violation, per day, 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 1 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, Section 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 general 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, Section 9-343, Annotated Code of Maryland, provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this general 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.

F. Need to Halt or Reduce Activity not a Defense

Pursuant to 40 CFR § 122.41(c), it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

G. Continuation of an Expired General Permit

An expired general permit continues in force and effect for all permittees covered under this general permit until a new general permit is issued or the general permit is revoked or withdrawn. Coverage for new permittees may not be granted under an expired general permit.

H. Duty to Mitigate

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

I. Duty to Provide Information

The permittee shall furnish to MDE any information that MDE may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permittee's registration under this general permit, or to determine compliance with this general permit. The permittee shall also furnish to MDE, upon request, copies of records required to be maintained in compliance with the conditions of this general permit.

J. Other Information

When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in the NOI or in any other report to MDE, the permittee shall promptly notify MDE of the facts or information.

K. Requiring an Individual Permit

1. MDE may require any jurisdiction to apply for and obtain an individual NPDES discharge permit. When MDE requires a jurisdiction to apply for an individual NPDES discharge permit, MDE will provide notification in writing that an application is required. This notification shall include a brief statement of the reasons for the decision, an application form, and a deadline for filing the application. Applications must be submitted to MDE. MDE may grant additional time to submit an application upon request of the applicant.

2. Pursuant to 40 CFR § 122.28(b)(3)(iii), any jurisdiction designated for coverage under this general permit may request to be excluded from the coverage of this general permit by applying for an individual NPDES discharge permit. In such cases, the jurisdiction must submit to MDE an individual NPDES discharge permit application in accordance with the requirements of 40 CFR § 122.21, with the reasons supporting the request.

3. When an individual NPDES discharge permit is issued to a jurisdiction designated for coverage under this general permit, the applicability of this general permit to that permittee is automatically terminated on the effective date of the individual permit. When an individual NPDES discharge permit is denied to a jurisdiction otherwise subject to this general permit, then coverage under this general permit may be terminated by MDE.

L. Property Rights

The issuance of this general permit does not convey any property right or exclusive privilege. This general permit does not authorize any injury to real or personal property or any invasion of personal rights, nor any infringement of federal, State, or local law or regulations.

M. Severability

The provisions of this general permit are severable. If any provision of this general 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 general permit to any circumstance is held invalid, the application of this general permit to other circumstances shall not be affected.

N. Permit Actions and Reopener Clause

This general permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any condition of this general permit. The Environment Article, Section 9-330, Annotated Code of Maryland, provides that MDE may revoke coverage under this general permit if MDE finds that:

1. False or inaccurate information was contained in the notification;

2. Conditions or requirements of this general permit have been or are about to be violated;

3. Substantial deviation from plans, specifications, or requirements has occurred;

4. MDE has been refused entry to the premises for the purpose of inspecting to ensure compliance with the conditions of this general permit;

5. A change in conditions exists that requires temporary or permanent reduction or elimination of the permitted discharge;

6. Any State or federal water quality stream standard or effluent standard has been or is threatened to be violated; or

7. Any other good cause exists for revoking coverage under this general permit.

8. If there is evidence indicating that the stormwater discharges authorized by this general permit cause or have the reasonable potential to cause or contribute to a violation of a water quality standard, the permittee may be required to obtain an individual permit or this general permit may be modified to include specific limitations and/or requirements. Permit modification or revocation will be conducted according to COMAR 26.08.04 and 40 CFR §§ 122.62, 122.63, 122.64, or 124.5, as applicable.

O. Signature of Authorized Administrator and Jurisdiction

All NOIs, annual reports, and information submitted to MDE shall be signed as required by COMAR 26.08.04.01-1 and 40 CFR § 122.22. For a municipality, State, Federal, or other public agency, the signatory shall be a principal executive officer, ranking elected official, or other duly authorized employee.

P. Inspection and Entry

The permittee shall allow representatives of MDE and EPA (including an authorized contractor acting as representative of MDE or EPA) access at reasonable times to conduct an inspection of any property or activity that is regulated under this general permit, or to review records that must be kept as a condition of this general permit.

Q. Proper Operations and Maintenance

The permittee shall properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this general permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve or maintain compliance with this general permit.

R. Reporting Requirements

The permittee shall report any non-compliance that may endanger human health or the environment to MDE's Compliance Program within 24 hours from the time when the permittee becomes aware of the circumstances. The 24-hour reporting can be accomplished by telephone at 410-537-3510 or by email to MDE at wsacompliance@maryland.gov with the subject line "24-hour non-compliance report notification, *Permittee Name* MS4."

A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times; if the non-compliance has not been corrected, the anticipated time that it is expected to continue; and all steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance.

PART VIII. AUTHORITY TO ISSUE GENERAL NPDES PERMITS

In compliance with the provisions of the CWA, as amended (33 USC § 1251 *et seq*.), agencies that are defined in Parts I.B.1 and I.B.2 of this general permit, submit an NOI in accordance with Part II of this general permit, and receive approval of that NOI from MDE are authorized to discharge in accordance with the conditions and requirements set forth herein.

_____ _____

D. Lee Currey
Director
Water and Science Administration

Date

APPENDIX A

Maryland Designation Criteria for Small Municipal Separate Storm Sewer Systems

Appendix A

Maryland Designation Criteria for Small Municipal Separate Storm Sewer Systems

Phase I of the U.S. Environmental Protection Agency's (EPA) stormwater program was promulgated in 1990 under the Clean Water Act (CWA). This program relies on National Pollutant Discharge Elimination System (NPDES) permit coverage to address pollutant discharges from stormwater runoff from medium and large municipal separate storm sewer systems (MS4s) that serve populations of 100,000 or more. The Phase II program expands the Phase I program by requiring owners and operators of "small" MS4s in certain urban areas to implement programs to manage polluted stormwater runoff in accordance with an NPDES discharge permit. A small MS4 can be municipally owned, but can also include State and federal agencies, including transportation, universities, local sewer districts, hospitals, military bases, and prisons. This appendix describes the designation criteria for regulating small MS4 municipalities and State and federal properties.

Small Municipal Separate Storm Sewer Systems Permit Area

Parts I.A and I.B of the General Permits for Discharges from Small Municipal Separate Storm Sewer Systems for municipalities and for State and federal properties specify that small MS4s in the State of Maryland are subject to permit coverage if located within the following geographical areas:

1. **Urban areas with a population of 50,000 or more people, as determined by the latest Decennial Census by the U.S. Census Bureau**. MS4 regulations under 40 Code of Federal Regulations (CFR) § 122.32(a)(1) automatically designate small MS4s based upon location in urban areas with a population of 50,000 or more, based on the latest Decennial Census by the Bureau of the Census. In addition, the preamble to the small MS4 regulations (64 FR 68751, December 8, 1999) clarifies that any small MS4 automatically designated into the NPDES program for any given census year due to location within an urban area with a population of 50,000 or more will remain regulated regardless of subsequent census calculations. EPA has developed urban area maps that represent the areas to be automatically designated in the NPDES program.

2. **Other areas designated by the Maryland Department of the Environment (MDE).** Federal regulations under 40 CFR § 122.26(a)(9)(i)(D) and 123.35(b) require State permitting authorities to evaluate additional MS4s other than those identified above for inclusion into the NPDES permit program. This evaluation is based on water quality considerations to determine "whether a storm water discharge results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts." (40 CFR § 123.35(b)(1)(i)).

MDE's designation process includes an evaluation of local water quality documentation in certain areas that are not automatically regulated in accordance with the following steps:

Step 1. Compile Water Quality Documentation: In accordance with 40 CFR § 123.35(b)(1), MDE examined local water quality documentation to determine whether stormwater discharges from an MS4 result in or have the potential to result in water quality impacts, including habitat and biological impacts. The water quality documentation used for this purpose includes the State's total maximum daily load (TMDL) reports and the Maryland Biological Stream Survey (MBSS).

Maryland's TMDL reports include water quality assessments found in the Integrated Report of Surface Water Quality (IR), which identifies waters that meet water quality standards, and waterways that are impaired or threatened and require TMDLs. The MBSS data are a comprehensive compilation of local water quality conditions throughout the State of Maryland. The data are based on field protocols that evaluate stream impairments and water quality through fish and habitat indicators. The MBSS data show that streams receiving stormwater runoff from urban development often have degraded biological communities. The results of these field surveys provide ratings of "good", "fair", "poor", or "very poor", indicating overall stream health. In addition, MBSS data are used to inform Biological Stressor Identification (BSID) reports, which help characterize sources of impairment in local waterways. These water quality data constitute robust information for determining water quality conditions and assessing whether an MS4 should be designated for permit coverage.

Step 2. Evaluate Water Quality Documentation: MDE then evaluated the water quality documentation noted above within certain geographic areas stated below based on the guidance in 40 CFR § 123.35(b)(2) and the Federal Register. Accordingly, the geographic areas listed below were evaluated to determine whether stormwater discharges at these locations result in, or have the potential to result in, water quality impacts. These geographic areas are as follows:

a) *Small MS4s with populations greater than 10,000 and a density of 1,000 people per square mile outside of automatically designated urban areas*.

   Federal regulations under 40 CFR § 123.35(b)(2) specify that States, at a minimum, must evaluate small MS4s in the locations noted above. MDE evaluated the water quality data noted above and determined that stormwater discharges from the Town of Easton's MS4, at a minimum, have the potential to contribute to water quality impacts and should be regulated under the NPDES program. In addition, the Town of Easton was regulated under the previous small MS4 general permit. If the Town were not subject to permit coverage, a reversal of progress may occur and result in an increase in stormwater pollutant discharges. The Town has been formally notified of MDE's water quality evaluation and designation determination.

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

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

Based on this federal guidance, MDE evaluated local water quality data in the City of Brunswick and the Towns of Emmitsburg, Myersville, and Thurmont in Frederick County. As a result of the evaluation, MDE determined that stormwater discharges from the MS4s in these municipalities, at a minimum, have the potential to contribute to water quality impacts. In addition, these municipalities were regulated under the previous small MS4 general permit. If these municipalities were no longer subject to permit coverage, programs and practices implemented under the previous permit may be discontinued and result in an increase in stormwater pollutant discharges. Each jurisdiction noted above has been formally notified of MDE's water quality evaluation and designation determination.

c) *Small MS4s within a local government's jurisdiction but located outside of an urban area as determined by the U.S. Census Bureau.*

Under 40 CFR § 122.32(a)(1), only the portion of the small MS4 that is located within an urban area with a population of 50,000 or more people is automatically designated. However, in the case of counties that are automatically designated, there are significant portions of the jurisdiction where the county also operates MS4s outside of the automatically regulated urban area. This issue generated numerous comments and concerns from some counties designated for coverage under the previous permit. Specifically, those jurisdictions objected to a county-wide designation but also requested flexibility to conduct restoration anywhere in their geographic area. These permittees noted that installing restoration projects throughout the county will reduce pollutant loads and improve water quality. Given these concerns, MDE evaluated water quality conditions in geographic areas under each county's authority to determine whether MS4 discharges should be subject to permit coverage jurisdiction wide.

MDE evaluated local water quality data in the geographic areas noted above and determined that unregulated stormwater discharges from the MS4s have the potential to contribute to water quality impacts. Therefore, MDE has determined that MS4 discharges in Calvert, Cecil, Queen Anne's, St. Mary's, Washington, Wicomico, and

Allegany Counties are to be designated for permit coverage jurisdiction wide. Each jurisdiction noted above has been formally notified of MDE's water quality evaluation and designation determination.

Furthermore, MS4 progress reports submitted by Calvert, Cecil, Queen Anne's, St. Mary's, Washington, and Wicomico Counties indicate that water quality programs and/or restoration practices have been implemented throughout the county. These programs and practices are subject to continued oversight and must be maintained under the conditions of the general permit. Therefore, if these MS4s are not regulated countywide, the programs and practices may be discontinued without appropriate regulatory oversight. Progress toward improving water quality may then be reversed and result in an increase in stormwater pollutant discharges.

Table A.1 below lists all Maryland counties and municipalities that are designated to be regulated under the MS4 program. Table A.1 also notes whether a jurisdiction is to be regulated based on its location within an automatically designated urban area or whether they meet MDE's designation criteria described above. By the effective date of the permit, all regulated MS4s must file a notice of intent (NOI) under this general permit or submit a request to apply for an individual permit to obtain MS4 permit coverage under the NPDES program.

MS4 General Permit Waiver Criteria

The Code of Federal Regulations specifies that certain municipalities may be waived from permit coverage under the following conditions:

1. An MS4 serves a population of less than 1,000 and does not contribute substantially to the pollutant loadings of a physically interconnected regulated MS4, and stormwater controls are not needed based on wasteload allocations (WLAs) in an EPA-approved or established total maximum daily load (TMDL). Jurisdictions that meet this criterion are automatically waived; or

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

In addition to the above waiver criteria, municipalities that discharge stormwater runoff combined with municipal sewage (i.e., combined sewer systems (CSS)) are point sources that must obtain an NPDES discharge permit from MDE and are not subject to MS4 requirements under 40 CFR § 122.26(a)(7). A municipality may also request co-permittee status with its respective Phase I or Phase II county. Approximately 40 small municipalities are currently regulated through the MS4 NPDES program as co-permittees within Carroll, Montgomery, and Prince George's Counties.

Table A.1. Phase II MS4 General Permit Designation by County

Counties and Baltimore City	Jurisdictions Designated for Phase II MS4 Coverage	Justification
Allegany	Allegany County* and Frostburg*	County meets criteria in #1 and #2c and City meets #1
Anne Arundel	Annapolis	City meets criteria in #1
Baltimore	N/A	Phase I permit covers entire county
Baltimore City	N/A	Phase I permit covers entire city
Calvert	Calvert County	County meets criteria in #1 and #2c
Caroline	N/A	Designation Criteria N/A
Carroll	N/A	Phase I permit covers all municipalities including a portion of Mount Airy located in Frederick County
Cecil	Cecil County, Charlestown*, Elkton, North East, Perryville, and Rising Sun	Municipalities meet criteria in #1; County meets criteria in #1 and #2c
Charles	Indian Head and La Plata	Towns meet criteria in #1
Dorchester	N/A	Designation Criteria N/A
Frederick	Brunswick, Emmitsburg, Frederick City, New Market*, Middletown, Myersville, Thurmont, and Walkersville	City of Frederick, Middletown, New Market and Walkersville meet criteria in #1; Brunswick, Emmitsburg, Thurmont, and Myersville meet the criteria in 2b
Garrett	N/A	Designation Criteria N/A
Harford	Aberdeen, Bel Air, and Havre de Grace	Municipalities meet criteria in #1
Howard	N/A	Phase I permit covers entire county
Kent	N/A	Designation Criteria N/A
Montgomery	Gaithersburg, Rockville, and Takoma Park	Municipalities meet criteria in #1; Phase I permit covers all other incorporated municipalities not listed here
Prince George's	Bowie	City meets criteria in #1; Phase I permit covers all other municipalities
Queen Anne's	Queen Anne's County	County is located w/in urban area and meets criteria in #1 and #2c
St. Mary's	St. Mary's County	County meets criteria in #1 and #2c
Somerset	N/A	Designation Criteria N/A
Talbot	Easton	Town meets criteria in # 2a
Washington	Washington County, Boonsboro, Hagerstown, Smithsburg, and Williamsport	Municipalities meet criteria in #1; County meets criteria in #1 and #2c
Wicomico	Wicomico County, Delmar*, Fruitland, and Salisbury	Municipalities meet criteria in #1; County meets criteria in #1 and # 2c
Worcester	N/A	Designation Criteria N/A

*Indicates a county or municipality newly designated for coverage as a Phase II small MS4

Eligible State and Federal Properties for MS4 Permit Coverage

The definition of a small MS4 is noted under 40 CFR § 122.26(b)(16), and specifies that small MS4s are: "Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body" and include "systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways or other thoroughfares." Therefore, the CFR definition of a small MS4 includes MS4s located on State and federal properties that are similar to municipal systems. However, regulated small MS4s do not include separate storm sewer systems that serve individual buildings in accordance with 40 CFR § 122.26(b)(16)(iii) and 64 FR 68749.

Other available documentation, such as federal guidance defining urban areas and literature describing water resource impacts from developed lands, is also an important consideration when determining eligibility criteria. For example, documentation that evaluates the potential for properties to contribute pollutants to the MS4 is also considered. Specifically, *Impacts of Impervious Cover on Aquatic Systems* (Center for Watershed Protection, 2003) indicates that in-stream water quality declines when watershed impervious cover exceeds ten percent. As part of this research, the Center for Watershed Protection conducted a comprehensive literature review of more than 225 research studies that assessed the impact of urbanization on aquatic systems and integrated those findings into a model to predict the effects of impervious cover.

Based on this information, MDE has determined that an impervious area threshold is appropriate for establishing eligibility criteria for government properties for which agencies are required to obtain MS4 general permit coverage. Eligible properties are those that have greater than ten percent impervious area. This is a conservative threshold when compared to the U.S. Census Bureau's urban area definition for non-residential urban territory, and it considers water quality and natural resource protection. This threshold allows the small MS4 program to concentrate on the most developed properties, such as military bases, hospitals, prison complexes, and highways, consistent with the intent of federal regulations.

MS4s eligible for coverage under this general permit include those on properties that:

1. Are owned or operated by the State of Maryland or the U.S. and located within a regulated urban area; and

2. Serve developed land area greater than five acres and have at least ten percent impervious area property-wide; or

3. Are already covered under an NPDES small MS4 Phase II general permit.

State and Federal MS4 General Permit Waiver Criteria

MDE may grant a waiver from permit coverage if a State or federal agency does not own or operate a system of conveyances on a property, consistent with the intent of EPA guidelines described above. The owner or operator must demonstrate that the property:

1. Is comprised of very discrete areas, such as individual buildings. For example, a small property containing few buildings that have associated parking and driveways with storm drains directly connected to a surrounding MS4 may be eligible for a waiver. Conversely, properties with numerous buildings, interior roads, and interior storm sewer infrastructure would not qualify for a waiver; and

2. Does not discharge a significant amount of pollutants from its MS4; or

3. Is not a military base, large hospital complex, prison complex, highway, or thoroughfare, and meets MDE's waiver criteria one or two above.

A State or federal agency that owns or operates any property that meets the eligibility criteria above and does not receive a waiver must file a notice of intent (NOI) by the effective date of this general permit. Alternatively, an agency may apply for coverage under an individual NPDES MS4 permit. A list of potential State and federal agencies that may be affected by the eligibility criteria is available in Tables A.2 and A.3 (below). Permittees may file joint applications and share responsibilities to comply efficiently with the general permit's requirements.

Summary

In accordance with the CWA, the criteria described above will require general permit coverage for small municipalities and for State and federal properties that have the greatest likelihood of discharging polluted stormwater runoff. Regulating these small MS4s under the NPDES program will allow implementation of stormwater programs to protect water quality. MDE will consider additional information from municipal, State, or federal MS4 owners or operators regarding eligibility for permit coverage, such as high population and growth areas, as well as whether a system discharges to sensitive waters, is contiguous to other regulated systems, or is a significant contributor of pollutant loadings to a physically interconnected MS4 that is regulated by the NPDES program.

Table A.2. Federal Agencies Potentially Eligible for Permit Coverage

Federal Agency	Property Name
Architect of the Capitol	Library of Congress at Ft. Meade Campus
Army Reserve	1SG Adam S Brandt Memorial (Curtis Bay), Jachman USARC, Charles County USARC, AMSA 83(M)
Dept of Agriculture	Beltsville Agricultural Research Center, Animal and Plant Health Inspection Service
Dept of Defense	Joint Base Andrews
Dept of Defense, Army	Aberdeen Proving Grounds, Fort Detrick, Adelphi Lab, Fort George G. Meade
Dept of Defense, Navy	Indian Head, Bethesda, Carderock and Suitland, Naval Academy, and Pax River
Dept of Homeland Security	FLETC Cheltenham Training Center and U.S. Coast Guard at Hawkins Point
Dept of Veterans Affairs (VA)	Loch Raven and Perry Point
General Services Administration	Centers for Medicare and Medicaid, FDA White Oak, Social Security Administration, Suitland Federal Center
National Aeronautics and Space Administration	Goddard Space Flight Center
National Institutes of Health	Bethesda Campus
National Institute of Standards & Technology	Gaithersburg Campus
National Park Service	George Washington Memorial Parkway, Baltimore-Washington Parkway, Suitland Parkway
National Security Agency	Fort Meade and Friendship Annex
Smithsonian Support Center	Suitland property
U.S. Fire Administration	FEMA Emmitsburg Campus
U.S. Postal Service	William F. Bolger Center and Capitol Heights District
U.S. Secret Service	Powder Mill Road Campus

Table A.3. State Agencies Potentially Eligible for Permit Coverage

State Agency	Property Name
MD Air National Guard	Martin State Airport
MD Army National Guard	Havre De Grace Military Reservation, Dundalk Readiness Center, Laurel Readiness Center, Olney Readiness Center, Major General Linda L. Singh Readiness Center
MD Dept of General Services	Ellicott City District Courthouse
MD Dept of Health	Springfield Hospital Center, Spring Grove Hospital Center, Clifton T. Perkins Hospital
MD Dept of Public Safety & Correctional Services	Correctional and Detention Complex Baltimore City, Correctional Facility Jessup Region, Patuxent Institution
MD Dept of Transportation, Maryland Aviation Administration	Martin State Airport, BWI Thurgood Marshall Airport
MD Dept of Transportation, Motor Vehicle Administration	Annapolis Branch, Bel Air Branch, Beltsville Branch, Frederick Branch, Glen Burnie Branch, Hagerstown Branch, Largo Branch, Salisbury Branch, Waldorf Branch
MD Dept of Transportation, Port Administration	Dundalk Marine Terminal, Fairfield Marine Terminal, Hawkins Point Marine Terminal, Intermodal Container Transfer Facility, Masonville Marine Terminal, North Locust Point Marine Terminal, South Locust Point Marine Terminal, Seagirt Marine Terminal, Cox Creek, Duke Property, Point Breeze Property
MD Dept of Transportation, Transit Administration	Multiple properties
MD Dept of Transportation, Transportation Authority	Baltimore Harbor Tunnel, Fort McHenry Tunnel, Francis Scott Key Bridge, Harry W. Nice Memorial Bridge, Intercounty Connector, John F. Kennedy Memorial Highway, Thomas J. Hatem Memorial Bridge, Bay Bridge, Point Breeze
MD Food Center Authority	Jessup properties
MD National Capital Parks & Planning Commission	Montgomery Parks
MD School for the Deaf	Columbia and Frederick campuses
MD Stadium Authority	Camden Yards Sports Complex
Universities	Bowie State University, University of Maryland Baltimore County, University of Maryland College Park, Frostburg State University*, University of Maryland Global Campus, Morgan State University, Salisbury University, Universities at Shady Grove, Towson University
Washington Metropolitan Area Transit Authority	Multiple properties

*Indicates a State or federal agency newly designated for coverage as a Phase II small MS4

APPENDIX B

Compliance with General Permit Requirements for Small Municipal Storm Sewer Systems

Appendix B

Compliance with General Permit Requirements for Small Municipal Separate Storm Sewer Systems

The Maryland Department of the Environment (MDE) has issued two general discharge permits for small Municipal Separate Storm Sewer Systems (MS4s): one for small municipalities and another for State and federal agencies. These two permits require that management programs be developed to effectively control the discharge of pollutants from stormwater runoff and improve water quality. These small MS4 general permits are issued in accordance with the Clean Water Act (CWA) and corresponding National Pollutant Discharge Elimination System (NPDES) regulations, 40 Code of Federal Regulations (CFR) § 122.26. The permits establish the minimum requirements for municipalities and State and federal agencies eligible for coverage under the NPDES small MS4 program. This appendix provides guidance and additional information related to compliance with permit requirements. The guidance is organized into six sections as follows:

Section I: *Describes management options for permit compliance*

Section II: *Provides guidance for identifying communities with Environmental Justice concerns*

Section III: *Provides guidance for developing an illicit discharge detection and elimination program*

Section IV: *Provides a list of resources for developing salt management strategies*

Section V: *Provides guidance for developing solar reflectance strategies*

Section VI: *Provides guidance for restoration program development, implementation, and database tracking*

Section I. Management Options for Permit Compliance

According to 40 CFR § 122.30, the U.S. Environmental Protection Agency (EPA) strongly encourages partnerships and a watershed-based approach as the management framework for efficiently, effectively, and consistently protecting water quality and restoring aquatic ecosystems. This regulation offers flexibility to regulated owners and operators for complying with permit requirements. Therefore, the following options may be considered by small MS4s during planning and implementation efforts. This will allow government entities and small MS4s to combine resources and collaborate with other NPDES permittees to most effectively and efficiently achieve the water quality goals intended in the CWA.

A. Options for filing a Notice of Intent (NOI)

MDE will allow multiple options for filing an NOI to receive permit coverage. An NOI may be submitted by an individual jurisdiction or agency, or jointly by one or more co-permittees.

B. Qualifying Local Programs (State or local)

An applicant may develop programs to comply with all minimum control measures independently, or rely on another responsible entity or qualifying local program to comply with permit requirements. Maryland has existing State statutes and local ordinances in place that already require implementation of specific management measures that are more stringent than the conditions in 40 CFR § 122. Therefore, the statewide regulatory requirements under the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland for erosion and sediment control and Title 4, Subtitle 2 for stormwater management are considered to be "qualifying local programs". Compliance with these laws will meet the "Construction Site Stormwater Runoff Control" and "Post Construction Stormwater Management" permit requirements. The permittee remains responsible for the implementation of these measures through compliance with Maryland's erosion and sediment control and stormwater management laws.

C. Sharing Responsibility

A permittee may rely on another entity such as a State, federal, municipal, or other partner to satisfy one or more of the permit obligations. All permit obligations of each entity must be noted in the NOI submitted to MDE according to Part II of this general permit and 40 CFR § 122.35. Alternatively, the permittee may establish partnerships to share responsibility for any or all permit requirements. However, the permittee remains responsible for all regulatory obligations. Therefore, MDE encourages the permittee to enter into a legally binding agreement such as a memorandum of understanding with the other entity to minimize uncertainty about compliance with the permit.

Section II. Guidance for Identifying Communities with Environmental Justice Concerns

Small municipalities and State and federal agencies covered under this NPDES MS4 general permit are required to use the MDE's MDEnviroScreen Tool to identify communities within their MS4 area with environmental justice (EJ) concerns. The tool is available on the MDEnviroScreen web page.

A. What is Environmental Justice?

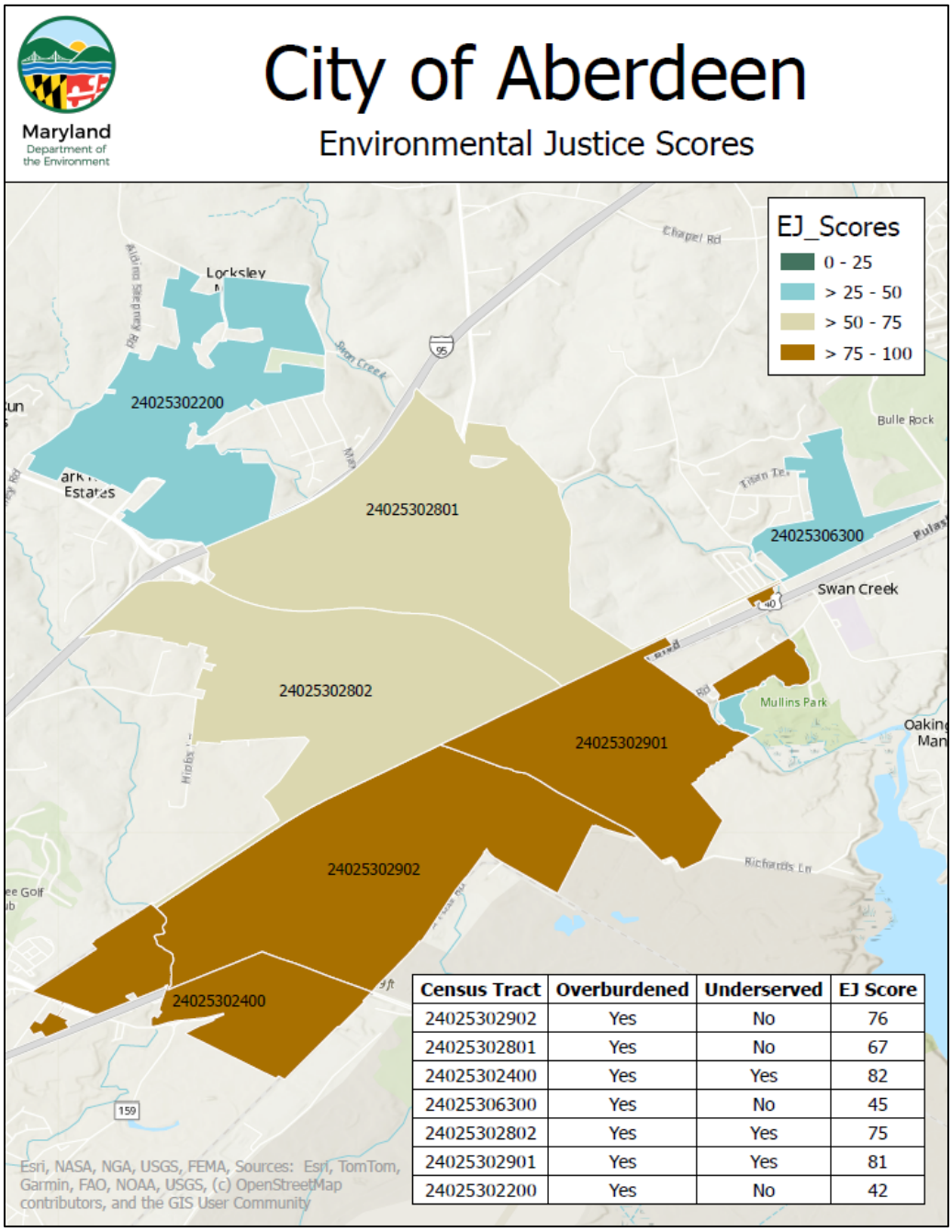
Environmental justice (EJ) is equal protection from environmental and public health hazards for all people regardless of race, income, culture, and social status (as defined in § 1-701(a) of the Environment Article, Annotated Code of Maryland). The specific environmental and public health indicators that encompass environmental justice and EJ scores are defined on MDE's website.

B. Environmental Justice for MS4 Permittees

An example of how to utilize the EJ mapping information is shown in Figure B.1, which displays the scores for the City of Aberdeen. The example shows an EJ score for each census tract located within the City's jurisdiction and identifies whether a census tract is defined as overburdened or underserved. To identify communities with EJ concerns, permittees should focus efforts on census tracts with an EJ score greater than 75% and those identified as overburdened.

In addition to the information found in the MDEnviroscreen Tool, permittees may utilize other local data to better identify the needs of communities with EJ concerns within their MS4 area. Permittees may build upon existing initiatives and form partnerships with other local programs to target implementation efforts under this permit. To demonstrate compliance with permit requirements, permittees shall look for opportunities for education and outreach and implement stormwater projects that are feasible in these communities and report findings in the MS4 Progress Report.

Figure B.1 City of Aberdeen EJ Scores



Census Tract	Overburdened	Underserved	EJ Score
24025302902	Yes	No	76
24025302801	Yes	No	67
24025302400	Yes	Yes	82
24025306300	Yes	No	45
24025302802	Yes	Yes	75
24025302901	Yes	Yes	81
24025302200	Yes	No	42

The Census Tract IDs within the permittee's jurisdictional boundary are displayed in this example. To identify communities with EJ concerns, permittees should focus efforts on census tracts with an EJ score greater than 75%, and those identified as overburdened.

Section III. Guidance for Developing an Illicit Discharge Detection and Elimination Program

Small municipalities and State and federal agencies covered under this NPDES MS4 permit are required to implement an illicit discharge detection and elimination (IDDE) program. The goal of this program is to find and eliminate pollutants entering the MS4. To find an illicit discharge, permittees shall conduct dry weather screenings of outfalls or alternative inspection points.

The following definitions shall be applied:

- Illicit Discharge: A discharge to an MS4 is illicit if it is not composed entirely of stormwater (40 CFR § 122.26(b)(2)). Illicit discharges can originate from sources such as incorrect plumbing, damaged infrastructure, inappropriate business practices, and illegal dumping. For example, sanitary sewer lines or car wash drains may be connected to the MS4 instead of the sanitary sewer system. Drinking water lines or sanitary sewer pipes may be broken and cause pollutant discharges into the MS4.

- Outfall: An outfall is defined in 40 CFR § 122.26(b)(9) as a point source "at the point where a municipal separate storm sewer discharges to waters of the United States" (see Figure B.2). These locations are typically screened as part of the IDDE inspection requirements.

- Alternative Inspection Point: In some cases, the permittee may find that an outfall is not a useful inspection point to detect an illicit discharge (e.g., outfall is submerged, significant groundwater flow is present, or the outfall serves a large drainage area). In these cases, the permittee has the discretion to pick an inspection point further up the system (e.g., a manhole or inlet, inflow to a stormwater BMP, or point source discharge in a commercial or industrial area) and document the adjustment in the IDDE inspection report.



Figure B.2 The above outfalls are examples of different types of outfalls that must be identified on MS4 maps and included in the permittee's screening program. Structural stability and erosion concerns must also be identified as part of an effective IDDE program.

A. Developing Illicit Discharge Detection and Elimination SOPs

This section provides guidance on the required steps to establish an IDDE program and standard operating procedures (SOPs) under the permit. The guidance is organized in order of permit requirements. Permittees should tailor their SOPs to their jurisdiction or State/federal property(ies), while ensuring that key information noted below is included.

The NPDES MS4 Phase II general permits for municipalities and State/federal properties contain the following requirements for illicit discharge detection and elimination:

PART IV.C.4: Develop an IDDE program and implement written standard operating procedures (SOPs) that specify the following:

a) Adopt or maintain an ordinance or other regulatory means that prohibits illicit discharges into the MS4 and establishes appropriate remedies to enforce these prohibitions.

- The EPA Model IDDE Ordinance may be referenced for this purpose.

b) Mapping: Develop, maintain, and update a map of the MS4.

- Include stormwater conveyances, outfalls, stormwater best management practices (BMPs), and waters of the U.S. receiving stormwater discharges.
- Identify the locations of private outfalls discovered in the field to allow for more effective coordination with private property owners.
- Mapping efforts may be focused in areas with the highest potential to pollute. Examples include but are not limited to: urban areas with a population greater than 50,000, commercial or industrial areas, or rapidly developing areas.
- Include a schedule for updating the map during the permit term.

State/federal agencies: If submitting a map would compromise the operational security of government properties, agencies may indicate that the map is available for MDE's review on site.

c) Identify the frequency of outfall inspections.

- Total number of outfalls in the jurisdiction or State/federal property, determined from the map of the MS4.
- Total number of outfalls required to be screened per year:
    - Municipal: screen 20% of total outfalls per year, up to 100 outfalls.
    - State/federal:
        - Small Properties (less than 100 acres): screen all outfalls each year.
        - Medium properties (100 - 2,000 acres): screen 50% of total outfalls each year.
        - Large properties (more than 2,000 acres): screen 20% of total outfalls per year, up to 100 outfalls.
- Specify the frequency of outfall screening (e.g., annually, every other year).

d) Identify priority areas for illicit discharge screening based on pollution potential.

- Identify/describe areas of concern. Examples include commercial corridors, properties used for storage of road salt or vehicles/equipment, or other locations with a history of complaints or pollution investigations.
- Counties may choose to prioritize outfall screening in urban areas with a population greater than 50,000.
- Determine criteria for utilizing alternative inspection points (e.g., the outfall originally scheduled to be screened is submerged, significant groundwater flow is present, or the outfall serves a large urban drainage area so that tracking the source would be difficult).

e) Develop an inspection checklist describing how outfalls are screened for dry weather flows.

Dry weather outfall inspections should be conducted when rainfall has not occurred recently, e.g., within the past 48 hours. The following is a list of suggested data and observations that should be included in a screening checklist:

- General Information
  - Date and time of screening; last date of rain
  - Inspector
  - Contact information for the individual/department that is responsible for responding to illicit discharge incidents or complaints
  - Outfall identification, size, and material (e.g., concrete, corrugated metal pipe)
  - Size and primary land use of drainage area (e.g., industrial, commercial, residential)
- Observations
  - Observed flow (Y/N) and flow velocity (numeric or narrative)
  - Color and clarity (e.g., clear, cloudy)
  - Turbidity (e.g., slight, opaque)
  - Floatables (e.g., suds, oil, trash)
  - Vegetation (e.g., none, excess)
  - Deposits (e.g., sediment)
  - Odor (e.g., sewage, gas)
  - Outfall condition (e.g., corrosion, cracking, spalling, erosion)
  - Chemical testing is optional when flow is observed. If chemical testing is used to identify the source of a potential illicit discharge, the threshold parameters should be included
- Incorporate inspection criteria for alternative screening locations into inspection checklists
- Results of the screening
  - Potential illicit discharge (Y/N)
  - Source (if known at the time of screening)
  - Photographs or descriptions of what types of discharges are associated with each visual/odor observation (e.g., gray discharges may be an indicator of sewage, suds may be a nearby car wash or illicit laundry wash water connection to a storm drain)

f) Describe the process for identifying the source, and eliminating spills, illegal dumping, and other suspected illicit discharges.

When a dry weather flow is observed, a permittee must initiate an investigation to discover the source. If the source is determined to be illicit, the permittee is required to take corrective measures to eliminate the discharge and initiate enforcement actions when necessary. Procedures should include the following information:

- Definition of an illicit discharge that incorporates the description in 40 CFR § 122.26(b)(9).
- How to trace the discharge source (e.g., inspecting observational points such as manholes further up the storm drain system, dye testing).
- The process for investigating potential illicit discharges. List the responsible personnel for reporting and responding, and the actions required to eliminate or correct issues.

g) Develop a policy to ensure illicit discharges are eliminated.

- Municipal: Develop enforcement and penalty procedures.
    - Procedures for contacting owners of properties that are determined to be the source of the discharge.
    - Template notifications when letters, correction notices, or violations must be provided in writing.
    - Steps for progressive enforcement (e.g., verbal warning, correction notice, violation notice, compliance assistance, fine, and options for legal action) and a general timeline for escalating enforcement to the next step.
- State/federal: Develop a policy to ensure illicit discharges are eliminated.

h) Develop education and outreach to inform employees, businesses, and the general public of the issues relating to illegal discharges and improper waste disposal.

- Education and outreach materials may be acquired from outside the permittee's program, if applicable.

i) Coordinate with adjacent MS4 operator(s).

- Contact information for the IDDE program staff who own or operate adjacent MS4s.

B. Inspection Checklist Example

MDE has developed an example IDDE Outfall Dry Weather Inspection Field Form (see Figure B.3). Permittees can adopt this form for their dry weather inspections, or may reference it while developing their own field checklist. This checklist will assist a permittee in identifying any potential illicit discharge, determining the need for a more in-depth investigation, and noting any other outfall maintenance needs (e.g., cracks, erosion, excessive vegetation).

Figure B.3 IDDE Outfall Dry Weather Inspection Field Form

IDDE OUTFALL DRY WEATHER INSPECTION FIELD FORM

Section 1: Background Data

Date:		Outfall ID:	
8-Digit Watershed ID:		Time:	
Inspector(s):		Form Completed by:	
Temperature (°F):		Rainfall (in.): Last 24-hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☐ Open Space
- ☐ Institutional
- ☐ Other:_____

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS	SUBMERGED	
☐ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ CMP ☐ HDPE ☐ Other:_____	☐ Circular ☐ Eliptical ☐ Box ☐ Other:_____	☐ Single ☐ Double ☐ Triple ☐ Other:_____	inches	In Water? Sediment?	☐ No ☐ Partially ☐ Fully ☐ No ☐ Partially ☐ Fully
☐ Open Drainage	☐ Concrete ☐ Earthen ☐ Rip-rap ☐ Other:_____	☐ Trapezoid ☐ Parabolic ☐ Other:_____		Depth: _____ Top Width: _____ Bottom Width: _____		
☐ In-Stream						

Flow Present? ☐ Yes ☐ No

Section 3: Physical Indicators for Flowing Outfalls

Are any physical indicators present in the flow? ☐ Yes ☐ No *If no, skip to Section 4*

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Other ☐ Sulfide ☐ Petroleum/gas/oil	☐ 1- Faint ☐ 2- easily detected ☐ 3- noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ ☐ Green ☐ Orange ☐ Red Other:_____	☐ 1- Faint colors ☐ 2- Clearly visible in sample ☐ 3- Clearly visible in outfall flow
Turbidity	☐	see severity index	☐ 1- Slight cloudiness ☐ 2- Cloudy ☐ 3- Opaque
Floatables (does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1- Few/slight; origin not obvious ☐ 2- Some; indications of origin ☐ 3- Some; origin clear (obvious oil sheen, suds, or floating sanitary materials)

Section 4: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Paint peeling ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____	
Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Oil Sheen ☐ Floatables ☐ Excessive Algae	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green	

Section 5: Quantitative Characterization and Data Collection (OPTIONAL)

FIELD DATA FOR FLOWING OUTFALLS

PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	
	Flow width		Ft, In.	
	Measured length		Ft, In.	
	Time of travel		secs	
Temperature			F	
pH			pH	
Ammonia			mg/L	

OPTIONAL

1. Sample for the lab? ☐ Yes ☐ No
2. If yes, collected from: ☐ Flow ☐ Pool
3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 6: Overall Outfall Characterization and Presence of Illicit Discharge

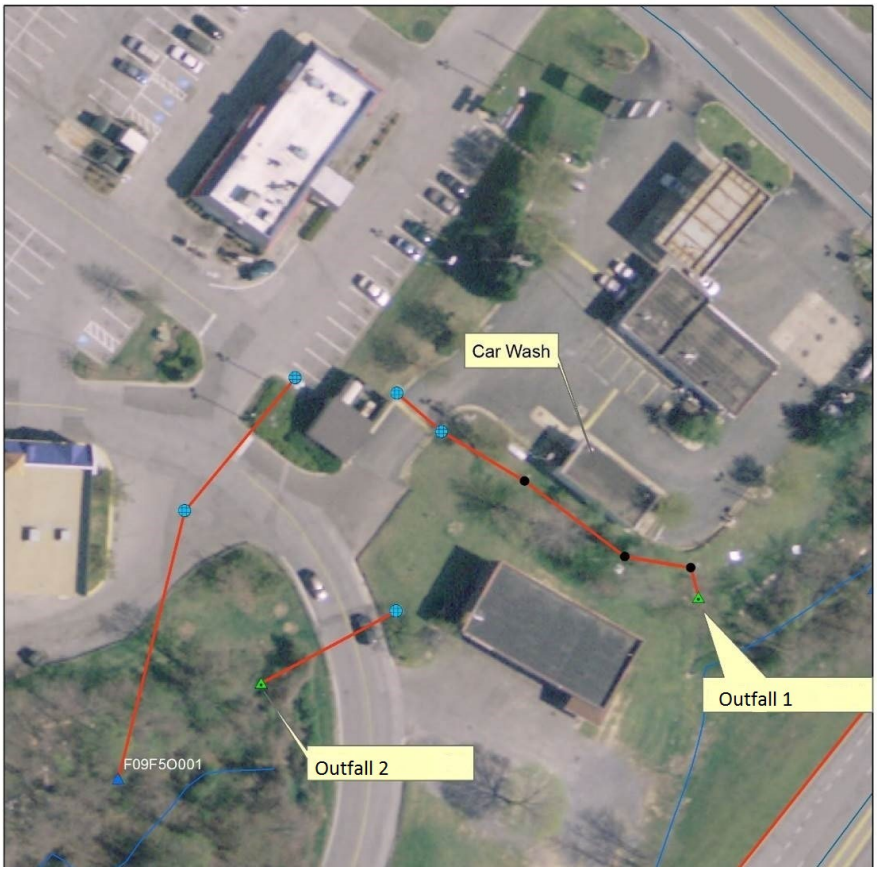
☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

** This form was modified from Center for Watershed Protection and Pitt, 2004*

C. Illicit Discharge Investigation Examples

Two examples of illicit discharge investigations are provided below to illustrate outfall identification, mapping, and discharge source tracking. These examples are taken from a Phase I NPDES MS4 Annual Report.

Example 1: Illicit Discharge Investigation for Discovered Wash Water



During a dry weather screening of Outfall 1, a flow was observed dripping into sudsy, green water that had an oily odor. A chemical test indicated a high level of detergents. In the process of tracking the source, a high level of detergents was detected at Outfall 2 as well. The source was traced to a car wash that was believed to be discharging wash water into the MS4.

Example 2: Illicit Discharge Investigation for Detergents



A dry weather flow was discovered at the outfall of a stormwater BMP. A chemical test revealed the presence of chlorine and a high pH. A chemical test at the pond inflow indicated a high level of detergents. Upslope manholes were inspected to determine the path of the discharge. Starting at the point of discharge and inspecting contributing segments of stormwater conveyance pipes (sometimes called a trunk investigation), a single point of flow that exceeded the acceptable level of detergents was isolated. The investigation revealed that the source of the discharge was located within the segment connected to inlets protected by berms on a private commercial business property yard.

Section IV. Resources for Developing Salt Management Strategies

Permittees shall utilize these materials as a starting point to develop strategies to improve program operations related to equipment, technology, winter weather procedures, and tracking.

- MDE's Enhanced Winter Maintenance Training Manual provides guidance for winter weather operations, equipment, technology, and tracking
- MDE's Smart Salt training and other resources for salt applicators, stormwater permit managers, businesses, property managers, and local residents, includes multilingual resources
- Salt Management Strategy Toolkit of the Interstate Commission on the Potomac River Basin
- Winter Salt Week, a national event held annually to raise awareness around salt pollution and reduction solutions
- Winter maintenance training series in Smart Salting offered by the Chesapeake Conservation Landscaping Council
- Guidance language for winter maintenance contracts and tips to communicate with property owners and site managers, developed by MDE
- Maryland Department of Transportation State Highway Administration's annual Salt Management Plan with information on policies, practices, technologies, techniques, and materials
- Regulatory policy and science resources provided by the United States Environmental Protection Agency
- Smart Salting certification course by the Minnesota Pollution Control Agency, with individual and group trainings, and multilingual options
- Training resources by the Wisconsin Salt Wise Partnership
- The Salt Management Strategy Toolkit provides recommendations tailored to Virginia by the Northern Virginia Regional Commission
- Winter Maintenance Training Module recordings by the Delaware T2/LTAP Center

Section V: Guidance for Development of Strategies to Increase the Solar Reflectance of Impervious Surfaces in Cold Water and Thermally Impaired Watersheds

As part of Good Housekeeping Plans (GHPs) in Part IV.F.3, permittees must evaluate opportunities for increasing the solar reflectance of impervious surfaces in cold water and thermally impaired watersheds consistent with the Maryland Stormwater Design Manual, Volumes I & II (Manual). For properties requiring a GHP that are within a cold water or thermally impaired watershed, permittees must develop a list or description of potential activities and/or best practices to increase the solar reflectance of impervious surfaces on site.

The color of impervious surfaces affects the ability of a surface to absorb the sun's energy and thus causes temperature increases. The Solar Reflectivity Index (SRI) measures how well a material reflects sunlight. Darker surfaces like asphalt pavement or shingles have low SRI values, while concrete and white EPDM roofing have higher values.

In thermally sensitive watersheds, permittees should consider using materials with SRI values greater than 29 for paving and steep-sloped (≥2:12) roofing, and materials with SRI values greater than 65 for low-sloped (≤2:12) roofing where feasible. This can be done as part of planning for facility upgrades and when maintaining paving surfaces and rooftops. Table B.1 lists the SRI for common paving and roofing materials.

Table B.1 Solar Reflectance Indices (SRI) for Typical Paving & Roofing Materials

Paving Materials:	**Condition**	**SRI**
Asphalt	New	0
	Weathered	6
Gray Cement Concrete	New	35
	Weathered	29
White Cement Concrete	New	86
	Weathered	45
Roofing Materials:		
Gray Asphalt Shingles		22
Gray EPDM (Rubber)		21
Light Gravel on a Built-Up Roof		37
White-Coated Gravel on a Built-Up Roof		79
White EPDM		84
White PVC		104

Source: LEED-NC for New Construction Reference Guide Ver. 2.2 (USGBC, October 2005)

Additional guidance, strategies, and best practices for protecting cold water resources can be found on MDE's website.

Section VI. Guidance for Impervious Area Restoration Program Development

Small MS4 owners and operators covered under this NPDES general permit are required to implement impervious area restoration of existing developed lands that have little or no stormwater management as described below. The discussion below provides a clear outline for compliance with impervious area restoration for small MS4s. Renewal permittees that have implemented restoration beyond the impervious area target from the previous permit may apply that credit to this permit. Likewise, permittees who implement restoration that exceed the targets in this permit may apply that credit to future permits.

A. Establishing Baselines: Impervious Surface Area Assessment

Renewal permittees must use the baselines established under the prior permit that have been approved by MDE. New permittees must develop an impervious surface area baseline assessment and delineate the areas that are treated with acceptable water quality BMPs to the maximum extent practicable (MEP). This analysis provides the baseline used to calculate the restoration targets under this permit. Guidance for developing an impervious surface area baseline is provided in the document, *Developing and Verifying the Impervious Area Baseline and Restoration Target*. The following provides a summary of the information needed for this assessment:

The process for determining an impervious area baseline involves the following steps:

- Determine the total impervious area within the permit area of the jurisdiction subject to impervious area restoration requirements.
- Determine the portion of impervious area that is treated by acceptable water quality BMPs.
- Determine the untreated impervious area within the jurisdiction subject to restoration requirements. This number is the untreated impervious area baseline.

The information above can be determined using the following guidance:

1. **Land Use and Impervious Surface Area Analysis:** The total impervious surface within a permittee's regulated permit area may be determined using the best available land use data. Small MS4 counties may determine baselines within the urban area with a population greater than 50,000 within that jurisdiction.

2. **Water Quality Treatment BMPs:** Municipalities and State and federal agencies may utilize the Stormwater Management by Era approach to estimate the level of treatment provided by water quality BMPs. The approach considers four distinct regulatory eras where stormwater management requirements correlate with a certain level of BMP performance. These eras are as follows:
    - **Prior to 1985.** Stormwater management regulations came into effect after this era. Any development constructed in this time period is most likely untreated (unless retrofits were constructed in later years).

- **Between 1985 and 2002.** BMPs implemented during this time addressed flood control. BMPs designed to address flood control do not provide water quality treatment. The impervious area draining to these BMPs must be included in the baseline. However, BMPs of this era may provide some water quality treatment. These include wet ponds, wetlands, and infiltration BMPs. In these cases, the original design parameters for each BMP are needed to verify the level of treatment provided. The impervious area treated is based on the volume provided in relation to 1 inch of runoff. For example, if a BMP was designed to treat a half inch of runoff, the amount of impervious area treated is 50% of the actual impervious area draining to the BMP.
- **Between 2002 and 2010.** The Maryland Stormwater Design Manual was fully implemented during this era. New development that meets the water quality requirements of the Manual is considered to have acceptable treatment. The impervious areas draining to these BMPs do not need to be counted in the impervious area required to be restored. BMPs implemented for new development after 2002 may not be used for credit toward impervious area restoration.
- **Post-2010.** Any development project that complied with State regulations in the third and fourth eras is considered to have acceptable water quality treatment.

This approach can be used for identifying BMPs that provide water quality so that the treated impervious areas may be deducted from the baseline assessment. The stormwater management by era approach can also be valuable to identify potential BMPs suitable for retrofitting.

BMPs designed in compliance with the water quality volume (WQv) treatment criteria found in the most recent version of the Manual are considered to provide water quality treatment to the MEP. Impervious areas draining to BMPs designed to treat one inch of runoff do not need to be counted in impervious area restoration requirements. Only BMPs with passing inspection records may count toward reducing the baseline.

3. **Impervious Surfaces in Rural Areas:** Many rural roads and residential subdivisions have open vegetated drainage systems, impervious area disconnections, and sheetflow to conservation areas that filter and infiltrate stormwater runoff.

   Typically, areas that are less than fifteen percent impervious may meet ESD requirements according to the criteria for nonstructural practices in the Manual. These practices include rooftop disconnect, non-rooftop disconnect, and sheetflow to conservation areas. If a permittee documents where conditions meet the Manual's criteria and adequate treatment is provided, then the impervious acres in these areas may be deducted from the baseline. Acceptable documentation can include a comprehensive GIS desktop analysis of land use, zoning conditions, and local runoff patterns. Sufficient evidence to justify assumptions in the analysis must be included for the MDE's review and approval.

4. **Total Impervious Acres Not Treated to the MEP:** Permittees should subtract total impervious area draining to water quality BMPs and nonstructural practices (determined above) from the total impervious land area owned or operated by the permittee as of the

baseline year selected. The restoration requirement will apply to ten percent of the remaining untreated impervious area at the start of the permit term.

B. Acceptable Restoration Practices

The following are acceptable restoration strategies for receiving impervious area restoration credit. Restoration efforts may include the use of ESD practices, structural stormwater BMPs, retrofitting, BMP enhancement, partnerships, or alternative restoration practices.

Guidance for implementing restoration activities under this permit is available in MDE's 2021 document *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated*, hereafter referred to as the 2021 Accounting Guidance. While the 2021 Accounting Guidance should be referenced by all stormwater permittees installing restoration during this permit term, the most relevant information from that document for small MS4 owners and operators is summarized below. MDE's 2014 version of the Accounting Guidance may still be utilized for BMPs that were planned or implemented under the prior permit.

1. **New and Existing Retrofits:** This includes new or existing stormwater BMPs installed to provide water quality treatment for existing developed lands that either had no controls or where the original control did not initially provide any water quality treatment. When retrofitted to an acceptable water quality BMP, such as converting a dry pond to a wetland, or providing additional WQ_v storage, the impervious acres draining to the BMP may be credited as restored.

2. **Alternative Stormwater BMPs:** The 2021 Accounting Guidance provides several alternative BMPs that may be used for the purpose of impervious area restoration. These alternative BMPs include street sweeping, buffer planting, reforestation, stream restoration, inlet cleaning, shoreline stabilization, and others. A list of these alternative BMPs is provided in Table B.2 below.

   The 2021 Accounting Guidance references acceptable criteria for BMP implementation and provides an impervious acre equivalent to credit alternative BMPs toward restoration requirements. When innovative practices are approved through Chesapeake Bay Program (CBP) expert panels or by MDE, the associated credits may also be used for restoration credit. To continue credits for alternative BMPs installed in previous permits, operations and maintenance must occur in accordance with the guidelines in effect when those practices were implemented.

3. **Repairing Failed BMPs for Full or Partial Restoration Credit:** Routine inspection and maintenance is essential to ensure optimal water quality treatment of any BMP. When BMP maintenance is not performed, substantial structural problems will occur over time, undermining any water quality benefit intended from the practice. Therefore, when BMPs are not properly maintained they may not be considered to provide effective treatment. If a BMP was installed to meet restoration requirements or deducted from the baselines but is not maintained properly, then that credit must be removed from counting toward the restoration requirement in MS4 Progress Reports until the BMP is restored.

Credit may be restored when a BMP is brought back into working order. Alternatively, some partial credit is available for repairing failed BMPs that provide treatment credit that was not originally deducted from the baseline.

MDE has published Technical Memo #9, Maintenance Schedules for each BMP. When inspections and repairs are performed according to these schedules and guidelines (or others approved by MDE), then the BMP is considered properly maintained.

When significant structural problems exist, the BMP is considered failed and must be restored to receive proper restoration credit. Restoring a failed BMP must include providing the full WQv, and may entail increasing storage capacity, providing forebays, increasing the flow path by installing berms or other design enhancements, re-planting with desirable wetland and native vegetation as applicable, or completing significant sediment cleanouts. This credit may apply to failed BMPs originally installed for restoration that have been removed or to failed BMPs that were never deducted from the baselines. Crediting for these scenarios includes:

- **Failed BMPs originally installed for restoration credit**: As noted above, when these BMPs fail, the credit must be removed and documented in MS4 Progress reports. When proper maintenance is provided, the credit will be restored.

- **Failed BMPs that were never deducted from the baselines**: This includes BMPs that were originally designed to provide water quality treatment but were not allowed to be accounted for in the baseline calculations because they were in failed condition. Because baseline calculations are no longer adjusted, permittees may receive twenty percent of the water quality treatment credit as restoration credit. This approach promotes proper maintenance and recognizes ongoing obligations to maintain pollution reductions. Permittees must submit a description of the maintenance upgrades, confirmation that they were not included in the original baseline, and water quality treatment calculations to MDE for approval prior to claiming this credit.

  Data entry for the BMP database for these failed and subsequently restored facilities will be done similarly to BMP conversions as follows:
  - The construction purpose (CON_PURPOSE) will use the code for a converted BMP (CONV).
  - The original BMP type (BMP_TYPE) is entered into the converted-from field (CONVERTED_FROM). This must be a type that provides acceptable water quality.
  - The pre-converted impervious acre credit field (PRE_CONV_IMP_ACR_CREDIT) records the water quality treatment credit for the original BMP.
  - The water quality treatment (WQT_IMP_ACR_CREDIT) awarded for the restored BMP is equal to twenty percent of the pre-converted impervious acre credit.

An example of BMP data entry for a failed BMP that was not accounted for in the baseline analysis can be found below. Here, the BMP was originally designed to receive ten impervious acre credits. The original baseline was not credited for the ten acres because the BMP was in failed condition. Therefore, the restored BMP is eligible to receive twenty percent of that amount, or two acres of restoration credit.

Example 3: BMP Database Data Entry Example for a Restored BMP

BMP_ID	CON_ PURPOSE	BMP_ TYPE	CONVERTED_ FROM	PRE_CONV_IMP_ ACR_CREDIT	WQT_IMP_ ACR_CREDIT
SAMPLBMP00001	CONV	PWET	PWET	10	2

Note: Not all columns that require data entry for a BMP have been included in the example.

C. Criteria for Impervious Acre Restoration Crediting

The water quality objective for impervious area restoration is based on treating 1-inch of runoff using BMPs defined in the Manual. Because of numerous constraints inherent in the urban environment, meeting the design standards specified in the Manual may not always be achievable. In these cases, retrofit opportunities that currently achieve less than 1-inch of treatment must be pursued where they make sense. Applying impervious area treatment credit for these projects will be based on the proportion of the full 1-inch of treatment.

Where stormwater retrofits provide water quality treatment for existing unmanaged urban areas, impervious area restoration credit may be applied according to the following criteria:

- An acre-for-acre impervious credit will be given when a BMP is designed to treat 1-inch of runoff.
- A proportional acreage of credit will be given when less than 1-inch of treatment is provided: (percent of the 1-inch of treatment provided) x (impervious acres).
- When a BMP is designed to treat greater than 1-inch of runoff, additional credit of 25% may be granted in accordance with the 2021 Accounting Guidance.

1. **Co-Benefit Credits:** When a BMP is designed to treat more than 1-inch of runoff, or provide greater temporary storage in the form of extended detention, or when the natural functions of a BMP are enhanced, additional impervious acre credits may be available. Below is a summary of additional credit calculations based on information available in the 2021 Accounting Guidance.

a. Credit for Additional Water Quality Treatment Volume

For BMPs providing additional water quality treatment, additional impervious acre credits are available for a water quality treatment volume (i.e., WQ_T) for a rainfall depth up to 3.0 inches. For any additional WQ_T provided for a rainfall depth treated over 1 inch up to 3.0 inches, an additional 25% impervious acre credit is available.

Equation B.1. WQ_T Credit for Rainfall Depths Greater than 1 Inch and Less than or Equal to 3 Inches

$$WQ_T\ Credit = \left[\frac{1\ inch + \ [(P_E - 1\ inch) \times 0.25]}{1\ inch}\right] \times IA$$

Where:

WQ_T = *Water quality treatment volume*
P_E = *Rainfall depth treated*
IA = *Impervious acres in the drainage area*

b. Credit for Additional Storage (Watershed Management Credit)

MDE provides an additional impervious acre credit when the rainfall depth treated for Watershed Management (WM) is greater than the minimum 1 inch ($P_E > 1$ inch) using extended detention. WM credits are available for this temporary storage volume for a rainfall depth between 1 inch and 3.0 inches. Specifically, for any additional rainfall depth treated for WM over 1 inch using 24-hour extended detention, an additional 25% impervious acre credit is available.

Equation B.2 WM Credit for Rainfall Depths Greater than 1 Inch and Less than or Equal to 3.0 Inches Managed with Extended Detention

$$WM\ Credit = \left[\frac{(P_E\ - P_{WQT}) \times 0.25}{1\ inch}\right] \times IA$$

Where:

WM = *Watershed Management*
P_E = *Rainfall depth treated*
P_{WQT} = *Rainfall depth treated for water quality*
IA = *Impervious acres in the drainage area*

c. Green Stormwater Infrastructure Credit

MDE provides additional credit when a BMP provides water quality treatment and incorporates natural processes using vegetation and soils. BMPs with these features also mimic the pollutant load reduction efficiencies of RR practices. BMPs considered RR practices by the CBP are 35% more effective at removing TN, TP, and TSS than ST practices. Therefore, these practices achieve a GSI credit equal to 1.35 × impervious acre credit achieved through water quality treatment. Table B.3 has a full list of BMPs that are eligible for green stormwater infrastructure credits.

2. Nutrient and Sediment Credit Trading

MDE supports trading as a cost-effective means for achieving pollutant load reductions. Therefore, trading with other source sectors may be an option after complying with the procedures and requirements outlined in COMAR 26.08.11. More information is available at MDE's Water Quality Trading Program Home page.

3. Redevelopment

Maryland's stormwater management regulations for redeveloped lands are intended to gain water quality treatment on existing developed lands while supporting initiatives to improve urban areas. Therefore, when water quality treatment practices are provided to address State redevelopment regulations, the existing impervious area treated may be credited toward restoration requirements. In most cases, the credit will be equivalent to 50% of the existing impervious area for the project. When additional volume above the regulatory requirements is provided, additional credit will be accepted on a proportional basis.

4. Establishing Partnerships and Master Planning

Redevelopment and future planning present an opportunity to develop master plans to provide water quality treatment beyond regulatory requirements. This can be a cost-effective solution for addressing Maryland's stormwater management regulations while meeting impervious area restoration requirements in the permit.

Small MS4 municipalities may work with private developers and offer incentives to gain additional water quality treatment for a project. MDE encourages localities to actively engage the development community through the stormwater plan review and approval process.

Small municipalities and government agencies may choose to collaborate with other watershed groups, and State, federal, or local entities to combine resources and facilitate implementation of restoration activities. Because one intent of the small MS4 general permit is to encourage partnerships to achieve the water quality goals of the CWA, MDE will remain flexible when permittees pursue this option.

Table B.2 Impervious Acre Credit for Alternative BMPs

Alternative BMP	BMP Type	Calculating Impervious Acre Credit	EIA_f
Advanced Sweeping	VSS		Per Lane Mile Swept
1 pass/12 weeks		Lane miles swept per pass multiplied by EIA = acres of credit	0.027
1 pass/8 weeks			0.059
1 pass/4 weeks			0.087
Spring 1 pass/1-2 weeks else monthly			0.106
Spring & Fall 1 pass/1-2 weeks else monthly			0.148
1 pass/2 weeks			0.156
1 pass/week			0.235
2 passes/week			0.304
Mechanical Sweeping	MSS		Per Lane Mile Swept
1 pass/4 weeks		Lane miles swept per pass multiplied by EIA = acres of credit	0.001
1 pass/week			0.004
2 passes/week			0.008
Catch Basin Cleaning (i.e. Storm Drain Cleaning)	CBC		Per Ton Removed
Organic		Tons of dry material (organic or inorganic) collected multiplied by EIA = acres of credit	0.17
Inorganic			0.25
Storm Drain Vacuuming (i.e. Storm Drain Cleaning)	SDV		Per Ton Removed
Organic		Tons of dry material (organic or inorganic) collected multiplied by EIA = acres of credit	0.17
Inorganic			0.25
Floating Treatment Wetlands (% of pond wet surface area covered by FTW)	FTW		Per Impervious Acre
FTW1 (10%)		Total impervious acres in stormwater pond drainage area multiplied by EIA = acres of credit	0.008
FTW2 (11-20%)			0.017
FTW3 (21-30%)			0.026
FTW4 (31-40%)			0.034
FTW5 (41-50%)			0.042
Septic			Per System
Septic Pumping	SEPP	Units pumped (annually) multiplied by 0.02 = acres of credit	0.02
Septic Denitrification	SEPD	Units upgraded (w/denitrification) multiplied by 0.16 = acres of credit	0.16

Alternative BMP	BMP Type	Calculating Impervious Acre Credit	EIA_f
Septic to WWTP Connection	SEPC	Units connected to a WWTP multiplied by 0.39 = acres of credit	0.23
Land Cover Conversion			Per Acre of Land Cover
Forest Planting	FPU	Total acres of converted land multiplied by EIA = acres of credit	1.1
Riparian Forest Planting	RFP		1.5
Conversion Landscaping	CLTM		0.37
Riparian Conservation Landscaping	RCL		0.5
Forest Conservation	FCO		0.46
Impervious Surface Reduction (i.e., impervious to pervious)	IMPP		0.71
Street Trees	STCI		0.4
Urban Tree Canopy Planting	UTC		0.28
Urban Soil Restoration of Compacted Pervious Surfaces (soil excavation depth in inches)	USRP		Per Acre of Soil Treatment
Level 1 (15 inches)		Total acres of restored soil multiplied by EIA = acres of credit	0.4
Level 2 (20 inches)			0.8
Urban Soil Restoration of Removed Impervious Surfaces (soil excavation depth in inches)	USRI		Per Acre of Soil Treatment
Level 1 (15 inches)		Total acres of converted land multiplied by EIA = acres of credit	0.91
Level 2 (20 inches)			1
Shoreline Management and Outfall Stabilization			Per Linear Foot
Shoreline Management (Default Rate)	SHST	Linear feet of shoreline restored multiplied by 0.04 = acres of credit	0.04
Outfall Stabilization (Planning Rate)	OUT	Linear feet of outfall stabilized multiplied by 0.02 = acres of credit	0.02
Stream Restoration	STRE		Per Linear Foot
Coastal Plain		Linear feet of stream restored (coastal or non-coastal plain) multiplied by EIA = acres of credit	0.02
Non-Coastal Plain			0.03
Elimination of Discovered Nutrient Discharges from Grey Infrastructure	DGI		Per Discharge
Elimination of Eight Approved Discharge Types		Calculated on a per-discharge basis and the calculation depends on the type of discharge eliminated	Individually Calculated

Table B.3 Eligibility for Green Stormwater Infrastructure Credits

Upland BMPs	Must Meet Required Manual Design Criteria	Must Meet Required Manual Design Criteria and Provide Enhanced Features
Chapter 5 Practices		
Green Roofs	X	
Permeable Pavements	X	
Reinforced Turf	X	
Disconnection of Rooftop Runoff	X	
Disconnection of Non-Rooftop Runoff	X	
Sheetflow to Conservation Areas	X	
Rainwater Harvesting	X	
Submerged Gravel Wetlands	X	
Landscape Infiltration	X	
Dry Wells	X	
Micro-Bioretention and Rain Gardens	X	
Grass Swales, Wet Swales, Dry Swales	X	
Chapter 3 Practices (Sections 3.1 and 3.2 of the Manual)		
Micropool Extended Detention Pond		X
Wet Pond		X
Wet Extended Detention Pond		X
Multiple Pond System		X
Pocket Pond		X
Shallow Wetland		X
Extended Detention Shallow Wetland		X
Pond/Wetland System		X
Pocket Wetland		X
Chapter 3 Practices (Sections 3.3 and 3.4 of the Manual Except Otherwise Noted[1])		
Infiltration Trench		X
Infiltration Basin		X
Surface Sand Filter		X
Organic Filter		X
Pocket Sand Filter		X
Bioretention		X

Note: [1]Infiltration trenches under pavement, underground sand filters, and perimeter sand filters are not eligible for GSI credit.

D. Stormwater Best Management Practice (BMP) Database and Codes

A spreadsheet template, titled *Stormwater BMP Database*, is provided on MDE's Phase II webpage to assist permittees in developing their database. All data previously reported in the Urban BMP Database tabs (Tables B.1.a, B.1.b, and B.1.c) are now captured in one workbook titled "Stormwater BMP Database".

New fields have been added to capture data and information for BMPs found in the 2021 Accounting Guidance. These new fields are not required to be populated for historic BMPs credited under the previous permit term. Only new BMPs under the new permit are required to have data populated in the new fields. The updated Stormwater BMP Database has specific formatting enabled, which is intended to streamline user input and capture data more accurately.

MDE expects that data development and verification will be an iterative process throughout the permit term.

1. Reporting for ESD Practices

ESD practices may be entered as a single structure or as a system of practices. When numerous ESD practices are installed to address the stormwater requirements for a project, permittees may choose to enter these data as a system of ESD practices. Data for ESD systems may be captured in the database by specifying:

- Maryland latitude and longitude coordinates for each BMP. For ESD systems, this location must represent the most downstream point or practice.
- The BMP type (BMP_TYPE). Select the most predominant BMP type in the ESD system.
- The total number of BMPs (NUM_BMPS) implemented to address stormwater requirements for the ESD system of practices.
- The total rainfall treated is captured in the PE_ADR field. This represents the total rainfall treated for the collective number of BMPs in the drainage area for the ESD system.

a. Inspections for ESD Systems

Projects that meet the ESD to MEP requirements may be inspected as a collection of practices. Inspection data for ESD systems will represent the performance of the system of practices versus each individual practice. This is consistent with Code of Maryland Regulations 26.17.02.

b. Unique BMP Identifier

A BMP_ID is a unique identifier assigned to each BMP or system of BMPs. An example of how to populate the BMP_ID field for a municipality using the required 13 characters is provided:

County or Municipal code + 2 digit year + BMP identifying code + 6 digit sequential number = 13 character BMP_ID code.

Municipality: City of Rockville	*RO* +
Year feature/record was captured: 2012	*12* +
Identifying code: BMP	*BMP* +
Record number: 1	*000001*
BMP_ID	***= RO12BMP000001***

State and federal permittees are also required to use a 13-character BMP_ID. Suggested agency codes are listed in the Excel spreadsheet template. If a permittee would like to use a different agency code than found in the template, MDE must approve the alternative agency code to ensure that it is not already in use.

Examples of how to populate the BMP_ID field for a State or federal permittee using the required 13 characters is provided:

Agency: Architect of the Capitol	*AOC* +
Year feature/record was captured: 2012	*12* +
Identifying code: BMP	*BMP* +
Record number: 1	*00001*
BMP_ID	= ***AOC12BMP00001***

Agency: Maryland Army National Guard	*MDARNG* +
Year feature/record was captured: 2012	*12* +
Identifying code: BMP	*BMP* +
Record number: 1	*01*
BMP_ID	= ***MDARNG12BMP01***

2. Data Fields and Codes

Descriptions of the data fields and associated codes for the Stormwater BMP database reporting are provided in the tables below:

- Table B.4 Permit Information
- Table B.5 BMP Data Fields and Descriptions
- Table B.6.a Suggested MS4 Municipal Permittee Codes
- Table B.6.b Suggested MS4 State Agency Permittee Codes
- Table B.6.c Suggested MS4 Federal Agency Permittee Codes
- Table B.7 BMP Database Class and Type

Table B.4 Permit Information

NAME	DESCRIPTION
PERMIT_NUM	MDE permit number.
FEDERAL_NUM	9-character federal permit number.
PERMITTEE	Permittee.
EFFECTIVE_DATE	Permit effective date (MM/DD/YYYY).
EXPIRATION_DATE	Permit expiration date (MM/DD/YYYY).
FIRST_NAME	Contact name (First).
LAST_NAME	Contact name (Last).
CONTACT_TITLE	Contact title, job title (e.g., director, manager).
AGENCY_NAME	Agency.
ADDRESS	Address.
CITY	City.
STATE	State.
ZIP	Zip Code.
PHONE	Contact phone number 10 digits, no dashes (numbers only).
HOTLINE	Hotline for reporting illicit discharge; Phone number 10 digits, no dashes (numbers only).
WEB_ADDRESS	Web address where reports are posted.
EMAIL	Contact email address.
GEN_COMMENTS	General comments.
RENEWAL_PERMITTEE	Select “Yes” if a renewal permittee (had under the 2018 permit). Select “No” if the permittee is new.
UNTREATED_IMPERVIOUS_AREA_BASELINE	Enter the MDE approved Impervious Area Baseline. New permittees may enter “pending” until the development of the baseline is complete.

Table B.5 BMP Data Fields and Descriptions

NAME	DESCRIPTION
BMP DATA	
BMP_ID	MDE primary ID (Unique table ID). IDs must be 13-characters long.
LOCAL_BMP_ID	Local BMP identifier.
LATITUDE	WGS84 Auxiliary Sphere (Decimal Degrees).
LONGITUDE	WGS84 Auxiliary Sphere (Decimal Degrees).
WATERSHED8DGT	Maryland 8-digit hydrologic unit code.
WATERSHED12DGT	USGS 12-digit hydrologic unit code.
CON_PURPOSE	Enter code for New Development (NEWD), Redevelopment (REDE), Restoration (REST), or Conversion (CONV).
PRMT_ISSUANCE_ YR_CREDIT	Indicate fiscal year of permit issuance that the BMP is installed to address; Conditional on CON_PURPOSE = REST, CONV, or REDE.
BMP_TYPE	Type of BMP. If NUM_ BMPS >1, use BMP Type with greatest treatment volume.
BMP_NAME	Name of BMP (e.g., Glendale Pond).
PROJECT_DESC	Brief description of project; Conditional on CON_PURPOSE = REST, CONV, or REDE.
PROJECT_NAME	Name of project.
CONVERTED_ FROM	If conversion of existing BMP then prior BMP Type is required; Conditional if CON_PURPOSE = CONV.
BMP_CLASS	BMP Class (A, E, or S).
NUM_BMPS	Number of BMPs present. If BMP CLASS = S, must be = 1; If BMP_CLASS = E, can be 1 or greater.
BMP_DRAIN_AREA	Drainage area (acres) to a BMP or a cluster of ESD practices. This is the numeric sum of the design drainage area to a single BMP or cluster of ESD practices.
PE_REQ	PE required; Conditional on CON_PURPOSE = NEWD.
PE_ADR	Rainfall treated for water quality (WQT). Conditional on BMP_CLASS= E or S.
IMP_ACRES	Impervious acres associated with record.
PE_REDE	PE addressed for the reconstructed impervious area; Conditional on CON_PURPOSE = REDE and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
IMP_ACRES_REDE	Reconstructed impervious acres treated; Conditional on CON_PURPOSE = REDE and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
PE_PRE_CONV	PE treated prior to conversion; Conditional on CON_PURPOSE = CONV and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
PRE_CONV_IMP_ ACR_CREDIT	Total impervious acre credit prior to conversion; Conditional on CON_PURPOSE = CONV and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
PE_TOTAL_ STORAGE	Total rainfall depth managed; Conditional on CON_PURPOSE = CONV or REST, and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
WQT_IMP_ACR_ CREDIT	Credit associated with water quality treatment; Conditional on CON_PURPOSE = REST, CONV, REDE, and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.

NAME	DESCRIPTION
WM_IMP_ACR_ CREDIT	Credit associated with the portion of the extended detention volume above WQT; Conditional on CON_PURPOSE = REST, CONV, REDE, and PE_ADR>1, and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
GSI_IMP_ACR_ CREDIT	Credit associated with the portion of GSI treatment above WQT; Conditional on CON_PURPOSE = REST, CONV, REDE and PERMIT_ISSUANCE_YR_CREDIT is current permit or later.
TOT_IMP_ACR_ CREDIT	Total impervious acre credit for restoration, conversion, or redevelopment project; Total credit includes any WQT, WM, and GSI credits; Conditional on CON_PURPOSE = REST, CONV, REDE.
QUAN_MGMT	Quantity managed. e.g., Cpv, 2-yr, 10-yr; Conditional on CON_PURPOSE = NEWD, "Under Development" may be used if data is still being gathered.
IMPL_STATUS	Select project status as either Planning (P), Under Construction (UC), or Complete (C); Conditional on CON_PURPOSE = REST, CONV, or REDE.
BMP_STATUS	Select either Active (ACT), Removed (REM), or Proposed (PROP) for BMP status.
APPR_DATE	Permit approval date for structure. Conditional on CON_PURPOSE = NEWD or REDE and BMP_STATUS = ACT.
BUILT_DATE	As-built completion date (MM/DD/YYYY); Conditional on BMP_STATUS = ACT.
IMPL_COST	Projected or actual cost as applicable. Conditional on CON_PURPOSE = REST, CONV, or REDE.
IMPL_COMP_YR	Projected or actual fiscal year of project (YYYY). Conditional on CON_PURPOSE = REST, CONV, or REDE.
GEN_COMMENTS	General comments.
BMP INSPECTIONS	
INSP_STATUS	Select BMP inspection status Pass (P) or Fail (F); A passed BMP might have minor maintenance issues that will not compromise water quality function; Conditional on BMP_STATUS = ACT.
INSP_DATE	Inspection date (MM/DD/YYYY); construction completion, first-year, and triennial inspections; Conditional on BMP_STATUS = ACT.
ALTERNATIVE BMPS	
EQU_IMP_ACR	Equivalent impervious acres treated by project; Conditional on BMP_TYPE = STRE, OUT, SHST, FTW, SEPD, DGI, SEPC, FPU, IMPF, IMPP, CLTM, RCL, RFP, STCI, UTC, USRP, or USRI.
EIA_ANNUAL_ CREDIT	Annual EIA for annual BMPs; Conditional on PRMT_ISSUANCE_YR_CREDIT is current permit or later, and BMP_TYPE = SDV, CBC, MSS, VSS, or SEPP if a cumulative credit is not claimed.
EIA_AVERAGE_ CREDIT	Average EIA for annual BMPs during the years of the permit term. This includes the years after the previous permit expired but prior to the issuance of the new permit; Conditional on BMP_TYPE = SDV, CBC, MSS, VSS, SEPP if a cumulative credit is not claimed.

NAME	DESCRIPTION
FLOATING TREATMENT WETLANDS	
FTW_TYPE	Percent of pond surface area covered by FTW; Conditional on BMP_TYPE = FTW.
FTW_IA_ DRAINAGE	Impervious acres draining to pond; Conditional on BMP_TYPE = FTW.
STREET SWEEPING, INLET CLEANING	
MILES_SWEPT	Miles swept for sweeping in lane miles; Conditional on BMP TYPE = MSS or VSS.
TIMES_SWEPT	Number of times per year this area is swept; Conditional on BMP_TYPE = MSS or VSS.
TONS_REMOVED	Tons of material removed as a part of storm drain cleaning, catch basin cleaning, inlet cleaning, or street sweeping if performed since 2018; Limit to two decimal places; Conditional on BMP_TYPE = SDV or CBC.
SDV_OR_CBC_ MATERIAL	Predominantly organic or inorganic material removed, visually estimated; Conditional on BMP TYPE = SDV or CBC.
LAND COVER CONVERSION	
NUMBER_OF_ TREES_ PLANTED	Number of trees planted for street trees or urban tree canopy; Conditional on BMP_TYPE = STCI or UTC.
LAND_COVER_ CONV_ ACRES	Acres of land converted. Conditional on BMP_TYPE = FPU, IMPF, IMPP, CLTM, RCL, or RFP.
ACRES_ CONSERVED	Acres conserved for forest conservation; Conditional on BMP_TYPE = FCO.
SOIL RESTORATION	
SOIL_REST_LEVEL	Level 1 or Level 2; Conditional on BMP_TYPE = USRP or USRI.
SOIL_REST_ACRES	Amount of acres restored; Conditional on BMP_TYPE = USRP or USRI.
STREAM RESTORATION, SHORELINE MANAGEMENT, OUTFALL STABILIZATION	
LENGTH_REST	Length of stream restoration, outfall stabilization, or shoreline management. Conditional on BMP_TYPE = STRE, OUT, SHST.
WETLAND_AUTH_ NUM	MDE Wetlands and Waterways program authorization number for a stream restoration or shoreline management project. (i.e. 23-NT-0001 for stream restoration, 23-WL-0001 or 23-GL-0001 for shoreline management). Conditional on BMP_TYPE = STRE or SHST.
TN_REDUCTION_ TOTAL	TN load reduction (lbs/year); limit to 2 decimal places. Conditional on BMP_TYPE = STRE, OUT, or SHST.
TP_REDUCTION_ TOTAL	TP load reduction (lbs/year); limit to 2 decimal places. Conditional on BMP_TYPE = STRE, OUT, or SHST
TSS_REDUCTION_ TOTAL	TSS load reduction (lbs/year); limit to 2 decimal places. Conditional on BMP_TYPE = STRE, OUT, or SHST
STREAM RESTORATION PROTOCOLS	
DESIGN_TYPE	Stream restoration design technique, i.e. NCD, LSR, RSB, SPSC, OUT, Multiple, Others; Conditional on BMP_TYPE = STRE or OUT.

NAME	DESCRIPTION
SECONDARY_ DESIGN_TYPE	Secondary stream restoration design technique, i.e. NCD, LSR, RSB, SPSC, OUT, Multiple, Others; Conditional on BMP_TYPE = STRE or OUT, Optional.
TN_REDUCTION_P1 _STRE	TN load reduction (lbs/year) for P1; limit to two decimal places; Conditional on BMP_Type = STRE, when using Protocol 1.
TSS_REDUCTION_ P1_STRE	TSS load reduction (lbs/year) for P1; limit to two decimal places; Conditional on BMP_Type = STRE, when using Protocol 1.
TN_REDUCTION_P2 _STRE	TN load reduction (lbs/year) for P2; limit to two decimal places; Conditional on BMP_Type = STRE, when using Protocol 2.
TN_REDUCTION_P3 _STRE	TN load reduction (lbs/year) for P3; limit to two decimal places; Conditional on BMP_Type = STRE, when using Protocol 3.
TP_REDUCTION_P3 _STRE	TP load reduction (lbs/year) for P3; limit to two decimal places; Conditional on BMP_Type = STRE, when using Protocol 3.
TSS_REDUCTION_ P3_STRE	TSS load reduction (lbs/year) for P3; limit to two decimal places; Conditional on BMP_Type = STRE, when using Protocol 3.
TN_REDUCTION_P5 _STRE	TN load reduction (lbs/year) for P5; limit to two decimal places; Conditional on BMP_Type = STRE or OUT, when using Protocol 5.
TP_REDUCTION_P5 _STRE	TP load reduction (lbs/year) for P5; limit to two decimal places; Conditional on BMP_Type = STRE or OUT, when using Protocol 5.
TSS_REDUCTION_ P5_STRE	TSS load reduction (lbs/year) for P5; limit to two decimal places; Conditional on BMP_Type = STRE or OUT, when using Protocol 5.
SHORELINE MANAGEMENT PROTOCOLS	
TN_REDUCTION_P1 _SHST	TN load reduction (lbs/year) for P1; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 1.
TP_REDUCTION_P1 _SHST	TP load reduction (lbs/year) for P1; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 1.
TSS_REDUCTION_ P1_SHST	TSS load reduction (lbs/year) for P1; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 1.
TN_REDUCTION_P2 _SHST	TN load reduction (lbs/year) for P2; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 2.
TP_REDUCTION_P3 _SHST	TP load reduction (lbs/year) for P3; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 3.
TSS_REDUCTION_ P3_SHST	TSS load reduction (lbs/year) for P3; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 3.
TN_REDUCTION_P4 _SHST	TN load reduction (lbs/year) for P4; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 4.
TP_REDUCTION_P4 _SHST	TP load reduction (lbs/year) for P4; limit to two decimal places; Conditional on BMP_Type = SHST, when using Protocol 4.
ACRES_REVEG	Acres of revegetation are required when using P2, P3, or P4; limit to two decimal places; Conditional on BMP_Type = SHST.

Table B.6.a Suggested MS4 Municipal Permittee Codes

Municipal Permittee	Code
Allegany County	AL
Calvert County	CA
Cecil County	CE
City of Aberdeen	AB
City of Annapolis	AN
City of Bowie	BO
City of Frederick	FC
City of Gaithersburg	GA
City of Hagerstown	HG
City of Havre De Grace	HV
City of Rockville	RO
City of Salisbury	SI
City of Takoma Park	TP
Town of Emmitsburg, Frederick County	FREM
Town of Middletown, Frederick County	FRMI
Town of Myersville, Frederick County	FRMY
Town of New Market, Frederick County	FRNM
Town of Thurmont, Frederick County	FRTH
Town of Walkersville, Frederick County	FRWA
Queen Anne's County	QA
St. Mary's County	SM
Town of Bel Air	BE
Town of Delmar	DE
Town of Easton	EA
Town of Elkton	EL
Town of Frostburg, Allegany County	ALFR
Town of Indian Head	IH
Town of La Plata	LP
Town of Charlestown, Cecil County	CECH
Town of North East, Cecil County	CENE
Town of Perryville, Cecil County	CEPE
Town of Rising Sun, Cecil County	CERS
Washington County	WA
Town of Boonsboro, Washington County	WABO
Town of Smithsburg, Washington County	WASM
Town of Williamsport, Washington County	WAWI
Wicomico County	WI
City of Fruitland, Wicomico County	WIFR

**For Towns that rely on their respective County for stormwater plan review, use the same BMP_ID provided by the County to avoid double counting. These Towns should use the codes above for any BMPs that is not reviewed by the County.*

Table B.6.b Suggested MS4 State Agency Permittee Codes

State Permittee	Permit Coverage	Code
Air National Guard (MDANG)	MDANG at Martin State Airport	MDANG
Army National Guard (MDARNG)	Multiple Properties	MDARNG
Department of Public Safety and Correctional Services (DPSCS)	Multiple Properties	DPSCS
Department of General Services (DGS)	Ellicott City Courthouse	DGS
Department of Health (MDH)	Multiple Properties	MDH
Maryland Food Center Authority	Multiple Properties	MFCA
Maryland - National Capital Park and Planning Commission	Montgomery Parks	MNCPPC
Maryland School for the Deaf	Frederick Property	MSDF
	Columbia Property	MSDC
Maryland Stadium Authority	Camden Yards Sports Complex	MSA
MDOT - Aviation Administration	Multiple Properties	MAA
MDOT - Port Administration	Maryland Port Properties	MPA
MDOT - Transit Administration	MTA Properties	MTA
MDOT - Transportation Authority	MDTA Properties	MDTA
MDOT - Motor Vehicle Administration	Multiple Properties	MVA
University - Bowie State	Bowie State University	BSU
University - College Park (UMD)	University of Maryland College Park	UMCP
University - Coppin State	Coppin State University	CSU
University - MD Baltimore County (UMBC)	UMBC	UMBC
University- Frostburg State	Frostburg State University	FSU
University - MD Global Campus	UMGC	UMGC
University - Morgan State	Morgan State University	MSU
University - Salisbury	Salisbury University	SU
University - Shady Grove	Universities at Shady Grove	USG
University - Towson	Towson University	TU
Washington Metro Area Transit Administration (WMATA)	Multiple Properties	WMATA

Table B.6.c Suggested MS4 Federal Agency Permittee Codes

Federal Permittee	Permit Coverage	Code
Ag Dept, Animal & Plant Health (APHIS)	National Plant Germplasm & Biotechnology Lab, Animal and Plant Health Inspection Service	APHIS
Ag Dept, Beltsville Agr. Research (BARC)	Beltsville Agricultural Research Center	BARC
Architect of the Capitol (AOC)	Library of Congress, Ft. Meade Campus	AOC
Army - Aberdeen Proving Ground	Aberdeen Proving Ground	ARAPG
Army - Adelphi Laboratory Center	Army - Adelphi Laboratory Center	ARAL
Army - Fort Detrick	Army - Fort Detrick	ARFD
Army - Fort Meade	Army - Fort Meade	ARFM
Army Reserve/99th Readiness Division	Army Reserve/99th Readiness Division	USAR
Dept of Veterans Affairs (VA)	Multiple Hospitals	USVA
Coast Guard Hawkins Point	Coast Guard Hawkins Point	USCG
Fed Law Enforcement Training Center (FLETC)	Fed Law Enforcement Training Center (FLETC)	FLETC
U.S. Fire Administration, FEMA	Emmitsburg campus	FEMA
General Services Administration	Multiple Properties	GSA
Joint Base Andrews	Joint Base Andrews	JBA
NASA's Goddard Space Flight Center	NASA's Goddard Space Flight Center	GSFC
National Institute of Standards and Technology (NIST)	Natl Institute of Standards and Technology	NIST
National Institutes of Health (NIH)	Bethesda Campus	NIH
National Park Service GW Pkwy	Clara Barton Parkway	NPS
National Park Service BW Parkway	Baltimore-Washington Parkway	NPS
National Park Service Suitland Parkway	Suitland Parkway	NPS
Natl Security Agency	Natl Security Agency	NSA
Naval Support Activity-Annapolis	Naval Support Activity Annapolis	USNA
Naval Support Activity-Bethesda	Naval Support Activity Bethesda	USNB
Naval Support Activity-Patuxent River	Naval Air Station - Patuxent River Complex	USNPR
Naval Support Facility-Carderock and Suitland	Carderock and Suitland	USNC
Naval Support Facility-Indian Head	Naval Support Facility Indian Head	USNIH
Secret Service Administration (SSA)	James J. Rowley Training Center	SSA
Smithsonian Support Center in Suitland, MD	Smithsonian Support Center	SMSC
United States Postal Service	Capitol Heights District and Bolger Center	USPS
Veterans Affairs	Loch Raven and Perry Point	USVA

Table B.7 BMP Database Class and Type

BMP Class	BMP Type	Description
ESD Practices (E)		
Alternative Surfaces		
E	AGRE	Green Roof - Extensive
E	AGRI	Green Roof - Intensive
E	APRP	Permeable Pavements
E	ARTF	Reinforced Turf
Nonstructural Techniques		
E	NDRR	Disconnection of Rooftop Runoff
E	NDNR	Disconnection of Non-Rooftop Runoff
E	NSCA	Sheetflow to Conservation Areas
Micro-Scale Practices		
E	MRWH	Rainwater Harvesting
E	MSGW	Submerged Gravel Wetlands
E	MILS	Landscape Infiltration
E	MIBR	Infiltration Berms
E	MIDW	Dry Wells
E	MMBR	Micro-Bioretention
E	MRNG	Rain Gardens
E	MSWG	Grass Swale
E	MSWW	Wet Swale
E	MSWB	Bio-Swale
E	MENF	Enhanced Filters
Structural BMPs (S)		
Ponds		
S	PWED	Extended Detention Structure, Wet
S	PWET	Retention Pond (Wet Pond)
S	PMPS	Multiple Pond System
S	PPKT	Pocket Pond
S	PMED	Micropool Extended Detention Pond
Wetlands		
S	WSHW	Shallow Marsh
S	WEDW	ED - Wetland
S	WPWS	Wet Pond - Wetland
S	WPKT	Pocket Wetland
Infiltration		
S	IBAS	Infiltration Basin
S	ITRN	Infiltration Trench

BMP Class	BMP Type	Description
Filtering Systems		
S	FBIO	Bioretention
S	FSND	Sand Filter
S	FUND	Underground Filter
S	FPER	Perimeter (Sand) Filter
S	FORG	Organic Filter (Peat Filter)
Open Channels		
S	ODSW	Dry Swale
S	OWSW	Wet Swale
Other Practices		
S	XDPD	Detention Structure (Dry Pond)
S	XDED	Extended Detention Structure, Dry
S	XFLD	Flood Management Area
S	XOGS	Oil Grit Separator
S	XOTH	Other
Alternative BMP (A)		
A	MSS	Mechanical Street Sweeping
A	VSS	Regenerative/Vacuum Street Sweeping (i.e., Advanced Street Sweeping)
A	IMPP	Impervious Surface Reduction (i.e. impervious to pervious)
A	IMPF	Impervious Surface to Forest (i.e., IMPP + FPU)
A	FPU	Forestation on Pervious Urban (i.e., Forest Planting)
A	CBC	Catch Basin Cleaning
A	SDV	Storm Drain Vacuuming
A	STRE	Stream Restoration
A	OUT	Outfall Stabilization
A	SHST	Shoreline Management
A	SPSD	Dry Channel Regenerative Step Pool Stormwater Conveyance System
A	SEPP	Septic Pumping
A	SEPD	Septic Denitrification
A	SEPC	Septic Connection to WWTP
A	FTW	Floating Treatment Wetlands
A	FCO	Forest Conservation
A	CLTM	Conservation Landscaping
A	RCL	Riparian Conservation Landscaping
A	RFP	Riparian Forest Planting
A	STCI	Street Trees
A	USRP	Urban Soil Restoration (Compacted Pervious Surfaces)
A	USRI	Urban Soil Restoration (Removed Impervious Surfaces)
A	UTC	Urban Tree Canopy (i.e. Pervious Turf to Tree Canopy over Turf)
A	DGI	Elimination of Discovered Nutrient Discharges from Grey Infrastructure
A	OTH	Other

Restoration Activity Schedule Reporting

The Restoration Activity Schedule (RAS) is now a worksheet within the Stormwater BMP Database. Information in the RAS tab will be automatically populated once data is recorded in the Stormwater BMP Database. A snapshot of a sample RAS is included below in Figure B.4.

Figure B.4 The Restoration Activity Schedule (RAS)

Phase II MS4 Restoration Activity Schedule

BMP_ID	LOCATION		IMPL_COST	PROJECT_DESC	CON_ PURPOSE	BMP_ TYPE	TOT_IMP_ ACR_CREDIT	IMPL_ STATUS	PRMT_ISSUANCE_ YR_CREDIT	IMPL_ COMP_YR	INSP_ STATUS
	LAT	LONG									
SAMPLBMP00001	38.9688576	-76.5172418	504	Forest Drive Stream Restoration	REST	STRE	10	C	2018	2015	P
SAMPLBMP00002	39.0584676	-76.5801189	5	Ward Family Trust Shoreline	REST	SHST	0.54	C	2027	2025	P
SAMPLBMP00003	38.9182546	-76.5403874	111	Pond Retrofit Dry to Wet	CONV	PWET	2.98	C	2027	2015	P
SAMPLBMP00005	39.1362265	-76.6679455	6	Vacuum Street Sweeping	REST	VSS	3	C	2027	2019	P
SAMPLBMP00006	39.2562095	-76.7041856	4	100 Trees Planted	REST	FPU	1.1	C	2027	2025	P
SAMPLBMP00007	39.1775493	-76.5544396	12	Floating Treatment Wetlands	REST	FTW	0.21	UC	2027	2026	
SAMPLBMP00008	39.1675384	-76.5444387	60	Chestnut Hill Cove Nabb's Creek	REST	STRE	17.5	P	2027	2027	

Appendix C

Municipal Small MS4 Notice of Intent Form

General Discharge Permit No. 26-IM-5500

General NPDES No. MDR055500

Municipal Small MS4 Notice of Intent

Maryland Department of the Environment (MDE)

National Pollutant Discharge Elimination System (NPDES)
Small Municipal Separate Storm Sewer Systems (MS4) General Permit

This Notice of Intent (NOI) is intended for municipalities submitting a notice for coverage under the General Discharge Permit (No. 26-IM-5500) for Municipal Small MS4s. Submitting this form constitutes notice that the entity below agrees to comply with all terms and conditions of the general permit. The information required in this NOI must be submitted to:

Via email: Phase2MS4.MDE@Maryland.gov

Via U.S. Mail:
Maryland Department of the Environment, Water and Science Administration
Stormwater, Dam Safety, and Flood Management Program
1800 Washington Boulevard, Baltimore, MD 21230-1708
Phone: 410-537-3543 Website: www.mde.maryland.gov

Contact Information

Permittee Name:	
Responsible Personnel:	
Mailing Address:	
Phone Number(s):	
Email Address:	

Additional Contact(s):	
Mailing Address:	
Phone Number(s):	
Email Address:	

Signature of Responsible Personnel

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name	Signature	Date

Municipal Small MS4 Notice of Intent

Due Date:		**Date of Submission:**	

Permittee Information

Renewal Permittee:	☐	
New Permittee:	☐	
Sharing responsibilities with another entity?	Yes ☐	No ☐

Required Information

1. A brief description of the jurisdiction for which coverage is being sought, including land use(s), a description of the stormwater conveyance system, and the name(s) of receiving waters to which the MS4 discharges:	
2. The approximate size of jurisdiction (square miles):	
3. Population:	
4. Provide a list of properties owned or operated by the permittee covered under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity:	
5. Describe any programs that the permittee will share responsibilities for compliance with another entity. Describe the role of all parties and include a copy of a memorandum of agreement when applicable:	
6. Anticipated expenditures to implement the terms and conditions of the permit:	

Appendix D

Municipal Small MS4 Progress Report

General Discharge Permit No. 26-IM-5500

General NPDES No. MDR055500

Maryland Department of the Environment (MDE)

National Pollutant Discharge Elimination System (NPDES)
Small Municipal Separate Storm Sewer Systems (MS4) General Permit

This Progress Report is required for those permittees covered under General Discharge Permit No. 26-IM-5500. Progress Reports must be submitted to:

Maryland Department of the Environment, Water and Science Administration
Stormwater, Dam Safety, and Flood Management Program
1800 Washington Boulevard, Baltimore, MD 21230-1708
Phone: 410-537-3543 | Website: www.mde.maryland.gov

Contact Information

Permittee Name:	
Responsible Personnel:	
Mailing Address:	
Phone Number(s):	
Email Address:	

Additional Contact(s):	
Mailing Address:	
Phone Number(s):	
Email Address:	

Signature of Responsible Personnel

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name	Signature	Date

Reporting Period (State Fiscal Year):	

Due Date:		**Date of Submission:**	

Type of Report Submitted

Impervious Area Restoration Progress Report (Annual):	
Six Minimum Control Measures (Years 2 and 4):	

Permittee Information

Renewal Permittee:	
New Permittee:	

Compliance with Reporting Requirements

Part VI of the Small MS4 General Discharge Permit (No. 26-IM-5500) specifies the reporting information that must be submitted to MDE to demonstrate compliance with permit conditions. The specific information required in this MS4 Progress Report includes:

1. Annual: Progress toward compliance with impervious area restoration requirements in accordance with Part V of the general permit. All requested information and supporting documentation must be submitted as specified in Section I of the Progress Report.
2. Years 2 and 4: Progress toward compliance with the six minimum control measures in accordance with Part IV of the general permit. All requested information and supporting documentation shall be reported as specified in Section II of the Progress Report. MDE may request more frequent reporting and/or a final report in year 5 if additional information is needed to demonstrate compliance with the permit.

Instructions for Completing Appendix D Reporting Forms

The reporting forms provided in Appendix D allow the user to electronically fill in answers to questions. Users may enter quantifiable information (e.g., number of outfalls inspected) in text boxes. When a more descriptive explanation is requested, the reporting forms will expand as the user types to allow as much information needed to fully answer the question. The permittee must indicate in the forms when attachments are included to provide sufficient information required in the MS4 Progress Report.

Section I: Impervious Area Restoration Reporting Form

New Permittees Only: Impervious Area Baseline Assessment:

Note: These questions do not apply to renewal permittees. Baselines approved under the previous permit will be used.

1. Was the impervious area baseline assessment submitted in Year 1?		Yes	No
		☐	☐
a. If No, describe the status of completing the required information. Provide a date that MDE will receive the required information by:			
2. Complete the information below based on the most recent data:			
a. Total impervious area covered under the permit:			acres
b. Total impervious acres treated by stormwater water quality best management practices (BMP):			acres
c. Total impervious acres treated by BMPs providing partial water quality treatment (multiply acres treated by percent of water quality provided):			acres
d. Total impervious acres treated by nonstructural practices (i.e., rooftop disconnections, non-rooftop disconnections, or vegetated swales):			acres
e. Total impervious acres untreated (Impervious Area Baseline):			acres
f. Ten percent of the impervious area baseline (this is the Restoration Planning Target):			acres
3. Has the baseline been adjusted since the previous reporting year?		Yes	No
		☐	☐
a. If Yes, explain how the baseline was adjusted:			
4. Verify that all impervious areas draining to BMPs with missing inspections or failed BMP records are not considered to have been treated. Describe how this information was incorporated into the overall baseline analysis:			

Impervious Area Baseline and Restoration Targets:

Note: New permittees do not report on questions with asterisks (*).

1. Complete the information below:		
a. Impervious Area Baseline. Renewal permittees shall use the number approved by MDE. New permittees must submit a baseline analysis for MDE approval:		acres
* b. Enter Twenty Percent of the Impervious Area Baseline:		acres
c. Enter Ten Percent of the Impervious Area Baseline:		acres

2. Reporting on the completion of the 20% Restoration Target:		
* a. Report the number of acres of restoration planned and completed to achieve the 20% Restoration Target:	Planned	Complete
* b. If Not Fully Completed, provide a status update for all planned and under construction projects, and describe the actions planned to complete these projects to achieve compliance promptly:		

Impervious Area Restoration Reporting:

1. Has the BMP Database been submitted as a spreadsheet in accordance with Appendix B?	Yes	No
a. Describe efforts and plans to complete all required data.		
2. Reporting on the planning and completion of the 10% Restoration Target:		
a. Report the number of acres of restoration planned and completed to achieve the 10% Restoration Target:	Planned	Complete
b. Describe progress made toward restoration planning, design, and construction efforts:		

3. Provide a summary of impervious area restoration activities planned for the next reporting cycle (attach additional information if necessary):			
4. Describe coordination efforts with other agencies regarding the implementation of impervious area restoration activities:			
5. Does the permittee implement a stormwater utility fee, i.e., a dedicated source of funding for any stormwater management program activities?		Yes	No
a. If yes, what is the dollar amount and the unit (e.g., per equivalent residential unit; per 1,000 square feet)?			
6. List the total cumulative cost of developing and implementing the impervious area restoration program during this permit term:			

Restoration Capabilities Assessment (Year 4 only. Leave this section blank in all other years):

1. Provide a summary of impervious area restoration activities planned for the next permit term. Include projected restoration credits and implementation dates for each project. (Note that implementation dates must be within five years after the expiration of the permit.):
2. Describe opportunities for installing green infrastructure or other stormwater projects in communities with environmental justice concerns, where applicable (census tracts with a MDEnviroScreen EJ score greater than 75% or census tracts identified as overburdened):

3. Describe partnerships with other jurisdictions, State or federal agencies, non-governmental organizations, or other entities, where applicable:
4. Describe infrastructure upgrades planned or implemented that relate to sanitary sewer, storm drainage, and conveyance capacity, where applicable:
5. Describe any planned or existing forest conservation or other preservation planning initiatives, where applicable:
6. Describe any other planned or implemented stormwater management initiatives (e.g., watershed management studies, flooding, infrastructure upgrades, watershed implementation plans):
7. Provide any additional details pertinent to MDE's evaluation of the Restoration Capabilities Assessment:

Adaptive Management Report (Year 4 only. Leave this section blank in all other years):

Note: Permittees must submit an Adaptive Management Report in Year 4 if restoration implementation or planning is insufficient to demonstrate permit compliance. Permittees will be notified by MDE if submitting an Adaptive Management Report is required.

1. Describe why the permittee is not on track to meet their restoration target(s). Describe any scheduling delays, funding setbacks, staff turnover, or other programmatic challenges:
2. What actions is the permittee taking to re-establish compliance with the restoration requirements in the permit?
3. What is the permittee's restoration deficit? (i.e., How many impervious acre credits remain to meet compliance?)
4. Outline a proposed revised schedule to achieve full compliance:
5. Provide any additional details pertinent to MDE's evaluation:

Section II: Minimum Control Measures (MCM) Reporting Form

MCM #1: Public Education and Outreach

Note: All answers must reflect the two-year reporting period.

1. Does the permittee maintain a process for the public to report water quality complaints via a phone number or online reporting system?	Yes	No
	☐	☐
a. Number of complaints received:		
b. Summarize the actions taken to address complaints:		
2. Does the permittee's jurisdiction have communities with environmental justice concerns (census tracts with a MDEnviroScreen EJ score greater than 75% or census tracts identified as overburdened)?	Yes	No
	☐	☐
3. Describe the target audience(s) within the jurisdiction and consider including communities with environmental justice (EJ) concerns, where applicable:		
4. Describe how stormwater educational materials were distributed to the public (e.g., newsletters, website):		
5. Provide the number, schedule/frequency, and type of educational materials distributed:		
6. Briefly describe how the education programs complement and strengthen other programs of the general permit:		

7. Describe how communities with EJ concerns within the permittee's jurisdiction were targeted for public or personnel education and outreach, if applicable. Attach specific examples of education and outreach materials to this Progress Report.			
8. Describe training to employees and/or the public to reduce pollutants to the MS4:			
a. Number of employees who received training:			
9. Are examples of educational/training materials attached to this Progress Report?		Yes	No
10. Provide a summary of the activities planned for the next reporting cycle:			
11. List the total cost of implementing this MCM over the permit term:			

MCM #2: Public Involvement and Participation

Note: All answers must reflect the two-year reporting period.

1. Describe how public involvement and participation program activities are appropriate for the target audience(s) and consider including communities with environmental justice (EJ) concerns, where applicable:	
2. Quantify and report public involvement and participation efforts shown below where applicable. Please note that the following are examples of activities to fulfill this MCM. Other activities may be reported below in Question 5 of this section:	
a. Number of participants at public events:	
b. Number of participants at trash clean-up events:	
c. Number of participants at storm drain stenciling events:	
d. Number of participants at tree planting events:	
e. Number of participants at stream clean-up events:	
f. Number of employee volunteers participating in these events:	
g. Number of event public notices published:	
3. Provide information on public involvement and participation efforts at public meetings that relate to the permittee's stormwater management program:	
a. Number of public meetings organized:	
b. Total number of attendees at all public meetings:	
c. Describe the agenda, items discussed, and collaboration efforts with interested parties for public meetings:	

4. Describe how communities with EJ concerns within the permittee's jurisdiction were targeted for public or personnel involvement and participation activities, if applicable. Briefly summarize the activities during this reporting period:		
5. Describe any additional events and activities if applicable:		
6. Briefly describe how the public and/or personnel involvement and participation activities complement and strengthen other programs of the general permit:		
7. Are the permittee's MS4 Progress Reports publicly available via a website or similar method(s)?	Yes	No
8. Provide a summary of the activities planned for the next reporting cycle:		
9. List the total cost of implementing this MCM over the permit term:		

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

Note: All answers must reflect the two-year reporting period.

1. Does the permittee maintain a map of their MS4, including stormwater conveyances, outfalls, stormwater best management practices (BMPs), and surface waters of the U.S. receiving stormwater discharges?	Yes ☐	No ☐
a. If Yes, attach the map to this Progress Report. The map may be submitted as a digital copy. If No, detail the current status of map development for any features that are still in progress to be incorporated into the map and provide an estimated date of submission:		
2. Does the permittee have a locally approved and MDE-approved ordinance that prohibits illicit discharges?	Yes ☐	No ☐
a. If No, describe the permittee's plan, including approximate time frame, to establish an ordinance to prohibit illicit discharges:		
b. What is the effective date of the ordinance?		
3. Did the permittee submit standard operating procedures (SOP) for this permit term in accordance with Part IV.C of the permit and Appendix B guidelines?	Yes ☐	No ☐
a. If No, provide a proposed date by which SOPs will be submitted to MDE. MDE may require more frequent status reports for delays in SOP development:		
b. Did MDE approve the submitted SOPs?	Yes ☐	No ☐
c. If No, describe the status of requested SOP revisions and approximate date of resubmission for MDE approval:		

4. Describe how the permittee prioritized screening in areas of high pollutant potential (e.g., urban areas, industrial locations, commercial corridors):	
5. Describe whether the permittee intends to screen alternative inspection points (in place of an outfall) and verify that this information is documented in the IDDE SOPs:	
6. Answers to the following questions must reflect this two-year reporting period:	
a. How many outfalls are identified on the map?	
b. How many outfalls were required by the permit to be screened for dry weather flows to meet the minimum numeric requirement (i.e., 20% of total outfalls annually, up to 100 annually)?	
c. How many outfalls and/or alternative inspection points were screened for dry weather flows during the reporting period, i.e., the past two years?	
d. How many dry weather flows were observed?	
e. If dry weather flows were observed, how many were determined to be illicit discharges?	
f. Describe the investigation process to track and eliminate each suspected illicit discharge and report the status of the resolution:	
7. Describe maintenance or corrective actions undertaken during this reporting period to address erosion, debris buildup, sediment accumulation, or blockage problems:	

8. Is the permittee maintaining all IDDE inspection records and are they available to MDE during field review of local programs? Submit at least three example screening checklist results with the Progress Report.	Yes	No

9. If spills, illicit discharges, or illegal dumping occurred during this reporting period, describe the corrective actions taken, including enforcement activities, and indicate the status of resolution:
10. Attach to this Progress Report specific examples of educational materials distributed to the public related to the IDDE program such as illicit discharge reporting, illegal dumping, and spill prevention:

11. Specify the number of employees trained in illicit discharge detection and elimination and spill prevention:	

a. Provide examples of training materials. If training was not completed, describe plans to develop employee training and submit examples with the next Progress Report:
12. Provide a summary of the activities planned for the next reporting cycle:

13. List the total cost of implementing this MCM over the permit term:	

MCM #4: Construction Site Stormwater Runoff Control

Note: All answers must reflect the two-year reporting period.

Erosion & Sediment Control Program Procedures, Ordinances, and Legal Authority		
1. Does the permittee have an MDE-approved ordinance?	Yes ☐	No ☐
a. If No, describe the permittee's plan, including approximate time frame, to establish an erosion and sediment control ordinance:		
b. Has the permittee made modifications since the ordinance was approved?	Yes ☐	No ☐
c. If Yes, describe the modifications and attach the draft ordinance for review and approval:		
d. What is the effective date of the ordinance or other regulatory means to fulfill this permit requirement?		
2. Does the permittee rely on the County, local Soil Conservation District, or MDE to perform any or all requirements for an acceptable erosion and sediment control program?	Yes ☐	No ☐
a. If Yes, check all that apply:		
Plan Approval		☐
Construction Inspections		☐
Enforcement of Erosion and Sediment Controls		☐
3. Does the permittee have a process to ensure that proposed developments obtain all required permits prior to a grading or building permit being issued?	Yes ☐	No ☐
a. If Yes, explain how the permittee ensures all permits are in place:		

Erosion & Sediment Control Program Implementation Information		
1. Does the permittee have a process for receiving, investigating, and resolving complaints related to erosion and sediment control for construction activities?	Yes	No
a. If Yes, describe the process. If No, describe the steps the permittee is taking to establish a process:		
2. Does the permittee maintain a record of all complaints and actions taken to resolve them? This information must be maintained and made available for MDE's review upon request.	Yes	No
3. Provide a list of all construction projects and disturbed areas within the jurisdiction during this reporting period. A separate attachment may be included if needed:		
4. Does the permittee submit grading reports to MDE? Please note, this only applies if the permittee has an MDE-approved ordinance.	Yes	No
5. Describe how the permittee communicates and collaborates with the enforcement authority (if sediment controls are enforced by a separate agency) to correct sediment control violations within the permit area, and any coordination with other entities as needed to implement this MCM:		
6. Describe any mechanisms the permittee has in place to prevent the discharge of pollutants into the MS4; this may include, for example, suspending or denying a building or grading permit, calling a bond, or assessing a fine:		

7. Describe training provided to employees on proper procedures and actions to address potential discharge of pollutants to the MS4 as a result of any construction activity:	
a. Number of staff trained in MDE's Responsible Personnel Certification:	
8. Describe the coordination efforts with other entities regarding the implementation of this MCM:	
9. List the total cost of implementing this MCM over the permit term:	

MCM #5: Post Construction Stormwater Management

Note: All answers must reflect the two-year reporting period.

Stormwater Management Program Procedures, Ordinances, and Legal Authority		
1. Does the permittee have an MDE-approved stormwater management ordinance?	Yes	No
a. Has the permittee made modifications since the ordinance was approved by MDE?	Yes	No
b. If Yes, describe the modifications and attach the draft ordinance for review and approval:		
c. What is the effective date of the ordinance?		
2. Does the permittee have a memorandum of understanding (MOU) or similar agreement with the County to perform any or all requirements for an acceptable stormwater program, if applicable?	Yes	No
a. If Yes, check all that apply:		
Plan Review and Approval		
As-Built Plan Review		
First Year Post-Construction Inspections		
Post-Construction Triennial Inspections		
Enforcement		
BMP Tracking and Reporting		
b. If Yes, describe how the permittee coordinates with the County to ensure stormwater BMPs are functioning according to approved standards:		

Stormwater Management Program Implementation Information			
1. Total number of BMPs jurisdiction-wide:			
2. Are inspections performed at least once every three years for all BMPs as required by State regulation?		Yes ☐	No ☐
a. If No, describe how the permittee will catch up on past inspections and remain on track to perform BMP inspections once every three years:			
3. Total number of violation notices issued in this reporting period:			
a. Describe efforts to bring failed BMPs into compliance and the status of enforcement activities:			
4. Number of publicly owned BMPs:			
5. Does the permittee have BMP inspection and maintenance procedures for publicly owned BMPs? If Yes, please attach to this Progress Report for MDE review and concurrence.		Yes ☐	No ☐
a. If No, describe the permittee's plan, including approximate time frame, to develop inspection and maintenance procedures:			
6. Are BMP inspection and maintenance records retained and available to MDE during field review of local programs?		Yes ☐	No ☐
a. If Yes, attach sample inspection checklists to this Progress Report. If No, describe the plans to begin maintaining this information:			

7. Provide a summary of routine maintenance activities for all publicly owned BMPs. Include how often public BMPs are maintained, and specify whether maintenance activities are more frequent for certain BMP types:	
8. Number of staff trained in proper BMP design, performance, inspection, and routine maintenance:	
9. Provide a summary of activities planned for the next reporting cycle, for example: maintenance, repair, staff training, or other program initiatives pertaining to this MCM:	
10. List the total cost of implementing this MCM over the permit term:	

MCM #6: Pollution Prevention and Good Housekeeping

Note: All answers must reflect the two-year reporting period.

1. Describe staff and contractor training related to general pollution prevention and good housekeeping (topics, dates, and estimated number of staff and contractors attended). Submit examples of training materials with this Progress Report:
2. Describe the progress made in developing salt management strategies to reduce the use of winter salt on roads, sidewalks, and parking lots without compromising safety (Answers for 2.a-2.e are due with MCM reporting beginning in Year 4):
a. Summarize personnel training programs (number of attendees, topics covered, dates) and attach example materials:
b. Summarize public education programs and attach example materials:
c. Report on status and plans to upgrade equipment and technology:
d. Report on procedures developed for operations that address winter salt storage, handling, application, cleanup, spill prevention, stockpiling and disposal of snow, and equipment cleaning and maintenance:

e. Report on tracking efforts during each winter season for:
   i. Application of salt, brine, or other deicing material;
   ii. Total precipitation from winter-related events; and
   iii. Number of events when salt, brine, or other deicing material was applied.

3. Does the permittee ensure all applicable staff and contractors have received training in best practices for winter weather management with the goal of reducing the application of winter salt and minimizing salt discharges into storm drain systems and receiving waters? (Answers for 3 and 3.a are due with MCM reporting beginning in Year 4):	Yes	No

a. If Yes, describe the format(s) of trainings, the topics covered, dates, and estimated number of staff and contractors attended. Attach to this Progress Report specific examples of training materials. If No, describe plans to provide this training:

4. Quantify property management efforts as shown below, where applicable (attach additional sheets if necessary). Answers to the following questions must reflect this two-year reporting period:

a. Number of inlets cleaned:	
b. Amount of debris collected from inlet cleaning (indicate units):	
c. Number of miles swept (Instructions to calculate this are in the 2014 or 2021 Accounting Guidance and BMP Database, as applicable to when sweeping efforts began):	
d. Number of maintenance yards/properties swept and estimated frequency of sweeping:	
e. Amount of debris collected from sweeping (indicate units):	

f. If roads and streets are swept, describe the strategy the permittee has implemented to maximize efficiency of collecting debris and target high priority areas:

5. Report the current status of developing good housekeeping plan(s) (GHPs) for all applicable properties and making them available for MDE during field review of the local program:

a. Has the GHP been updated with procedures for maintaining stormwater conveyance systems? (Note: All GHPs for new and renewal permittees must include these procedures):	Yes	No

b. Report on the results of evaluating opportunities for increasing the solar reflectance of impervious surfaces in cold water and thermally impaired watersheds (attach additional information if necessary):

6. If the permittee or contractor applied pesticides during the reporting year, describe best practices used for stormwater pollution prevention (e.g., integrated pest management, alternative materials/techniques, best practices for handling and storage):

7. If the permittee or contractor applied fertilizer during the reporting year, describe best practices used for stormwater pollution prevention (e.g., application methods, proper chemical storage, species selection to minimize chemical use, training):

8. Describe other good housekeeping practices currently implemented but not listed above:	
9. If applicable, provide any status updates or changes for permittee-owned or operated properties regarding coverage under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity (20-SW or most recent):	
10. List the total cost of implementing this MCM over the permit term:	