

National Pollutant Discharge Elimination System  
Municipal Separate Storm Sewer System  
Permit No. 11-DP-3313 MD0068276  
Permit Term October 9, 2015 to October 8, 2020

# Fifth Annual Report October 9, 2020

Submitted to:

Sediment, Stormwater, and Dam Safety Program  
Water and Science Administration  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, MD 21230

Submitted by:

Maryland Department of Transportation  
State Highway Administration  
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October 9, 2020

Mr. Stewart Comstock, Chief  
Sediment, Stormwater & Dam Safety Program  
Water and Science Administration  
Maryland Department of the Environment  
1800 Washington Boulevard, Suite 440  
Baltimore MD 21230

Dear Mr. Comstock:

The Maryland Department of Transportation State Highway Administration (MDOT SHA) Office of Environmental Design (OED) is pleased to submit the enclosed fifth annual report addressing conditions under the MDOT SHA National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (NPDES MS4) discharge permit (#11-DP-33133 MD 0068276) effective October 9, 2015 through October 8, 2020. The report covers compliance efforts for fiscal year 2020 from July 1, 2019 to June 30, 2020. Point-by-point responses to the March 11 MDE comments on the MDOT SHA 2019 MS4 annual report are also enclosed.

If you have any questions or need additional information regarding this delivery, please contact Ms. Karen Coffman at 410-545-8407 and [kcoffman@mdot.maryland.gov](mailto:kcoffman@mdot.maryland.gov) or me at 410-545-8640 and [sram@mdot.maryland.gov](mailto:sram@mdot.maryland.gov). Ms. Coffman and I will be happy to assist you.

Sincerely,



Sonal Ram, P.E.  
Director  
Office of Environmental Design

Enclosures

cc: Mr. Brian Cooper, SSDSP, WSA, MDE  
Ms. Dorothy Morrison, Director, Office of Environment, MDOT  
Ms. Karen Coffman, Chief, Water Programs Division, OED, MDOT SHA  
Mr. Kevin Wilsey, Deputy Director, OED, MDOT SHA

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## Introduction

The following annual report was prepared by the Maryland Department of Transportation State Highway Administration (MDOT SHA) to demonstrate compliance from July 1, 2019 to June 30, 2020 (a.k.a., fiscal year 2020; referred to hereafter as “FY20”) in accordance with conditions in Part V.A.1 of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) discharge permit number 11-DP-3313 MD0068276, effective October 9, 2015 and scheduled for expiration on October 8, 2020 (referred to hereafter as the “MS4 Permit”). MDOT SHA submitted its reapplication for NPDES stormwater discharge permit coverage as Attachment B to its fourth year, FY19 MS4 annual report received by the Maryland Department of the Environment (MDE) on October 8, 2019.

MDOT SHA officially requested a modification of its current MS4 Permit on February 13, 2019, to allow the use of nutrient trading to meet the 20 percent impervious surface restoration requirement by the end of the current permit term (i.e., October 8, 2020). MDE determined the use of nutrient credits by MDOT SHA for meeting the 20 percent impervious surface restoration requirement is acceptable and issued its final determination to modify the MS4 Permit on November 8, 2019. MDE modifications added a new paragraph, permitting nutrient trading to meet the restoration requirement described in Part IV.E.3, and renamed Part IV.E.3 and Part IV.E.4 from the original MS4 Permit as Part IV.E.4 and Part IV.E.5, respectively.

On September 1, 2020, MDOT released its Draft FY21 through FY26 Consolidated Transportation Program (CTP), which details MDOT’s \$13.4 billion six-year capital budget. The Draft CTP shows a \$2.9 billion reduction compared to the \$16.3 billion Final FY20 through FY25 CTP released in January 2020. This \$2.9 billion reduction reflects capital budget reductions of \$1.9 billion necessitated by revenue declines associated with the COVID-19 pandemic health crisis as well as project cash flow changes and completions following record-setting investments in transportation over the last several years. MDOT also is reducing its FY21 operating budget by \$98 million to respond to the revenue decline. Incorporated into the CTP reductions are more than \$900 million and \$21 million of cuts applied respectively to MDOT SHA FY21 capital and operating budgets. The MS4 program at MDOT SHA has seen significant budget cuts for FY20 and FY21 that will impact some of the activities required under the permit as indicated throughout this report. Additional information regarding budgetary cuts, is provided on the MDOT website at the following address:

[http://www.mdot.maryland.gov/News/Releases2020/September\\_1\\_2020\\_FY\\_2021\\_FY\\_2026\\_CTP.html](http://www.mdot.maryland.gov/News/Releases2020/September_1_2020_FY_2021_FY_2026_CTP.html)

MDOT SHA has submitted, with this FY20 MS4 annual report, Geographic Information System (GIS) data (hereafter referred to as the “MS4 geodatabase”) in electronic format and in accordance with Part V.A.2 of the MS4 Permit and Version 1.2 of the MDE NPDES MS4 Geodatabase Design and User’s Guide distributed to permitted MS4s in May 2017. Additional data submitted electronically with this FY20 MS4 annual report include:

- Two independent geodatabases containing supplementary inventory information for MDOT SHA stormwater infrastructure and industrial sources not otherwise captured by the MDE MS4 geodatabase design. These data sets are submitted to demonstrate

compliance with conditions in Part IV.C of the MS4 Permit as described in the *Source Identification* section of this FY20 MS4 annual report.

- A Microsoft Excel workbook containing a comprehensive list of restoration Best Management Practices (BMPs) completed from 2011 to October 8, 2020, separated by contract, with associated location, impervious treatment, and cost information in accordance with conditions in Part IV.E.5.c of the MS4 Permit.

During each year of the current MS4 Permit term, MDOT SHA expended considerable resources and consistently made and reported progress toward meeting stormwater WLAs developed under approved TMDLs. Prior to the submittal date for this FY20 MS4 annual report, MDE has provided written comments in follow up to its review for each of the MDOT SHA FY16 through FY19 MS4 annual reports. In accordance with conditions in Part V.A.3 of the MS4 Permit MDOT SHA has provided written responses to all MDE comments and has implemented all applicable program modifications as requested by MDE.

MDOT SHA provided responses, dated March 19, 2020, to the MDE comments related to the FY18 MS4 annual report, dated September 16, 2019, as committed in the Introduction section of the FY19 MS4 annual report. MDE supplied MDOT SHA comments, dated March 11, 2020, related to the FY19 MS4 annual report and data submittal. MDOT SHA responses addressing the March 11, 2020 MDE comments are submitted in tandem to this FY20 MS4 annual report.

## Permit Administration and Legal Authority

The MS4 Permit was administered during FY20 by the MDOT SHA Office of Environmental Design (OED) as described in Section A of the FY19 MS4 annual report. Contact information provided for the program liaison/coordinator and manager is consistent with that previous reporting. In accordance with conditions in Part IV.A of the MS4 Permit, MDOT SHA has provided an updated organizational chart describing staff roles in relation to NPDES stormwater tasks in Appendix IV.A to this FY20 MS4 annual report.

In accordance with conditions in Part IV.B of the MS4 Permit relative to 40 CFR 122.26, MDOT SHA maintained adequate legal authority for compliance with all permit conditions during the FY20 reporting period and carried out all inspection, surveillance, and monitoring procedures necessary to demonstrate compliance with MS4 Permit conditions. MDOT SHA has provided associated information within Appendices B and C to this FY20 MS4 annual report.

## Status of Implementing the Stormwater Management Program

In the following subsections, MDOT SHA has provided the status of implementing the components of its stormwater management program that are established as conditions in the MS4 Permit. Stormwater program components reported in this FY20 MS4 annual report in accordance with conditions in Part V.A.1.a of the MS4 Permit include:

- Source Identification
- Stormwater Management
- Erosion and Sediment Control

- Illicit Discharge Detection and Elimination
- Trash and Litter
- Property Management and Maintenance
- Public Education
- Watershed Assessment
- Restoration Plans
- TMDL Compliance
- Assessment of Controls
- Program Funding

## Source Identification

In accordance with conditions in Part IV.C.1 of the MS4 Permit and throughout FY20, MDOT SHA continued to maintain and improve its inventory of storm drain infrastructure, major outfalls, stormwater management facilities, and associated drainage areas as described in Section C.1 of the FY19 MS4 annual report. Due to time and budgetary constraints, data to update the inventory for surrounding stormwater facilities/infrastructure was captured during respective BMP/facility preventative maintenance inspections. This resulted in updates to the inventory across the MS4 permitted area during FY20.

During FY20 a new Outfall Inspection tool, as referenced in Section C.1 of the FY19 MS4 annual report, completed development and was launched to add condition information, including drainage areas, to inventory updates. Only a small sample of outfall inspections were implemented during FY20 utilizing the new tool since the product development, testing, and launch activities also occurred during the reporting period. As part of a MDOT SHA agencywide Asset Management effort that is under development, it is anticipated that additional funding and focus on this new aspect of inspections may grow once budgetary issues have been resolved.

MDOT SHA has provided the outfall structure information in the Outfall and OutfallDrainageArea feature classes in the MS4 geodatabase submitted with this FY20 MS4 annual report. Information for conveyance and other structures not represented by the MDE MS4 geodatabase design are provided in a supplemental geodatabase submitted with this FY20 MS4 annual report in a format consistent with the FY19 submission.

In accordance with conditions in Part IV.C.2 of the MS4 Permit, MDOT SHA has identified industrial sites within MDOT SHA right-of-way that have the potential to contribute pollutants to MDOT SHA storm drain systems. These include MDOT SHA-owned NPDES 12-SW permitted industrial sites but also salt storage areas, parking lots, rest areas, and other highly trafficked or material storage areas as requested by MDE. There are no commercial sites on MDOT SHA properties.

MDOT SHA has provided location and other information for NPDES 12-SW permitted industrial sites in the MunicipalFacilities feature class of the MS4 geodatabase submitted with this FY20 MS4 annual report. Information for non-permitted industrial sites identified by MDOT SHA is provided in a supplemental geodatabase submitted with this FY20 MS4 annual

report in a format similar to the FY19 submission except MDOT SHA did not include sites located outside the MS4 permitted area or sites that are already represented in the MunicipalFacilities feature class of the MS4 geodatabase submitted with this FY20 MS4 annual report.

During FY20, updates to the inventory of Urban BMPs/SWM Facilities continued, including adjustments to the number of 2A grass swales on account of MDE comments, dated September 16, 2019, related to the MDOT SHA Impervious Area Assessment. In addition, the new version of the Water Quality Summary Sheet prompted changes to the database to include a distinction between new development and redevelopment SWM Facilities in design. Many existing facilities were not designed with this designation in mind and, in some cases, extensive research and analysis will be needed to include this information retroactively. This additional research and analysis is on hold due to the recent budget cuts. MDOT SHA has provided Urban BMP information in the BMPPOI feature class and the BMP table of the MS4 geodatabase submitted with this FY20 MS4 annual report.

As described in Section C.3 of the FY19 MS4 annual report, the MDOT SHA revised baseline analysis submitted in June 2018 included GIS data for its impervious surfaces. MDE found it acceptable that this information was not resubmitted with the FY19 MS4 annual report and MDOT SHA has similarly excluded it from the FY20 MS4 annual report. MDOT SHA has provided updates to the ImperviousSurface table of the MS4 geodatabase submitted with this FY20 MS4 annual report.

Monitoring site locations, established to meet conditions described in Part IV.F of the MS4 Permit, were revised as described in Section F.1 the FY19 MS4 annual report. These locations did not change during FY20. MDOT SHA has provided information for its monitoring sites in the MonitoringSite and MonitoringDrainageArea feature classes of the MS4 geodatabase submitted with this FY20 MS4 annual report.

In the MS4 geodatabase submitted with this FY20 MS4 annual report, MDOT SHA has provided information for its water quality improvement projects in the RestBMP, AltBMPLine, and AltBMPPoly feature classes as well as the StrmRestProtocols table. Submitted data includes projects completed through the end of the permit term as well as projects under construction that MDOT SHA expects to complete during FY21 and claim for restoration credit. It is anticipated, based on agreement with MDE, that excess restoration accomplished for this permit will be applicable to the next MS4 Permit term as restoration credit (rather than baseline).

## Stormwater Management

MDOT SHA continues to comply with State and federal laws and regulations regarding SWM as well as MDE permit requirements. MDOT SHA also continues to implement the practices established in the 2000 Maryland Stormwater Design Manual and the MDOT SHA Sediment and Stormwater Guidelines and Procedures (October 6, 2017) for all projects and remains in compliance with the Stormwater Management Act of 2007 (2007 SW Act), including the revised Chapter 5 of the 2000 Maryland Stormwater Design Manual, by implementing environmental site design (ESD) to the MEP for all new and redevelopment projects.

As described in Section D.1.a of the FY19 MS4 annual report, the MDOT SHA Plan Review Division (PRD) under the Office of Highway Development (OHD) is the approving authority for both erosion and sediment control and stormwater management for all MDOT SHA projects. During the FY20 reporting period, PRD has coordinated with MDE to update the PRD Sediment and Stormwater Guidelines and Procedures and Current Technical Practices documents in preparation of PRD being designated as an approval authority of NRCS-MD Code 378 Small Ponds on behalf of the MDE Dam Safety Permits Division. As of the submission of the FY20 annual report, this coordination has not been completed. Therefore, as agreed upon with MDE, updated versions of these documents have not been provided. The development and updating of these guidance documents in coordination with MDE will continue into FY21.

MDOT SHA maintained SWM and construction inspection information during FY20 utilizing the processes described in Sections D.1.b. and D.1.c of the FY19 MS4 annual report. In accordance with conditions in Part IV.B of the MS4 Permit, a summary of construction inspections, non-compliance findings, and the actions taken by MDOT SHA district is referenced in Section 1.11 of, and is provided as electronic data with, the *MDOT SHA Annual Report for Delegation of Sediment and Stormwater Approval Authority* submitted in tandem with this FY20 MS4 annual report. Information for the MDOT SHA SWM program; including required documentation in accordance with conditions in Parts IV.D.1.b, IV.D.1.c, and IV.D.1.d of the MS4 Permit; is provided in the SWM table of MS4 geodatabase submitted with this FY20 MS4 annual report.

Under COMAR 26.17.02.03.A.3, MDE is designated as the responsible agency for inspecting and enforcing stormwater management for State construction projects subject to COMAR 26.17.02. Under the MS4 permit, in Part IV.D.1.d, MDE delegates its inspection authority to MDOT SHA by stating MDOT SHA is responsible for conducting preventative maintenance inspections, according to COMAR 26.17.02, of all ESD treatment systems and structural stormwater management facilities at least on a triennial basis. MS4 reporting to date has reflected this and MDOT SHA understands its inspection responsibility to include initial/as-built, triennial, and remediation follow-up/verification inspections, all of which are components of the current MDOT SHA preventative maintenance program and are reported in the “MAIN\_INIT” and “MAIN\_FLW” fields of the SWM table in the MS4 geodatabase submitted with this FY20 MS4 annual report.

The MS4 permit does not however delegate authority to MDOT SHA for stormwater management enforcement activities, such as those described in COMAR 26.17.02.11.C. MDOT SHA recognizes that its relationship to the regulation of stormwater management is different than other MS4-permitted jurisdictions due to the fact that MDOT SHA is a State agency and is not operating under ordinances that provide procedures to ensure deficiencies indicated by inspections are rectified. The preventative maintenance program established by MDOT SHA does not include any regulatory processes to enforce COMAR 26.17.02, or to address any subsequent violations, against itself. MDOT SHA has reported three (3) preventative maintenance enforcement activities and zero (0) violations for FY20 in the respective “MAIN\_ENF” and “MAIN\_VIO” fields of the SWM table in the MS4 geodatabase submitted with this FY20 MS4 annual report.

In a communication to MDOT SHA on July 13, 2020, MDE stated that MDOT SHA may use the necessary mechanisms to ensure that maintenance work performed by contractors or District maintenance shops is acceptable and that MDOT SHA may also work with the MDE compliance program when needed to ensure proper facility maintenance. MDOT SHA would like to work with MDE to identify appropriate activities within the MDOT SHA preventative maintenance program to enforce proper facility maintenance and track enforcement in accordance with the MS4 reporting requirements.

During the FY20 reporting period, MDOT SHA conducted 4007 preventative maintenance inspections of SWM facilities applying processes described in Section D.1.d of the FY19 MS4 annual report and in accordance with COMAR 26.17.02 and conditions in Part IV.D.1.d of the MS4 Permit. MDOT SHA has provided the inspection program information in the BMPInspections, RestBMPInspections, AltBMPLineInspections, and AltBMPPolyInspections tables of the MS4 geodatabase submitted with this FY20 MS4 annual report.

During FY20, MDOT SHA performed 73 initial inspections of SWM facilities. These inspections are completed by default during construction as part of the SWM facility as-built certification process. Construction inspections occur as specified in COMAR 26.17.02.10 and documented on plans with photos and logs by the As-Built Engineer (ABE). This information is the best and most-accurate information available to confirm that SWM facility will perform as designed and regulatorily permitted, and thus is designated as the initial inspection. In 2018, the MDOT SHA Standard Specifications for Construction and Materials were updated to include Section 317, a permanent addition to the specifications that significantly updated, revised, and clarified the process requirements during the construction phase of projects. More information regarding the 2020 Standard Specifications for Construction and Materials can be found online at the following web address:

<https://www.roads.maryland.gov/mdotsha/Pages/sscm.aspx?PageId=853&lid=SSP>

The submissions of the SWM facility as-built certification package are made electronically through the Quality Assurance (QA) Toolkit that is not only used for the erosion and sediment control modification process but also as a SWM tool as well. A designated team of engineers reviews these packages for completeness and accuracy before they are forwarded to PRD for structural approval. Final acceptance has been delegated to the OHD Highway Hydraulics Division (HHD) by PRD and it is only when HHD issues final acceptance that the data is entered into the data set.

At this time, there is no automated system for transitioning data from the QA Toolkit to the NPDES database. The HHD SWM Asset management team has been working with the MDOT SHA Office of Planning and Preliminary Engineering Data Governance Division (DGD) to create a process for this coordination. The addition of this information into the NPDES schema was in development during FY20; however, it had not yet reached user-acceptance testing before funding issues halted progress. The teams will continue work on this system in upcoming years when funding is again available for such efforts.

MDOT SHA continued to perform routine and remediation maintenance for SWM facilities during FY20 applying processes described in Section IV.D.1.d of the MS4 annual report.

District operation manuals for SWM and drainage assets were updated to include common problems and simplified maintenance schedules. More information and links to District-specific operation manuals can be found online at the following MDOT SHA webpage:

<https://www.roads.maryland.gov/mdotsha/pages/Index.aspx?PageId=363>

Design and/or construction contracts were opened to address major maintenance and remediation needs for SWM facilities and MDOT SHA completed remediation of three (3) facilities during the FY20 reporting period. A total of four (4) Remediation Verifications were completed for repairs made to SWM facilities in FY20. An additional four facilities were repaired; however, the final acceptance records have not been submitted by the contractor at this time so MDOT SHA cannot verify that status of their functionality. One MDOT SHA remediation construction contract had major delays due to contractor challenges associated with work bundled into the contract. This remediation contract was cancelled at the end of FY20.

Though fewer SWM facility remediations were under construction in FY20, relative to FY19, many more were under design. Through FY20, considerable effort was put into development of remediation work orders for major repairs on SWM facilities. As a result of this effort, many facilities were screened for the feasibility of repair work to be performed. Also as a result of this effort and the difficulty in finding plans for facilities that had been retrofit many years ago, a new process for enhancing the tracking system was put in place. This tracking would now allow for abandonment. A new procedure has been developed to facilitate abandonment that includes review and approval at several levels culminating in submission to PRD for final concurrence that the permit requirements surrounding the facility will be adjusted.

During the current MS4 Permit term, a total of 50 facilities have been remediated by MDOT SHA. A total of 257 SWM facilities still require major maintenance or retrofit. A remediation maintenance resolution schedule is provided in **Table IV.D.1.d** located in Appendix B to this FY20 MS4 annual report in accordance with conditions in Part IV.B of the MS4 Permit. Maintenance work has been prioritized and expected completion dates are between June 2023 and June 2026. Due to resource constraints during FY20 and uncertainty surrounding resource availability for FY21 and FY22, MDOT SHA has updated its remediation completion commitment dates to reflect greater resource availability anticipated in FY23.

## Erosion and Sediment Control

During the FY20 reporting period, MDOT SHA maintained compliance with Maryland State and federal laws and regulations for erosion and sediment control (ESC) as well as MDE requirements for permitting, including compliance with the General Permit for Stormwater Associated with Construction Activity (NPDES-CA) for projects that disturb at least one acre of land. MDOT SHA continued to submit applications for coverage under the NPDES-CA (State discharge permit number 14GP, effective January 1, 2015; expired December 31, 2019), for all qualifying roadway projects as described in Section D.2.d of the FY19 MS4 annual report. During the FY20 reporting period, a total of 49 MDOT SHA construction projects receiving Notice to Proceed (NTP) required coverage under an NPDES-CA permit.

MDE has allowed MDOT SHA the option of continuing to operate under the terms of the expired NPDES-CA permit until the new permit is issued; however, additional conditions apply. Specifically, MDOT SHA must submit a Declaration of Intent (DOI) which declares the intent to comply with the terms of the expired permit as well as the yet unknown terms of the new permit once it is issued. In addition, MDOT SHA must also submit additional information for projects that are located within Tier II watersheds and demonstrate that greater measures are used to protect the watershed. Both of these conditions took effect on or about May 20, 2020 and retroactively affected all projects with active NPDES-CA coverage as well as any new Notice-of-Intent (NOI) applications submitted after May 20, 2020.

Alternatively, MDOT SHA can obtain individual NPDES-CA permit coverage on a project-by-project basis; however, MDOT SHA has opted to continue coverage under the expired permit for consistency and expediency. Projects requiring coverage will also continue to operate this way until a new permit is issued. MDE has not established a date for the new permit, but MDOT SHA received a draft of the upcoming permit on September 16, 2020. Authorization letters received to-date state the following “This coverage will continue until the deadline for new registrations required under a new general permit, the date you obtain coverage under an individual permit or general permit, or the date the Consent Order is terminated, whichever occurs first.” It is the intent of MDOT SHA to comply.

In accordance with conditions in Part IV.D.2.c of the MS4 Permit, MDOT SHA has provided the ESC program information in the ErosionSedimentControl table and the grading permit program information in the QuarterlyGradingPermits feature class and the QuarterlyGradingPmtInfo table in the MS4 geodatabase submitted with this FY20 MS4 annual report.

In accordance with conditions in Part IV.D.b of the MS4 Permit and in cooperation with the Maryland Transportation Builders and Materials Association (MTBMA), MDOT SHA continued to offer updated ESC training, as described in Section D.2.b of the FY19 MS4 annual report, and issued 188 ESC (a.k.a., “Yellow Card”) certifications and 236 re-certifications during the FY20 reporting period. Responsible Personnel Certification training was administered through MDE’s online Responsible Personnel Course. More information regarding ESC certification is available at the following MDOT SHA webpage:

<https://www.roads.maryland.gov/mdotsha/pages/Index.aspx?PageId=56>

## Illicit Discharge Detection and Elimination

The MDOT SHA Office of Environmental Design, Environmental Compliance Division (ECD) coordinated illicit discharge detection and elimination screenings during the FY20 reporting period. During the FY20 outfall selection process, ECD considered pollution potential, selecting outfalls located in commercial and industrial areas determined to be “stormwater hotspots” with extra focus on permitted counties where IDDE screenings were less concentrated in previous years. Stormwater pipes 12 inches in diameter and greater were selected throughout Carrol, Charles, Harford, and Howard Counties.

In accordance with conditions in Part IV.D.3.a of the MS4 Permit, MDOT SHA exceeded the 150 minimum annual requirement for primary field screenings during FY20. Additional IDDE investigations were conducted during FY20 for illicit discharge (ID) sites whose status was reported as “open” in the FY19 MS4 annual report. Citizen reporting or other MDOT SHA contractors working within MDOT SHA right of way (ROW) also identified potential IDs requiring investigation. Investigations related to this type of notification were completed during FY20 in Baltimore, Frederick, and Cecil Counties.

In accordance with conditions in Parts IV.B, IV.D.3.d, and IV.D.3.e of the MS4 Permit, a summary of outfalls screened and potential IDs with associated jurisdictional contacts/resolution schedules for each is provided in **Tables IV.D.3.a and IV.D.3.d** located in Appendix C to this FY20 MS4 annual report. In the MS4 geodatabase submitted with this FY20 MS4 annual report, MDOT SHA has provided the illicit discharge detection and elimination program information in the IDDE associated table.

In accordance with conditions in Part IV.D.3.b of the MS4 Permit, during FY20, ECD performed a total of 293 inspections across 146 MDOT SHA industrial facilities (inspecting 32 NPDES 12-SW permitted sites and 114 non-permitted sites) identified by MDOT SHA, per Part IV.C.2 of the MS4 Permit, as having the potential to contribute significant pollutants to MDOT SHA storm drain systems.

The types of inspections performed by ECD for identified industrial areas as well as the associated inspection tracking system remain unchanged relative to descriptions provided for each in the FY19 MS4 annual report. A total of 177 stormwater related findings were generated by facility inspections during FY20 and applicable records were uploaded to the MDOT SHA web-based tracking system. Of those findings, 131 were resolved during FY20 whereas 46 findings remain unresolved. Corrections for some of the findings require further maintenance planning and possible engineering controls while other corrections were delayed during the FY20 reporting period due to staff reductions caused by aforementioned budget cuts. In accordance with Part IV.B of the MS4 Permit, a summary of the most recent quarterly inspection report for each of the NPDES 12-SW permitted sites located within the MS4 Permit areas is provided in Appendix C to this FY20 MS4 annual report.

As part of its overarching program to respond to illegal discharges, dumping, and spills; ECD continued to coordinate with MDE, surrounding jurisdictions, and property owners during the FY20 reporting period to eliminate IDs and clean up spills and dumping. Implementation of a new IDDE management tool that was planned for completion during FY21, as reported by MDOT SHA in the FY19 MS4 annual report, will be delayed at least one fiscal year due to budget shortfalls.

## Trash and Litter

MDOT SHA provided comprehensive descriptions of its “multi-pronged” trash/litter reduction strategy in the FY18 and FY19 MS4 annual reports. The approach utilizes MDOT SHA employees, contractors, correctional services, as well as labor donated through the Sponsor-A-Highway (SAH) program and partnerships with Adopt-A-Highway (AAH) volunteers.

In accordance with conditions in Part IV.D.4.d of the MS4 Permit, trash/litter removed by MDOT SHA trash reduction strategies during the FY20 reporting period is documented in **Table IV.D.4.d** below. Implementation of the AAH and SAH programs in FY20 resulted in 106 highway miles adopted and 388 miles sponsored. Relative to implementation reported for the FY19 period, this is an increase of 4 and a decrease of 6 miles respectively for the two programs.

**Table IV.D.4.d: Trash and Litter Removed During FY20 by MDOT SHA Trash Reduction Strategies**

Jurisdiction	Truckloads	Conversion to Pounds
Anne Arundel	439	159,420
Baltimore	1,444	510,089
Carroll	73	25,477
Cecil	153	53,410
Charles	226	81,390
Frederick	179	63,548
Harford	132	46,352
Howard	378	133,420
Montgomery	440	154,505
Prince George's	1,134	405,100
Washington	161	58,073
Salisbury	85	29,901
<b>Totals</b>	<b>4,845</b>	<b>1,720,683</b>

MDOT SHA maintained its “Educational Outreach” webpage content during FY20, as described in Section D.4.b of the FY19 MS4 annual report. The MDOT SHA website was updated during FY20 and the Educational Outreach webpage is now located at the following address:

<https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=48>

Additional public education and outreach activities implemented by MDOT SHA during FY20 to reduce littering, in accordance with conditions in Part IV.D.4.b of the MS4 Permit, are incorporated into the summary describing public education programs submitted as Appendix D to this FY20 MS4 annual report per Part V.A.1.d of the MS4 Permit.

The MDOT Excellerator program, as described in Section D.4.c of the FY19 MS4 annual report, remains the primary performance management system for tracking the effectiveness of MDOT SHA trash reduction strategies. The most recent biannual report was made publicly accessible

on June 26, 2020 at the following web address and included, in charts 9.2D.1, 9.2D.2, and 9.2D.3, an evaluation of quarterly implementation and associated expenditures by MDOT for litter pickup in FY19 and FY20:

<http://www.mdot.maryland.gov/newMDOT/Planning/Excellerator/MDOTExcellerator>

## Property Management and Maintenance

During FY20, MDOT SHA continued to update Storm Water Pollution Prevention Plans (SWPPP) and maps following site changes and renovations and continued providing annual SWPPP training to its maintenance personnel. As previously described in the *IDDE* section of this FY20 MS4 annual report, the MDOT SHA maintenance facility staff continued to perform monthly inspections and ECD continued to perform inspections at all MDOT SHA facilities through its District Environmental Coordinators throughout the FY20 reporting period. ECD managed resultant maintenance issues identified in accordance with the process previously described in Section D.3.b of the FY19 MS4 annual report.

For each municipal facility within the MS4 permitted jurisdictions covered under the General Discharge Permit (12-SW), MDOT SHA has provided, in **Table IV.D.5.a**, a summary of updates to facility SWPPPs and associated trainings for staff in accordance with conditions in Parts IV.D.5.a and IV.D.5.b.v of the MS4 Permit. Please note that the Thurmont facility is considered a "satellite" site of the Frederick facility meaning no MDOT SHA staff report to the Thurmont facility directly. MDOT SHA staff work at the Thurmont facility routinely but are technically staff from the Frederick facility. The Thurmont facility is a 12-SW permitted site and consequently requires an associated SWPPP; however, the staff training is accounted for within the Frederick facility's staff training totals in **Table IV.D.5.a**. In the MS4 geodatabase submitted with this FY20 MS4 annual report, MDOT SHA has provided information regarding 12-SW permitted facilities in the MunicipalFacilities feature class.

**Table IV.D.5.a: Summary of SWPPP Status and Training for MDOT SHA Municipal Facilities**

District	Maintenance Facility	12-SW Permit Type	Date of Most Recent SWPPP Update (Month-YR)	Date of Most Recent SWPPP Training (Month-YR)	Number of Individuals Trained
1	Cambridge	General	January-17	October-19	30
	Salisbury	General	December-19	October-19	32
2	Elkton	General	April-19	September-19	35
3	Fairland	General	January-19	November-19	37
	Gaithersburg	General	February-19	June-20	14
	Laurel	General	February-19	November-19	37

**Table IV.D.5.a: Summary of SWPPP Status and Training for MDOT SHA Municipal Facilities**

District	Maintenance Facility	12-SW Permit Type	Date of Most Recent SWPPP Update (Month-YR)	Date of Most Recent SWPPP Training (Month-YR)	Number of Individuals Trained
	Marlboro	General	February-19	November-19	25
4	Churchville	General	March-19	June-20	26
	Golden Ring	General	March-19	June-20	28
	Hereford	General	March-19	June-20	37
	Owings Mills	General	March-19	June-20	20
	Annapolis	General	March-19	September-19	39
5	Glen Burnie	General	March-19	September-19	47
	La Plata	General	March-19	September-19	31
	Hanover Auto Shop	General	June-20	December-19	16
	Hagerstown	General	February-20	September-19	37
7	Dayton	General	April-20	October-19	43
	Frederick	General	April-20	October-19	38
	Thurmont	General	May-20	-	-
	Westminster	General	May-20	November-19	34
<b>Total</b>					<b>606</b>

MDOT SHA continued to sweep a selection of roads seasonally and clean inlets using vacuum technology as described in Section D.5.b of the FY19 MS4 annual report. Information for implementation of inlet cleaning and storm drain vacuuming operations during FY20 is provided in **Table IV.D.5.b.** below.

**Table IV.D.5.b: Tons Collected in FY20 from Inlets Cleaning and Storm Drain Vacuuming**

County	MDOT SHA Maintenance Shop	Total Number of Inlets Cleaned	Tons* Collected	Tons Collected from Storm Drain Vacuuming
Anne Arundel	Annapolis	117	12	8
	Glen Burnie	426	45	10
Baltimore	Golden Ring	537	56	8
	Hereford	185	19	32
	Owings Mills	349	37	10
Carrol	Westminster	13	1	23
Cecil	Elkton	0	0	-
Charles	La Plata	12	1	4
Frederick	Frederick	0	0	-
Harford	Churchville	288	30	16
Howard	Dayton	4	1	1
Montgomery	Fairland	1249	131	52
	Gaithersburg	837	88	12
Prince George's	Laurel	528	55	33
	Upper Marlboro	115	12	9
Wicomico County	Salisbury	0	0	-
<b>Totals</b>		<b>4660</b>	<b>488</b>	<b>218</b>

In accordance with conditions in Part IV.D.5 of the MS4 Permit, MDOT SHA has provided its statewide usage during FY20 for herbicide, fertilizer, and deicing chemicals, including percent change for each chemical type based on amounts reported for the FY19 period, in the ChemicalApplication associated table of the MS4 geodatabase submitted with this FY20 MS4 annual report.

A significant increase can be observed in quantities of herbicide applied in FY20 relative to the FY19 reporting period. While the overall quantity of herbicide used increased, MDOT SHA decreased its use of non-selective herbicide during the reporting period through statewide initiatives to minimize the application of glyphosate on guardrails while promoting greater use of plant growth regulators (especially trinexapac-ethyl) and selective herbicides as alternatives.

Work continued in FY20 on the MDOT SHA Landscape Management Guide (LMG), as described in Section D.5.b.iii of the FY19 MS4 annual report, and a final draft is nearing completion. Key concepts and draft chapters of the LMG were discussed at all MDOT SHA pesticide applicator training sessions in FY20. MDOT SHA continued all four of its pesticide applicator training classes, as described in Section D.5.b.iii of the FY19 MS4 annual report, training 196 MDOT SHA pesticide applicators in FY20.

MDOT SHA has concluded its multi-year cooperative research effort with the Maryland Department of Agriculture (MDA) on biocontrol of invasive plants using the Mile-a-Minute Vine Weevil (*Rhinoncomimus latipes*). MDA released the weevil at 38 locations on MDOT SHA property during FY20.

As described in Section D.5.b.iii of the FY19 MS4 annual report, MDOT SHA is shifting its research focus to Japanese Knotweed Psyllid (*Aphalara itadori*), an insect biocontrol with potential to suppress the growth and spread of Japanese Knotweed (*Polygonum cuspidatum*). The USDA permit for Japanese Knotweed Psyllid was approved March 20, 2020. MDA is currently propagating Knotweed and will rear Psyllids in late 2020 for release in 2021.

In December 2019, MDOT SHA completed its research with the University of Maryland, Appalachian Lab that tested the efficacy of planting alternative roadside grasses and seed mixtures. Side-oats grama appeared to be the most promising roadside grass treatment because it established fast, was low in stature, and was competitive against weeds. The final report was made publicly available at the following web address:

[https://www.roads.maryland.gov/OPR\\_Research/MD-19-SHA-UMCES-7-01\\_Turfgrass2\\_Report.pdf](https://www.roads.maryland.gov/OPR_Research/MD-19-SHA-UMCES-7-01_Turfgrass2_Report.pdf)

During FY20, MDOT SHA continued to test and evaluate new winter materials, equipment, and strategies in an on-going effort to improve the level of service provided to motorists during winter storms while minimizing the impact of its operations on the environment. Minimization practices described in Section D.5.b.iv of the FY19 MS4 annual report continued during the FY20 reporting period. A description of MDOT SHA winter operations and a link to the current version of the MDOT SHA Salt Management Plan, most recently updated in October 2019, is publicly accessible at the following web address:

<https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=352>

Within the MS4-permitted areas, MDOT SHA applied a total of 17,445 tons of sodium chloride (rock or solar salt) during the 2019-2020 winter season. MDOT SHA uses a metric of pounds of road salt per total lane miles per inch of snow (lbs/lm/inch) in its year-to-year comparisons of road salt usage. For the FY20 reporting period, the value for this metric was 313 lbs/lm/inch which is a decrease of 248 lbs/lm/inch when compared to amounts reported for the FY19 period.

This decrease can be attributed to a very mild winter with record average low frozen precipitation totals across the state during FY20.

As described in Section D.5.b.iv of the FY19 MS4 annual report, MDOT SHA continued its “Annual Snow College” training during FY20 in accordance with conditions in Part IV.D.5.b.v of the MS4 Permit. Snow College was canceled in MDOT SHA Districts 1 and 2 in FY19, due to unanticipated circumstances, but was implemented statewide in FY20 with greater than average participation across all MDOT SHA Districts. FY20 Snow College events trained 127 operators in snow removal and salt management, including new hire and refresher training. Additionally, MDOT SHA continued administration of annual maintenance shop winter meetings and hired equipment operator trainings during FY20, training approximately 1,000 State employees and 2,100 hired equipment operators respectively.

## Public Education

MDOT SHA continued to operate its Customer Care Management System, as described in Section D.6.a of the FY19 MS4 annual report, throughout FY20 for submission of complaints and concerns. In FY20, this system received approximately 21,000 service requests. There were approximately 2,800 service requests regarding littering and illegal dumping related issues of which 2,700 are closed. These figures have decreased since FY19 in which 28,000 service requests were received with 3,000 being related to illegal dumping.

During the FY20 reporting period, MDOT SHA maintained its public education webpage, providing links to several interactive maps and educational resources as previously described in the *Trash and Litter* section of this FY20 MS4 annual report. MDOT SHA also participated in numerous educational opportunities described in Appendix D to this FY20 MS4 annual report.

## Watershed Assessment

In accordance with conditions in Part IV.E.1 of the MS4 Permit, MDOT SHA continued to reference County watershed assessments to identify specific watershed issues and restoration project opportunities, as described in Section E.1 of the FY19 MS4 annual report, during development of individual watershed TMDL Implementation Plans in FY20. Additionally, throughout the current permit term, MDOT SHA has committed resources to advocating for, drafting, negotiating, executing, and amending long-term Memorandums of Understanding/Agreements with 15 different county, State, and federal government agencies in order to facilitate collaborative watershed restoration and monitoring activities. These interagency partnerships have facilitated data exchanges, right-of-way/easement acquisition, pooled stormwater and restoration monitoring and research, and construction of new restoration stormwater management, tree planting, outfall stabilization, impervious area removal, and stream restoration BMPs.

## Restoration Plans

In accordance with conditions in Part IV.E.2.a of the MS4 Permit, MDOT SHA submitted impervious surface area assessments (as described in Section E.2.a of the FY19 MS4 annual report) and implemented restoration efforts for more than the required 4,621 equivalent acres of impervious surfaces before the end of FY20. Restoration implemented was consistent with the methodology described in the MDE 2014 document titled, “Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits” and all subsequently provided MDE guidance. MDOT SHA has provided **Table IV.E.2** below to document progress relative to restoration benchmarks established in Part II.D of the MDOT SHA *Impervious Restoration and Coordinated TMDL Implementation Plan*, submitted with Appendix B to the FY19 MS4 annual report.

**Table IV.E.2: Percentage of Impervious Treatment, Benchmark versus Achieved**

Fiscal Year	Benchmarks		Actual Achieved	
	% Progress Toward Restoration Goal (Revised 2018)	Cumulative Acres of Restoration Projected (Revised 2019)	Cumulative Acres of Restoration Achieved	% Progress Toward Restoration Goal
October 21, 2010 to 2015	20%	924	1,845	40%
2016	30%	1,386	2,473	54%
2017	40%	1,848	2,828	61%
2018	45%	2,079	3,216	70%
2019	50%	2,311	3,646	79%
2020	95%	4,390	7,268	157%
2021	100%	4,621		

In accordance with conditions in Part IV.E.3 of the MS4 Permit, MDOT SHA has provided the cumulative impervious acres restored achieved through FY20 under the current permit compliance period in **Table IV.E.3** below. For operational activities, MDOT SHA has adjusted its reporting method to include actual annual implementation whereas previous methodologies used a consistent annual target goal. Due to budgetary impacts, resources were not available to complete reconciliation of credit for annual BMPs reported in Table IV.E.3 below with credit reported in the AltBMPPoly feature class of MS4 geodatabase submitted with this FY20 MS4 annual report. In response, MDOT SHA has excluded records from the AltBMPPoly feature class that report annual BMP implementation. When resources become available to perform the work, MDOT SHA will complete the reconciliation effort and provide MDE an updated AltBMPPoly feature class that accurately reflects actual implementation of inlet cleaning and street sweeping operations during the compliance period, as reported in Table IV.E.3 below.

**Table IV.E.3: Impervious Acres Restored Achieved During the MS4 Permit Compliance Period**

BMP Type	Oct. 21, 2010 to 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Jul. 1, 2020 to Oct. 8, 2020	Report Date Totals	Oct. 9, 2020 to Jun. 30, 2021 <sup>3</sup>	Anticipated Final Permit Totals
Impervious Surface Elimination to Pervious	0.48	0	1.85	0.03	0.11	0.69	0	<b>3.16</b>	0	<b>3.16</b>
New Stormwater Control Structures	85.75	53.57	55.17	51.41	35.57	0	0	<b>281.47</b>	0.89	<b>282.36</b>
Grass Swales	0	9.07	11.60	0	0	0	0	<b>20.67</b>	0	<b>20.67</b>
Outfall Stabilization	0	11.92	11.36	169.91	72.83	209.76	119.55	<b>595.33</b>	308.88	<b>904.21</b>
Retrofit Existing Stormwater Control Structures	0	99.27	3.96	71.54	64.54	16.87	29.39	<b>285.57</b>	23.17	<b>308.74</b>
Stream Restoration	1,275.09	392.17	209.10	7.14	175.67	3,371.06	311.99	<b>5,742.22</b>	542.68	<b>6,284.90</b>
Tree Planting	483.60	62.13	20.58	78.15	73.51	24.16	0.69	<b>742.83</b>	8.54	<b>751.37</b>
Redevelopment Credit	0	0	41.70	9.71	7.82	0	0	<b>59.23</b>	0	<b>59.23</b>
<b>Built BMP Subtotals =</b>	<b>1,845</b>	<b>628</b>	<b>355</b>	<b>388</b>	<b>430</b>	<b>3,622</b>	<b>462</b>	<b>7,730</b>	<b>884</b>	<b>8,614</b>
Inlet Cleaning <sup>1</sup>	N/A	N/A	195.00	175.20	166.60	282.41	N/A	<b>204.80</b>	N/A	<b>204.80</b>
Street Sweeping <sup>1</sup>	N/A	N/A	52.00	34.04	25.96	34.53	N/A	<b>36.63</b>	N/A	<b>36.63</b>
Credit Acquisition	0	0	0	0	0	0	0	<b>0</b>	0	<b>0</b>
<b>Final Totals =</b>								<b>7,972</b>	<b>884</b>	<b>8,856</b>
20% Restoration Requirement =								4,621		4,621
% Untreated Impervious Surface Area <sup>2</sup> Restored =								35%		38%
% Progress Towards Restoration Requirement =								173%		192%
<sup>1</sup> Total acres achieved for inlet cleaning and street sweeping annual BMPs is presented here as the average annual implementation across the four years for which MDOT SHA has reported acres restored by annual BMPs. MDOT SHA will revise MS4 geodatabase information to accurately reflect credit totals reported here. <sup>2</sup> On September 16, 2019 MDE approved the MDOT SHA baseline at 23,104.8 acres of untreated impervious surface area <sup>3</sup> BMPs included in restoration for current permit term that were funded, designed, advertised, and initiated construction under the current permit, but construction schedules extended beyond the current MS4 Permit expiration date.										

## TMDL Compliance

The United States Environmental Protection Agency (EPA) approved 6 new TMDLs during FY19. In accordance with conditions in Part IV.E.2.b of the MS4 Permit, MDOT SHA submitted 3 new TMDL Implementation Plans to MDE by their respective FY20 due dates. The names and submission dates of the 3 plans are as follows:

- Non-Tidal Patuxent River Lower Watershed Sediment TMDL Implementation Plan, July 2, 2019
- Non-Tidal Patuxent River Middle Watershed Sediment TMDL Implementation Plan, July 2, 2019
- Sediments in the Non-Tidal West River Watershed, April 24, 2020

Each of the public comment periods for the 3 Implementation Plans that were submitted to MDE were announced in the Baltimore Sun, Washington Post, and on MDOT SHA's website during FY20 in accordance with conditions in Part IV.E.4 of the MS4 Permit. No comments were received during the respective comment periods.

Three newly approved TMDLs in FY19 did not require an implementation plan to be submitted for the following reasons:

- Piscataway Creek and Mattawoman Creek Tidal Fresh PCB TMDL, approved on February 19, 2019

No Implementation Plan needed due to the TMDL document stating that "reductions to PCB loads from non-regulated watershed runoff, contaminated sites, and NPDES regulated stormwater do not have to be addressed directly, as they will be achieved through reductions in atmospheric deposition."

- Non-Tidal Upper Chester River Sediment TMDL, approved on April 8, 2019

No Implementation Plan needed due to a 0% reduction for NPDES Regulated Stormwater Sector WLA.

- Lower Patuxent River Bacteria TMDL, approved on May 21, 2019

No Implementation Plan needed due to no point source reduction requirement included in the TMDL document.

In FY20, 4 new TMDLs were approved by the United States Environmental Protection Agency (EPA). Per Part IV.E.2.b of the MS4 Permit, MDOT SHA completed and submitted TMDL Implementation Plans for 3 of the new TMDLs by their respective FY21 due dates. The names and submission dates of the 3 required plans are as follows:

- Marsh Run Sediment TMDL Implementation Plan, September 29, 2020
- Piscataway Creek Sediment TMDL Implementation Plan, October 3, 2020
- Port Tobacco River Sediment TMDL Implementation Plan, October 9, 2020

In accordance with conditions in Part IV.E.5 of the MS4 Permit, MDOT SHA has provided the required FY20 TMDL Assessment Report as Appendix E to this FY20 MS4 annual report. MDOT SHA has also provided Bay and local TMDL compliance information, respectively, in the CountywideStormwaterWatershedAssessment and LocalStormwaterWatershedAssessment tables of MS4 geodatabase submitted with this FY20 MS4 annual report.

## Assessment of Controls

The MDE-approved monitoring plans, developed by MDOT SHA to satisfy conditions in Part IV.F of the MS4 Permit, were appended to the FY16 and FY17 MS4 annual reports. Those approved monitoring plans contained a schedule for monitoring activities proposed by MDOT SHA based on project schedules at the time the plans were developed. Sampling schedules changed during the course of the current MS4 Permit term due to the respective project design/construction schedules beginning later than anticipated and, in the case of the Little Catocin Creek stream restoration, construction delays caused by a severe flooding event, as described in Section F.1 of the FY19 MS4 annual report. **Table IV.F** below summarizes the proposed and actual monitoring schedules respectively.

In accordance with conditions in Part IV.F.1 of the MS4 Permit, MDOT has fulfilled its obligations for Watershed Restoration Assessment, as proposed in the associated MDE-approved monitoring plan, for all monitoring phases except CHEM 4 and BIO 4. These two remaining activities have been deferred due to impacts to available resources in FY20 and FY21 resultant from the budget cuts.

MDOT SHA committed to two full years (24 months) of chemical monitoring during the post-construction phase and implemented 15 months of monitoring before activities were disrupted in FY20 by impacts to state budgets. The CHEM 3 monitoring phase was completed however completion of the CHEM 4 monitoring phase has been deferred. Due to the uncertainty of resource availability for FY21 and beyond and the deferment of associated monitoring activities, chemical monitoring stations were removed in June 2020. BIO 4 activities, including the analysis of benthic macroinvertebrate samples collected during the 2020 spring index period and all planned summer 2020 index period stream habitat assessments, could not be completed and have also been deferred due to the aforementioned budgetary constraints.

In accordance with conditions in Part IV.F.1.a.iv of the MS4 Permit, MDOT SHA has met its obligations by recording continuous flow measurements throughout all monitoring phases completed to date. The Watershed Restoration Assessment monitoring site is not located within the watershed of any EPA approved TMDLs with WLAs attributed to MDOT SHA and MDOT SHA does not calibrate watershed assessment models. Collection of continuous flow measurements ceased in June 2020 with the removal of chemical monitoring stations.

In accordance with conditions in Parts IV.F.1.d and V.A.1.b of the MS4 Permit, MDOT SHA has provided Watershed Restoration Assessment information in the ChemicalMonitoring and BiologicalMonitoring tables of the MS4 geodatabase and Appendix F submitted with this FY20 MS4 annual report. In accordance with conditions in Part. IV.F.1.c.iii of the MS4 Permit, MDOT SHA has also provided the required hydraulic model as a component of Appendix F.

In accordance with conditions in Part IV.F.1.d.iii of the MS4 Permit, MDOT SHA is hereby requesting a modification to the MDE-approved monitoring plan/program for Watershed Restoration Assessment at the Little Catocin Creek in Frederick County to remove the second year of post-construction chemical and biological monitoring. This would eliminate the CHEM 4 and BIO 4 monitoring phases in the approved plan (see **Table IV.F** below). The PHYS 4 phase was completed and is submitted with the monitoring report included in Appendix F along with the required hydraulic modeling. Although the MDE-approved monitoring plan only prescribed a single year of pre-construction monitoring, delays in the construction schedule allowed MDOT SHA to perform an additional year of pre-construction monitoring in 2017 for both the biological and physical components of the plan. No physical monitoring work was proposed during the construction period (PHYS 2), however MDOT SHA orchestrated supplementary surveys in July/August 2018 to evaluate changes resulting from the severe flood event that impacted the site on May 15, 2018. In addition to the aforementioned budgetary constraints, MDOT SHA requests that MDE also consider these additional pre-construction and construction phase monitoring activities and reporting by MDOT SHA during 2017 and 2018 as justification for the requested modifications MDOT SHA is requesting to the MDE-approved monitoring plan.

**Table IV.F: Assessment of Controls Monitoring Schedules and Progress**

Monitoring Phase	Proposed Dates	Actual Dates	Construction Phase	Comments
<b>Part IV.F.1 - Watershed Restoration Assessment</b>				
CHEM 1	October 2016 to October 2017	September 2016 to December 2017	Pre-construction	Upstream station installed September 2016 and downstream station installed December 2016. Results and analysis reported in FY17 MS4 annual report.
BIO 1	March 2016	April 2016 to September 2017	Pre-construction	Monitoring performed annually in 2016 and 2017 to establish range for baseline. Results and analysis reported in FY17 MS4 annual report.
PHYS 1	April 2015	September 2017 to February 2018	Pre-construction	Monitoring performed annually in 2017 and 2018 to establish range for baseline. Results and analysis reported in FY17 MS4 annual report.
CHEM 2	October 2017 to October 2018	January 2018 to March 2019	Construction	Monitoring work extended and performed throughout the construction phase. Results and analysis reported in FY18 and FY19 MS4 annual reports.
BIO 2	N/A	N/A	Construction	Activity not to be performed during construction
PHYS 2	N/A	N/A	Construction	Activity not to be performed during construction but supplementary surveys conducted in July/August 2018 to evaluate changes resulting from severe flood event. Results and analysis reported in FY18 MS4 annual report.
CHEM 3	October 2018 to October 2019	April 2019 to April 2020	Post-construction	CHEM 3 completed April 2020; results and analysis reported with FY20 MS4 annual report.
BIO 3	March 2018 to March 2019	April 2019 to April 2020	Post-construction	BIO 3 completed in (spring & summer). Results and analysis reported with FY20 MS4 annual report.
PHYS 3	March 2018 to March 2019	April 2019 to June 2019	Post-construction	PHYS 3 completed in (spring) 2019. Results and analyse reported with the FY19 MS4 annual report.

**Table IV.F: Assessment of Controls Monitoring Schedules and Progress**

Monitoring Phase	Proposed Dates	Actual Dates	Construction Phase	Comments
CHEM 4	October 2019 to October 2020	April 2020 to June 2020	Post-construction	CHEM 4 partially completed but work stopped June 2020 and remaining activities have been deferred. CHEM 4 was planned to extend through April 2021. MDOT SHA has deferred reporting of results and analysis for the CHEM 4 monitoring phase. <b>MDOT SHA is requesting removal of this phase per Part IV.F.1.d.iii of the MS4 Permit.</b>
BIO 4	March 2019 to March 2020	April 2020 to June 2020	Post-construction	Benthic macroinvertebrate data collection and sub-sampling completed for BIO 4 during spring 2020 index period but taxonomic identification, data entry, and IBI calculation was not completed before work stopped in June 2020. Required BIO 4 stream habitat assessment and supplementary fish, crayfish, mussel, reptile, or amphibian sampling were planned for completion during the summer 2020 index period but have been deferred. MDOT SHA has deferred reporting of results and analysis for the BIO 4 monitoring phase. <b>MDOT SHA is requesting removal of this phase per Part IV.F.1.d.iii of the MS4 Permit.</b>
PHYS 4	March 2019 to March 2020	April 2020 to June 2020	Post-construction	Monitoring completed in 2020. Results and analysis, including the required hydraulic model, submitted with FY20 MS4 annual report.
<b>Part IV.F.2 - Stormwater Management Assessment</b>				
Year 1	January 2018 to October 2018	May 2018 to June 2018	Pre-construction	Monitoring completed with results and analysis reported in FY18 MS4 annual report.
Year 2	November 2018 to October 2019	July 2018 to June 2019	Pre-construction	Monitoring completed with results and analysis reported in FY19 MS4 annual report.
Year 3	November 2019 to October 2020	July 2019 to June 2020	Pre-construction	Monitoring completed with results and analysis reported in FY20 MS4 annual report.
Year 4	November 2020 to October 2021	Deferred	Post-construction	<b>Construction delayed until at least 2021.</b> Post-construction monitoring deferred.

In accordance with conditions in Parts IV.F.2 and V.A.1.b, MDOT SHA has provided Stormwater Management Assessment information in Appendix G to this FY20 MS4 annual report. As described in Section F.2 of the FY19 MS4 annual report, the construction schedule for the MDOT SHA-owned BMPs referenced in the MDE-approved monitoring plan for Stormwater Management Assessment is integrated with and dependent on the construction schedule for a Howard County bridge replacement project. MDOT SHA has fulfilled its Stormwater Management Assessment monitoring obligations by monitoring for at least two full years during the pre-construction period. MDOT SHA did not commit to any construction phase monitoring activities in the MDE-approved monitoring plan for Stormwater Management Assessment.

MDOT SHA performed continuous flow measurements throughout the pre-construction period and evaluated the effects of continuous flow on channel geometry in its previously submitted MS4 annual reports. Hydrologic and/or hydraulic modeling was not performed in the fourth year

of the MS4 Permit term in accordance with conditions in Part IV.F.2.c because the pre-requisite BMP construction did not initiate during the current MS4 Permit term.

## Program Funding

In accordance with conditions in Parts IV.G.1 and V.A.1.c of the MS4 Permit, MDOT SHA has provided program funding information in the FiscalAnalysis table of the MS4 geodatabase submitted with this FY20 MS4 annual report. **Table V.A.1.c** below contains a supplemental summary of this information. In accordance with conditions in Part IV.G.2 of the MS4 Permit, adequate funding has been maintained to ensure compliance. Cumulative MDOT SHA expenditures across the permit term (FY16 through FY20) total more than \$516 million, averaging \$103 each FY with above average expenditures reported for the last 3 years of the permit term.

**Table V.A.1.c: MS4 Expenditures for FY20 and Proposed Budget for FY21**

Fund	FY20 Expenditures (Millions*)	FY21 Budget (Millions*)
Fund 82 – TMDL/MS4	\$84.7	\$49.3
Fund 74 – Drainage	\$13.4	\$2.8
Fund 49 – Industrial	\$2.0	\$0.1
Operations/ Maintenance	\$10.9	\$6.5
<b>Totals:</b>	<b>\$111.0</b>	<b>\$58.7</b>
*Funding numbers are rounded to nearest \$0.1 Million		

As described in Section G of the FY19 MS4 annual report, MDOT SHA does not impose fees or generate funding for watershed protection and restoration and all MS4 funding is sourced from the State Transportation Fund. The significant budget reduction for FY21 reported by MDOT SHA is a consequence of impacts to the State Transportation Fund and the budget cuts described in the Introduction section to this FY20 MS4 annual report.

National Pollutant Discharge Elimination System  
Municipal Separate Storm Sewer System  
Permit No. 11-DP-3313 MD0068276  
Permit Term October 9, 2015 to October 8, 2020

## Fifth Annual Report October 9, 2020

# Appendices

:

Maryland Department of Transportation  
State Highway Administration  
Office of Environmental Design  
707 North Calvert Street, C-303  
Baltimore, MD 21202



## List of Appendices

**Appendix A:** MDOT SHA NPDES MS4 FY20 Program Organizational Chart

**Appendix B:** Stormwater Preventative Maintenance Inspections and Remediation Summary

**Appendix C:** Illicit Discharge Detection and Elimination Program Summaries

**Appendix D:** Public Education Programs

**Appendix E:** TMDL Compliance Progress

**Appendix F:** Watershed Restoration Assessment of Controls

**Appendix G:** Stormwater Management Assessment of Controls