

MARYLAND DEPARTMENT OF THE ENVIRONMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT

PART I. IDENTIFICATION

A. **Permit Number:** 99-DP-3313 MD0068276

B. **Permit Area:**

This permit covers stormwater discharges from the Maryland State Highway Administration's (SHA) municipal separate storm sewer system in Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's counties. Other discharges from SHA owned storm drain systems may be added to this permit at the discretion of the Maryland Department of the Environment (MDE).

C. **Effective Date:** October 21, 2005

D. **Expiration Date:** October 21, 2010

PART II. DEFINITIONS

Terms used in this permit are defined in relevant chapters of the Code of Federal Regulations (CFR) or the Code of Maryland Regulations (COMAR). Terms not defined in CFR or COMAR shall have the meanings attributed by common use unless the context in which they are used clearly requires a different meaning.

PART III. STANDARD PERMIT CONDITIONS

A. **Administration of Permit**

The SHA shall designate a National Pollutant Discharge Elimination System (NPDES) coordinator to act as a liaison with MDE and provide the coordinator's name, title, address, phone number, and email address. Additionally the SHA shall submit to MDE an organizational chart detailing personnel and groups responsible for major NPDES program tasks. MDE shall be notified promptly and in subsequent annual reports of any changes in personnel or organization of program tasks.

B. **Legal Authority**

The SHA shall maintain adequate legal authority, in accordance with NPDES regulations, 40 CFR 122.26(d)(2)(i), throughout the term of this permit. In the event that any

provisions of its legal authority are found to be invalid, the SHA shall make the necessary changes to maintain adequate legal authority.

C. Source Identification

Sources of pollutants in stormwater runoff shall be identified and linked to specific water quality impacts on a highway district basis. Data collected as a result of source identification shall be shared with surrounding NPDES counties and used for watershed restoration planning. The SHA has completed geographic information system (GIS) recording of its storm drain system in Howard, Montgomery, Prince George's, Anne Arundel, and Baltimore Counties. The SHA shall complete the identification of its storm drain system for Harford, Frederick, Charles, and Carroll Counties by the end of this permit term. As part of this task, the SHA shall:

1. Describe SHA's Storm Drain System: Data collected shall cover all aspects of SHA property and operations that may affect stormwater runoff as specified in SHA's *Geographic Information System Standard Procedures Manual* [e.g., inlets, outfalls, best management practices (BMPs)]. At a minimum, SHA shall:
 - a. Complete source identification requirements by October 21, 2009;
 - b. Address source identification data compatibility issues with each jurisdiction where data are collected. Data shall be organized and stored in formats compatible for use by all governmental entities involved;
 - c. Continually update its source identification data for new projects and from data gathered during routine inspection and repair of its municipal separate storm sewer system; and
 - d. Submit an example of source identification for each jurisdiction where source identification is being compiled.
2. Submit BMP Data: In support of Maryland's urban BMP tracking efforts, the SHA shall submit stormwater management facility data annually as detailed in Part IV of this permit; and
3. Create an Impervious Surface Account: Annually, the SHA shall provide a detailed account of its impervious surfaces by highway district including acres of impervious surfaces owned by SHA and those acres controlled by stormwater management. The Impervious Surface Account shall be used to assess current stormwater management status and identify potential areas for implementing restoration activities.

D. Discharge Characterization

The SHA and ten other municipalities in Maryland have been conducting discharge characterization monitoring since the early 1990s. From this expansive monitoring, a Statewide database has been developed that includes hundreds of storms across numerous land uses. Summaries of this dataset and other research performed nationally effectively

characterize stormwater runoff in Maryland for NPDES municipal stormwater purposes. These data shall be used by SHA for guidance to improve stormwater management programs and develop watershed restoration projects. Monitoring required under this permit is now designed to assess the effectiveness of stormwater management programs and watershed restoration projects developed by SHA. Details on this monitoring can be found in PART III. H.

E. Management Program

The SHA shall continue to implement a management program for controlling stormwater runoff to the maximum extent practicable. This management program shall include provisions for environmental design, erosion and sediment control, stormwater management, industrial facility maintenance, illicit connection detection and elimination, and personnel and citizen education. An outline of the program components and minimum requirements for each are provided below.

1. Environmental Design Practices

The SHA shall ensure that all necessary steps are taken when planning, designing, and constructing highway projects in order to avoid or minimize any adverse effects to the environment and adjacent communities. Additionally, the SHA shall fully engage the public and accept comments throughout the highway planning, design, and construction processes so that transportation needs can be met and reasonable provisions for safeguarding or improving the environment are implemented.

2. Erosion and Sediment Control

The SHA shall continue to implement an effective erosion and sediment control program in accordance with the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland. At a minimum, the SHA shall:

- a. Use MDE's 1994 Standards and Specifications for Soil Erosion and Sediment Control, or any subsequent revisions, evaluate new products for erosion and sediment control, and assist MDE in developing new standards; and
- b. Perform responsible personnel ("green card") certification classes to educate highway construction contractors regarding erosion and sediment control requirements. Program activity shall be recorded on MDE's "green card" database and submitted as required in PART IV of this permit.

3. Stormwater Management

The SHA shall continue to implement an effective stormwater management program in accordance with the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland. At a minimum, the SHA shall:

- a. Implement the stormwater management design policies, principles, methods, and practices found in the *2000 Maryland Stormwater Design Manual* and COMAR;
- b. Implement a BMP inspection and maintenance program to inspect all stormwater management facilities at least once every three years and perform all routine maintenance (e.g., mowing, trash removal, tarring risers, etc.) within one year of the inspection; and
- c. Document BMPs in need of significant maintenance work and prioritize these facilities for repair. The SHA shall provide in its annual reports detailed schedules for performing all significant BMP repair work.

4. Highway Maintenance

The SHA shall ensure that maintenance activities for its rights-of-way and mechanic shops are managed effectively for minimizing stormwater pollutants. A comprehensive manual developed by SHA, “Environmental Guidelines for Maintenance Activities (November 2003)” shall be followed as routine operating procedures. As part of this program, the following items shall be emphasized:

- a. Clean inlets and sweep streets;
- b. Reduce the use of pesticides, herbicides, and fertilizers through the use of integrated pest management (IPM);
- c. Manage winter weather deicing operations through continual improvement of materials and effective decision making;
- d. Ensure that all SHA facilities identified by the Clean Water Act (CWA) as being industrial activities have NPDES industrial general permit coverage; and
- e. Develop a “Statewide Shop Improvement Plan” for SHA’s vehicle maintenance facilities to address pollution prevention and treatment requirements.

5. Illicit Discharge Detection and Elimination

The SHA shall continue implementing procedures for the detection and control of illicit connections, spills, and dumping to its storm drain system. As part of this program, the SHA shall:

- a. Conduct visual inspections of stormwater outfalls as part of its source identification and BMP inspection protocols;
- b. Document each outfall’s structural, environmental, and functional attributes;

- c. Investigate outfalls suspected of having illicit connections by using storm drain maps, chemical screening, dye testing, or other viable means;
- d. Use appropriate enforcement procedures for eliminating illicit connections or refer violators to MDE for enforcement and permitting;
- e. Coordinate with surrounding jurisdictions when illicit connections originate from beyond SHA's rights-of-way; and
- f. Annually report illicit discharge detection and elimination activities as specified in PART IV of this permit. Annual reports shall include any requests and accompanying justifications for proposed modifications to the detection and elimination program.

6. Environmental Stewardship

The SHA shall develop an Environmental Stewardship Plan for educating citizens and employees regarding stormwater management. At a minimum, this plan shall promote:

a. Environmental Stewardship by Motorists

- i. Provide stream, river, lake, and estuary name signs and environmental stewardship messages where appropriate and safe;
- ii. Create opportunities for volunteer roadside litter control and native tree plantings; and
- iii. Promote combined vehicle trips, ozone alerts, fueling after dark, mass transit, and other pollution reduction actions for motorist participation.

b. Environmental Stewardship by Employees

- i. Provide classes regarding stormwater management and erosion and sediment control;
- ii. Participate in field trips that demonstrate links between highway runoff and stream, river, and Chesapeake Bay health;
- iii. Provide an environmental awareness training module for all areas of SHA;
- iv. Provide pollution prevention training for vehicle maintenance shop personnel;
- v. Ensure IPM instruction and certification by the Maryland Department of Agriculture for personnel responsible for roadside vegetation maintenance; and
- vi. Promote pollution prevention by SHA employees by encouraging combined vehicle trips, carpooling, mass transit, and compressed work weeks.

F. Watershed Assessment

The SHA shall continue to assess its highway drainage areas for stormwater management retrofit opportunities and coordinate these activities with local NPDES watershed restoration plans in an effort to maximize water quality benefits. As part of this assessment, the SHA shall:

1. Continue providing available geographic information system (GIS) highway data to permitted NPDES municipalities and MDE;
2. By the fourth annual report, complete SHA's Impervious Surface Account as described in Part III.C. (Source Identification);
3. Select for retrofitting impervious areas with poor or no runoff control infrastructure. These projects shall be implemented where water quality improvements can be achieved; and
4. Work with Maryland's NPDES municipalities to maximize water quality improvements in areas of local concern.

G. Watershed Restoration

The SHA shall continue to construct stormwater management retrofits for controlling pollutants associated with highway runoff and aiding in local watershed restoration activities. As part of this program, the SHA shall:

1. Construct or fund 25 significant stormwater management retrofit projects during the course of this permit for impervious areas with poor or no runoff control infrastructure. These projects shall be implemented where water quality improvements can be achieved and shall not include typical stormwater management maintenance. Innovative alternatives to conventional stormwater management methods will be considered by MDE. Examples may include wetlands creation, stream buffer plantings, reforestation, or any other practices providing significant water quality benefits. Alternative practices shall be submitted to MDE for approval prior to implementation;
2. Contribute to local watershed restoration activities by constructing or funding stormwater management retrofits in watersheds targeted by local NPDES municipalities when feasible; and
3. Submit annual reports containing pertinent information on its watershed restoration activities such as stormwater management retrofit proposals, costs, schedules, implementation status and impervious acres proposed for management.

H. Assessment of Controls

Assessment of controls is critical for determining the effectiveness of the NPDES stormwater management program and progress toward improving water quality. Therefore, the SHA shall perform chemical, biological, and physical monitoring in order to determine the effectiveness of the watershed restoration efforts required under this permit. Site selection and timing will be crucial so that all aspects of a watershed restoration project can be monitored from beginning to end.

1. Site Selection: By October 21, 2006, the SHA shall select and submit for MDE's approval a watershed restoration project for monitoring. Ample time shall be

provided so that pre-restoration, or characterization monitoring can take place. Priority shall be given to new practices where little monitoring data exist or for larger comprehensive watershed restoration projects where the cumulative effect of numerous management strategies can be assessed.

2. Monitoring Requirements: Once a watershed restoration project has been selected for monitoring, the SHA shall begin monitoring an outfall and associated in-stream monitoring station, or other monitoring locations based on an approved study design. The minimum criteria for chemical, biological, and physical monitoring are as follows:

a. Chemical Monitoring:

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

Biochemical Oxygen Demand (BOD ₅)	Total Lead
Total Kjeldahl Nitrogen (TKN)	Total Copper
Nitrate plus Nitrite	Total Zinc
Total Suspended Solids	Total Phosphorus
Total Petroleum Hydrocarbons (TPH)	Oil and Grease*
Fecal Coliform or E. coli	(*Optional).

- iv. Continuous flow measurements shall be recorded at the in-stream monitoring station or other practical locations based on an approved study design. Data collected shall be used to estimate annual and seasonal pollutant loads and for the calibration of watershed assessment models.

b. Biological Monitoring:

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

c. Physical Monitoring:

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

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

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

I. Program Funding

1. Annually, a fiscal analysis of the capital, operation, and maintenance expenditures necessary to comply with all conditions of this permit shall be submitted as required in PART IV below; and
2. Adequate program funding to comply with all conditions of this permit shall be maintained.

J. Total Maximum Daily Loads

Stormwater BMPs and programs implemented as a result of this permit must be consistent with available waste load allocations (WLA) [see 40 CFR 122.44(d)(1)(vii)(B)] developed under a Total Maximum Daily Load (TMDL). MDE has determined that owners of storm drain systems that implement the requirements of this permit will be controlling stormwater pollution to the maximum extent practicable. Therefore, satisfying the conditions of this permit will meet WLAs specified in TMDLs developed for impaired water bodies. If assessment of the stormwater management program indicates TMDL WLAs are not being met, additional or alternative stormwater controls must be implemented to achieve WLAs.

PART IV. PROGRAM REVIEW AND ANNUAL PROGRESS REPORTING

A. Annual Reporting

1. Annual progress reports will facilitate the long-term assessment of the SHA's NPDES stormwater program. The SHA shall submit annual reports on or before the anniversary date of this permit that include:
 - a. The status of implementing the components of the stormwater management program that are established as permit conditions;
 - b. A narrative summary describing the results and analyses of data, including monitoring data that is accumulated throughout the reporting year;
 - c. Annual expenditures and budget for the year following each annual report;
 - d. A summary describing the number and nature of enforcement actions, inspections, and public education programs; and
 - e. The identification of water quality improvements or degradation.
2. To further evaluate the effectiveness of specific program elements, the following information shall be submitted on databases (in a format) consistent with Attachment A. Annually, except where noted, the following shall be submitted:
 - a. Storm drain system mapping (PART III. C.1.);
 - b. Urban BMP locations (PART III. C.2.);
 - c. Impervious surfaces (PART III. C.3.);
 - d. Watershed restoration project locations (PART III. G.1.);
 - e. Chemical monitoring (PART III. H.);
 - f. Illicit Discharge Detection and Elimination activities (PART III. E.5.);
 - g. Responsible personnel certification information (PART III. E.2.);
 - h. Fiscal analyses - cost for NPDES related implementation (PART III. I.).

B. Program Review

In order to assess the effectiveness of the SHA's NPDES program for eliminating non-stormwater discharges and reducing the discharge of pollutants to the maximum extent practicable, MDE will review program implementation, annual reports, and periodic data

submittal on an annual basis. Procedures for the review of local erosion and sediment control and stormwater management programs exist in Maryland's Sediment Control and Stormwater Management Laws. Additional periodic evaluations will be conducted to determine compliance with permit conditions.

C. Reapplication for NPDES Stormwater Discharge Permit

Continuation or reissuance of this permit beyond October 21, 2010 will require the SHA to reapply for NPDES stormwater discharge permit coverage in its fourth year annual report. As part of this application process, SHA shall submit to MDE an executive summary of its NPDES stormwater management program that specifically describes how water quality goals set by the SHA are being achieved. This application shall be used to gauge the effectiveness of the SHA's NPDES stormwater program and will provide guidance for developing future permit conditions. At a minimum, the application summary shall include:

1. SHA's NPDES stormwater program goals;
2. Program summaries for the permit term regarding:
 - a. Illicit connection detection and elimination results;
 - b. Watershed restoration status including SHA totals for impervious acres, impervious acres controlled by stormwater management, and the current status of watershed restoration projects and acres managed;
 - c. Pollutant load reductions as a result of this permit; and
 - d. Other relevant data and information for describing SHA programs;
3. Program operation and capital improvement costs for the permit term; and
4. Descriptions of any proposed permit condition changes based on analyses of the successes and failures of the SHA's efforts to comply with the conditions of this permit.

PART V. SPECIAL PROGRAMMATIC CONDITIONS

Since the signing of the Chesapeake Bay Agreement in 1983, Maryland has been working toward reducing the discharge of nutrients and sediments to Chesapeake Bay. SHA's highway network traverses all ten of the Bay's major tributaries in Maryland. This NPDES permit encourages the SHA to coordinate with localities specified in Part I.B. of this permit and assist with the implementation of the Tributary Strategies designed to meet the nutrient and sediment reduction goals.

PART VI. ENFORCEMENT AND PENALTIES

A. Discharge Prohibitions and Receiving Water Limitations

The SHA shall effectively prohibit non-stormwater discharges through its municipal separate storm sewer system. NPDES permitted non-stormwater discharges are exempt from this prohibition. Discharges from the following will not be considered a source of pollutants when properly managed: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated ground water infiltration to separate storm sewers; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; air conditioning condensation; irrigation waters; springs; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash water; and fire fighting activities. The discharge of stormwater containing pollutants, which have not been reduced to the maximum extent practicable, is prohibited.

The SHA shall not cause the contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into any waters of the State, that will render the waters harmful to:

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

B. Duty to Mitigate

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

C. Duty to Comply

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

The SHA shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the

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

D. Sanctions

1. Penalties Under the CWA - Civil and Criminal

The CWA provides that any person who violates any permit condition is subject to a civil penalty not to exceed \$27,500 per day for each violation. Any person who negligently violates any permit condition is subject to criminal penalties of \$2,750 to \$27,500 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.

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

Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve the SHA from civil or criminal responsibilities and/or penalties for noncompliance with Title 4, Title 7, and Title 9 of the Environment Article, Annotated Code of Maryland, or any federal, local, or other State law or regulation. The Environment Article, §9-342, Annotated Code of Maryland, provides that any person who violates a permit condition is subject to a civil penalty up to \$1,000 for each violation, but not exceeding \$50,000 total. The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who willfully or negligently violates a permit condition is subject to a criminal penalty not exceeding \$25,000 or imprisonment not exceeding 1 year, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who knowingly makes any false statement, representation, or certification in any records or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.

E. Permit Revocation and Modification

1. Permit Actions

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

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

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary reduction or elimination of the authorized discharge; or
- d. A determination that the permitted discharge poses a threat to human health or welfare or to the environment and can only be regulated to acceptable levels by permit modification or termination.

2. Duty to Provide Information

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

F. Property Rights

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

G. Severability

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

H. Signature of Authorized Administrator and Jurisdiction

All applications, reports, or information submitted to MDE shall be signed as required by COMAR 26.08.04.01-1. As in the case of municipal or other public facilities, signatories shall be either a principal executive officer, ranking elected official, or other duly authorized employee.

Robert M. Summers, Director
Water Management Administration

Date