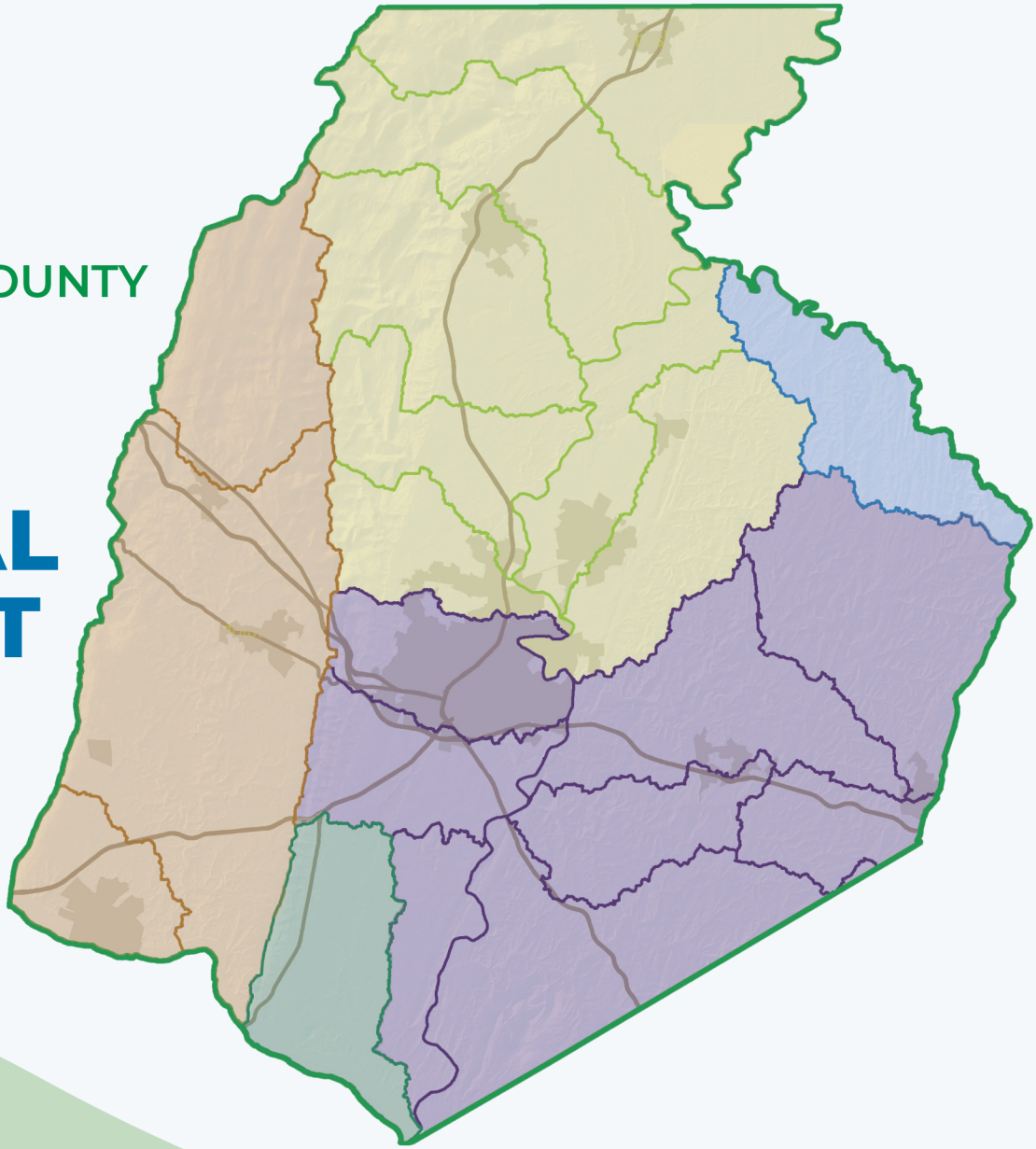
National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit



FREDERICK COUNTY
MARYLAND

2024 ANNUAL REPORT

Published by the
DIVISION OF ENERGY & ENVIRONMENT
Department of Stormwater

Contents

Tables

Figures

Introduction

The submission of this annual progress report to the MDE fulfills requirements specified under the Frederick County NPDES MS4 Permit No. 22-DP-3321, MD0068357. This will be the County's second report under the fifth-generation Phase I NPDES MS4 permit, which went into effect December 30, 2022; this permit expires December 29, 2027. This progress report covers programs in effect within the annual reporting period for FY24 (July 1, 2023 – June 30, 2024).

The County completed the requirements of the fourth-generation permit and continues to excel in stormwater management, long-term watershed monitoring, watershed assessment, restoration and retrofit implementation, developing Geographic Information System (GIS) data, and conducting public outreach activities in accordance with the requirements of the permit. NPDES funding remains adequate to meet the conditions of the permit.

Like previous reports, this is a data-driven report with the majority of program information included in the accompanying database, supplements, or as appendices to the main document. Thirteen (13) appendices have been included in this delivery. Contents of all appendices are available in the digital submission.

1 Permit Administration

In FY24, the Division of Energy and Environment (DEE) managed the County's NPDES permit. Additional intercounty personnel are responsible for other various permit components that support compliance with the permit. Staff and their responsibilities related to NPDES permit administration are listed below.

The County Executive's Office and the office of the Chief Administrative Officer are located at 12 E. Church Street, Frederick, MD 21701. DEE offices are located at 30 North Market Street, Frederick, MD 21701.

Office of the County Executive

- John Peterson, Chief Administrative Officer
  Oversees Budget Office, Financial Division, Human Resources Division, Interagency Information Technologies Division (IIT), Procurement & Contracting Office, Risk Management Office, Solid Waste & Recycling Division, Division of Energy & Environment, Water & Sewer Utilities Division. Supports permit compliance programs.

Frederick County Division of Energy and Environment

- Shannon Moore, Director, 240-608-7406
  Manages Office and oversees permit compliance programs.

- Donald Dorsey, Department Head Stormwater, 240-831-1975
  Supports and manages NPDES MS4 activities, Capital Improvement Project development and implementation.

- Jeremy Joiner, Project Manager IV, 240-831-1995

Supports and manages NPDES MS4 activities, coordinates watershed restoration efforts.

- Jacob Grove, Project Manager III, 240-695-2890
  Supports and manages NPDES activities, Capital Improvement Project development and implementation.

- Linda Williamson, Project Manager III, 240-608-7426
  Supports and manages NPDES activities and programs, manages County's reforestation program, coordinates BMP maintenance projects for stormwater and reforestation efforts.

- Kim Campbell, Project Manager I, 301-712-5928
  Supports and manages NPDES activities, coordinates Industrial Discharge Permits for stormwater and pollution prevention programs.

- Benjamin Green Project Manager II, 301-471-8705
  Supports and manages NPDES activities, Capital Improvement Project development, Countywide Stream Assessment, and Assessment of Controls Monitoring.

- Suzanne Cliber, Program Specialist, 240-385-7226
  Supports NPDES activities, coordinates watershed restoration efforts related to grants.

- Leann Nizzardi, Administrative Specialist, 301.600.1416
  Administrative support for the Division of Energy and Environment.

- Emily Gorsky, Administrative Specialist, 240-578-3773
  Administrative support for the Division of Energy and Environment, Stormwater Department.

- Ayodeji Adesuyi, GIS Analyst, 240-741-3540
  Supports and manages NPDES Database.

- Robert Cramer, Environmental Inspector, 240-549-2428
  Supports all Alternative BMP Restoration Project Inspections.

Division of Planning and Permitting (DPP), Department of Permits and Inspections (DPI)

- Eric Dodson, Engineering Supervisor Environmental Compliance, 301.600.3507
  Manages Sediment and Erosion Control Program, supervises collection of information for NPDES permit that includes grading permits and stormwater facility maintenance inspections. Jointly maintains database of stormwater management facilities with Nathaniel Krause and Vijay Kapoor.

- Matthew McGrew, Lead Environmental Compliance Inspector
  Provides stormwater facility maintenance inspections database.

- Douglas Cochran, Environmental Compliance Inspector
  Manages stormwater facility maintenance inspection database.

- Nathaniel Krause, Engineer III, 301.600.1137
  Maintains database of stormwater management facilities, and reviews stormwater management development plans related to the NPDES permit.

- Vijay Kapoor, Engineering Specialist III, 301.600.1560
  Reviews stormwater management development plans related to the NPDES permit. Jointly maintains database of stormwater management facilities, with Nathaniel Krause and Eric Dodson

- Emily Pearl, Administrative Coordinator
  Reviews plans and permits.

- Staci Rosenberger, Permit Coordinator
  Reviews plans and permits.

Division of Planning and Permitting (DPP), Department of Planning

- Kim Gaines, Livable Frederick, Director of Planning

- Andrew J. Stine, Livable Frederick Principal Planner I
  Coordinates planning activities related to the NPDES permit.

- Karin Flom, Livable Frederick, Principal Planner II, 301.600.2508
  Coordinates planning activities related to the NPDES permit.

In addition, DEE staff also collaborates with the Division of Solid Waste and Recycling (DSWR), the Division of Public Works (DPW), the Division of Parks and Recreation (DPR), The Division of Emergency Management (DEM), Environmental Health Services Department, County Legal, and Interagency Information Technologies (IIT) Division. Figure 1 and Figure 2 provide Program and County Organizational Charts for reference.

Permit information is included in the related table Permit Info of the MDE_NPDES_MS4 geodatabase.

Figure 1 - Frederick County Division of Energy and Environment (DEE) Organizational Chart

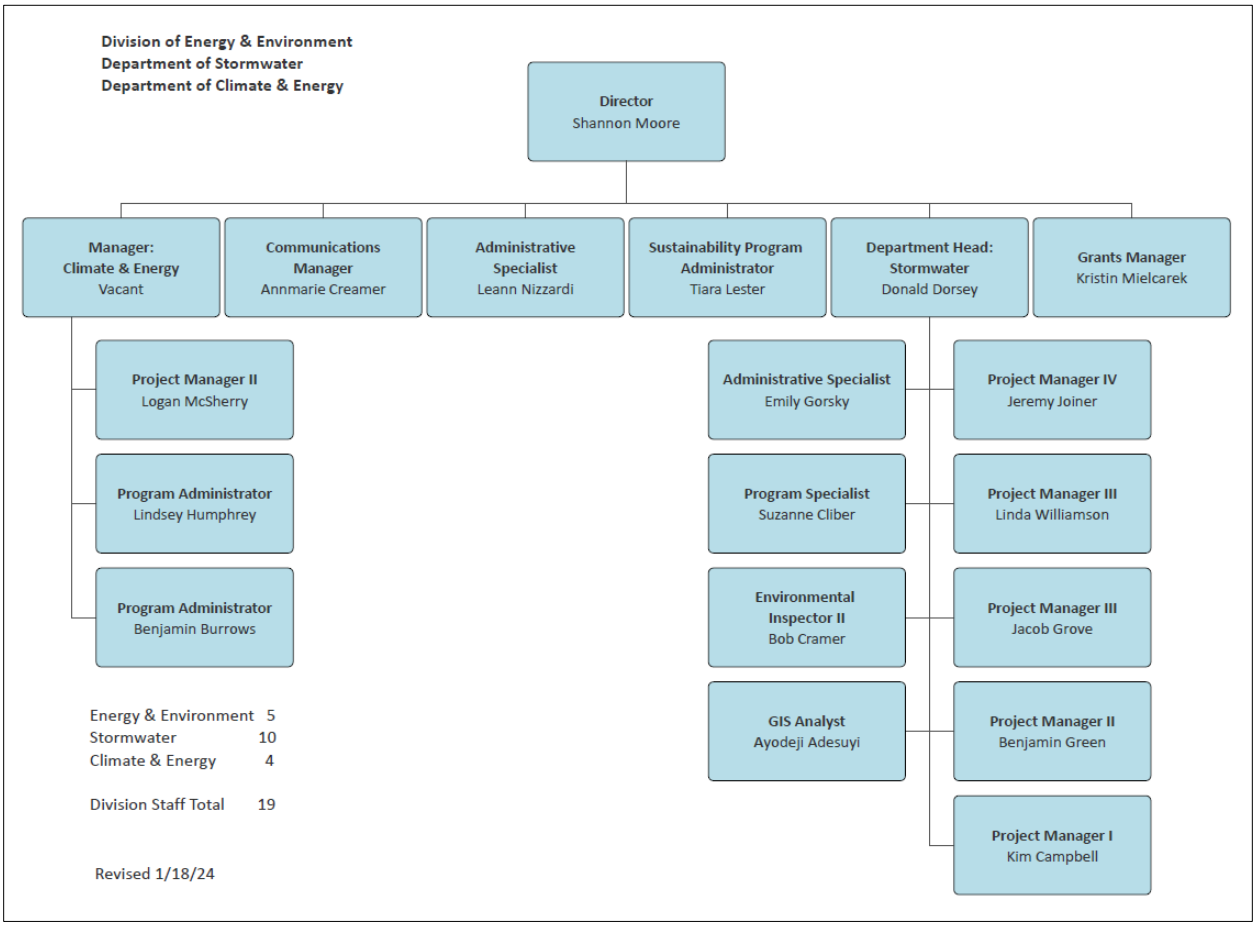
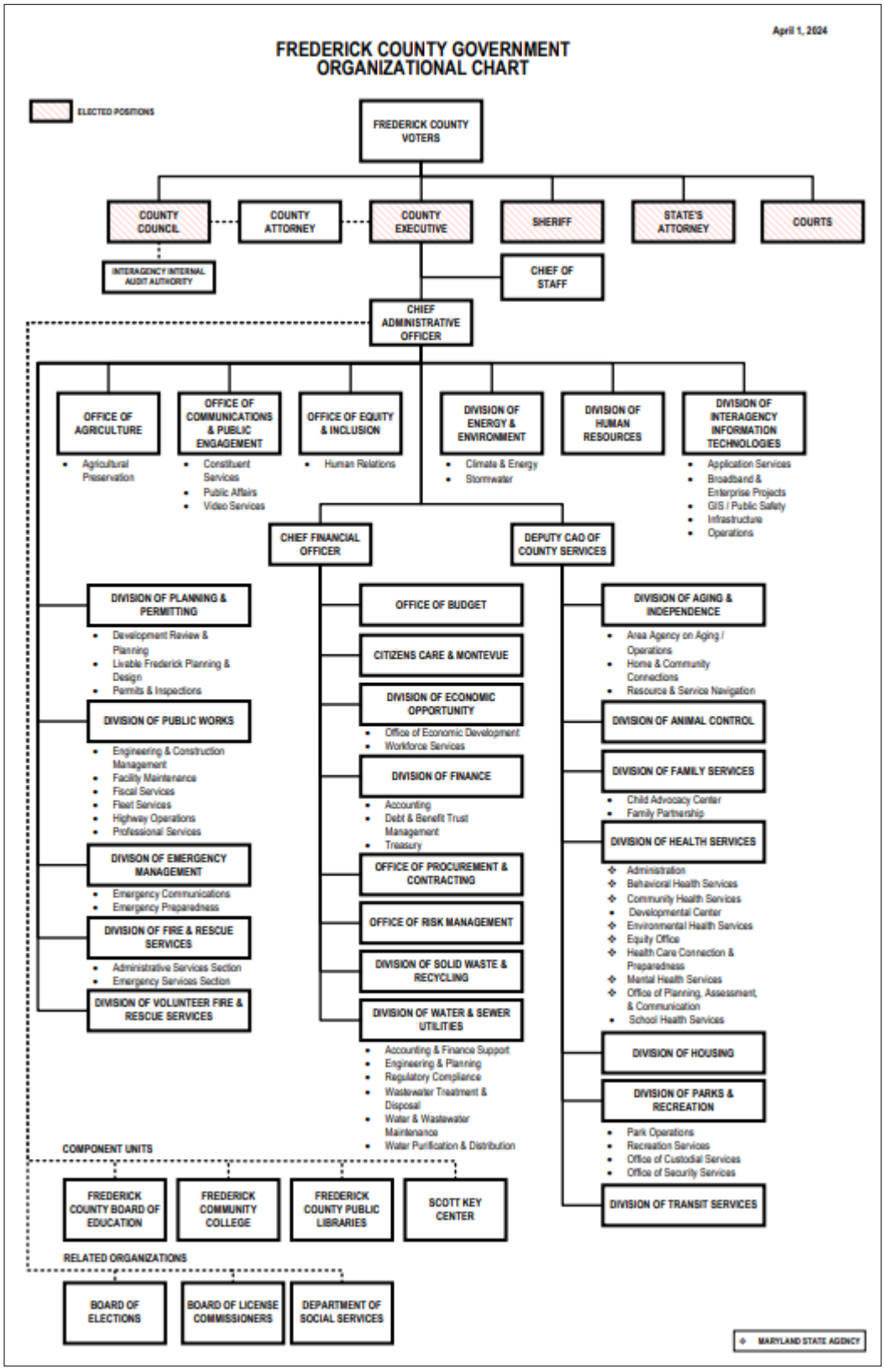


Figure 2 - Frederick County Government Organizational Chart



2 Legal Authority

Appendix A includes a letter from Senior Assistant County Attorney, Kathy Mitchell, certifying that the County has the legal authority to meet the requirements of its permit.

3 Source Identification

This section documents permit-required efforts under Parts IV.C. 1 through 6. Frederick County has collected source identification data on all permit-required topics. The County has a centralized County GIS office within the IIT Division. This approach includes centralized functions such as the development and maintenance of core data layers, development of data standards, system administration, and general oversight of GIS activities countywide. Frederick County GIS distributes countywide base maps and Orthophotography. In addition, Frederick County GIS offers a free GIS data download service that includes GIS Base Data, Orthophotography, Contour-Planimetric Data, and Parcel Data. This service can be found on Frederick County's website, "Download GIS Data". As the County transitioned into its fifth generation MS4 permit, the county migrated to MDE's revised Geodatabase template.

The Frederick County GIS office continually progresses in enhancing the County's GIS capabilities and in compiling source identification data. DEE, DPP's Department of Permits and Inspections collaborated with Frederick County IIT and staff to develop and implement digital submission standards for improvement and as-built plan submissions.

3.1 Storm Drain System

The County currently maintains a Stormwater System database which includes data for stormwater inventory records for all infrastructure including culverts, storm drains, structures, ditches, outfalls, and ponds. Storm drain system data is contained within the Outfall feature class (1,717 records) and includes related drainage areas, and other related tables. Major attributes that are captured in these tables include IDs, structure characteristics, status, owner, and general comments. In addition to the required feature classes, Frederick County maintains a storm drain and structure inventory, which includes pipes (23,012 records) and structures (24,142 records). The storm drain system database is also provided as a supplement alongside this report.

3.2 Industrial and Commercial Sources

A list of the industrial and commercial facilities that the County has determined may have the potential to contribute significant pollutants is included in Appendix B. Information provided in this appendix includes: facility name, company, address, city, state, zip code, respective North American Industry Classification System (NAICS) code, and facility description. The County's commercial and industrial source database is also provided as a supplement alongside this report.

3.3 Urban Best Management Practices

At present, Urban Best Management Practices (BMPs) are included in the MDE_NPDES_MS4 geodatabase. Records for stormwater facilities will be included in BMP feature class and includes associated drainage areas and other related tables. Major attributes that are captured in these tables include structure ID, BMP type, BMP description, and acres treated. New facilities are entered into the database upon approval of the as-built survey. Table 1 provides a summary of BMPs.

Table 1 - Summary of BMPs

	Total	Active	Proposed	Removed	Last Inspection Failing
BMPs (New Development / Redevelopment)	2,792	2,757	-	35[1]	4
BMPs (Restoration / Conversion)	71	42	29	0	0
Total BMPs	**2,863**	**2,799[2]**	**29**	**35**	**4**

1. 31 completed Retrofits remain in the database as "Removed". **2022:** 3 baseline grass swales were removed. This was noted in the annual report and is being subtracted from Impervious Area Restoration progress throughout this permit term. **2023:** A dry pond built in 2000 was removed after a failing inspection. The County's Environmental Compliance and Stormwater Engineering Department noted that design improvements were never constructed, and any new improvement will require a new permit. **2024: None removed**
2. 2,794 BMP drainage areas are reported in the database. Remaining are newer facilities awaiting drainage area verification.

3.4 Impervious Surfaces

The MS4 boundary and impervious surfaces of both public and private land cover delineated, controlled and uncontrolled impervious areas based on Maryland's hierarchical eight-digit sub-basins have been compiled for Frederick County. Impervious data are included in the MDE_NPDES_MS4 geodatabase table, ImperviousSurfaces.

3.5 Monitoring Locations

The County maintains and updates, as needed, an inventory of biological and chemical monitoring sites. FY24 data is included in attached excel files. The County is working with MDE to begin utilizing its new data tables where possible; however as agreed upon by MDE, the County will be utilizing the previous permit generation's geodatabase table to capture the required chemical monitoring data. Further notes are found in the Assessment of Controls section of the Annual Report. Major features that are captured in these tables include site ID, date and time, assessment results (e.g., BIBI/FIBI, habitat scores, water quality measurements), monitoring drainage area, and general comments. Historical data is also provided in the tables referenced above. As executed on September 11, 2023, the County opted to participate in the Pooled Monitoring Program option for MS4 permit required Watershed Assessment Monitoring. Additional information is described in the Assessment of Controls section, discussing the County's participation in the bacteria and chloride pooled monitoring for the remainder of its Permit term.

3.6 Water Quality Improvement Projects

The County maintains a geodatabase where water quality improvement projects are identified and tracked. The built and programmed improvement projects are included in the MDE_NPDES_MS4 geodatabase and summarized in Table 2. Additional information about these projects can be found in the Stormwater Restoration section of this report as well as the TMDL Implementation Plan (Countywide Plan) and/or the most recent Financial Assurance Plan. Figure 3 provides a map of all the County's water quality improvement projects.

Table 2 - Completed and Planning Improvement Projects

MDE Feature Class	Completed	Last Inspection Failing	Planning	Total
Riparian Forest Buffers and Urban Forest Plantings (AltBMPPoly)	119	0	31	150
Stream Restoration and Outfall Stabilization (AltBMPLine)	271	0	22	293
Septic Pumping, Septic Denitrification, and Septic Connections to Sewer (AltBMPPoint)	14,455	-	-	14,455

The County has also conducted watershed studies, identifying, ranking, and grouping potential opportunities within its watersheds. Upper Monocacy and Lower Monocacy watershed studies were complete in 2017, and the remaining three watershed studies, Catoctin Creek, Double Pipe Creek and Potomac Direct watersheds, were complete in 2019. During this permit term, Frederick County anticipates updates to its Lower and Upper Monocacy watershed assessments. Figure 4 provides a map of the watershed assessments completed and two planned updates in Frederick County.

Figure 3 - Watershed Restoration Projects

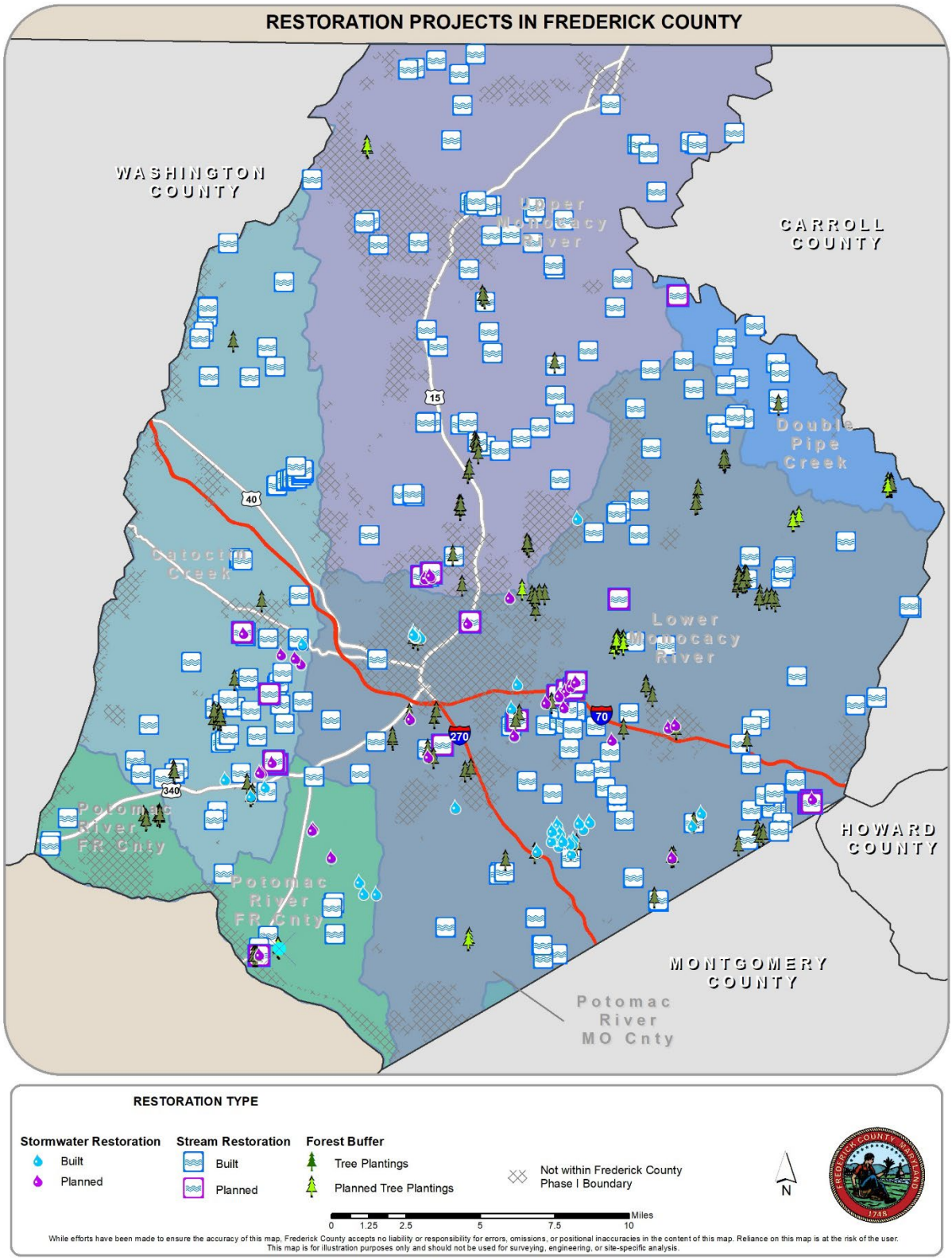
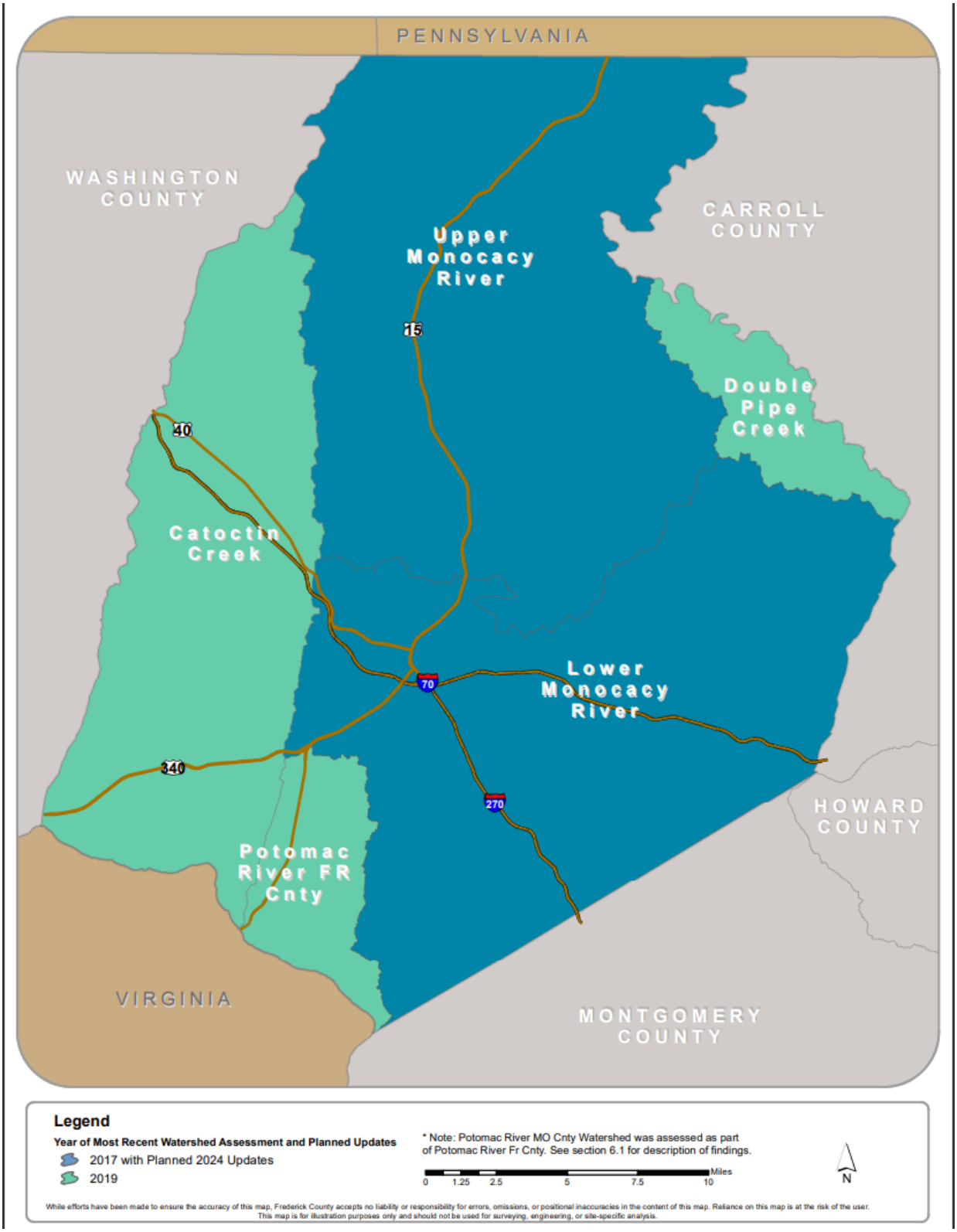


Figure 4 - Watershed Assessment Completed by Year



4 Management Programs

This section documents permit-required efforts under Parts IV.D. 1 through 5. Frederick County continually evaluates its stormwater management programs to identify and bring about needed improvements as required under its NPDES permit. The County continues to evaluate its progress and effectiveness to control stormwater discharges to the maximum extent practicable (MEP). Current program components, improvements made during the timeframe covered in this report, and plans for future activities, particularly as the County continues to implement management programs under its new permit, are discussed below.

4.1 Stormwater Management Programs

Frederick County maintains its current Stormwater Management Program in compliance with Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland. The County continues to do so through:

- Implementing stormwater management design policies, principles, methods, and practices found in the latest version of the 2000 Maryland Stormwater Design Manual (Effective October 2000, Revised May 2009, MDE 2000), including through the Stormwater Act of 2007.
- Maintaining programmatic and implementation information related to the stormwater management program.
- Maintaining construction inspection information according to COMAR 26.17.02, of all ESD treatment practices, structural stormwater management facilities, and stable stormwater conveyance and capacity to receiving water, at least on a triennial basis.
- Conducting preventive maintenance inspections, according to COMAR 26.17.02, pf all ESD treatment systems. Structural stormwater management facilities and stable stormwater conveyance and capacity to receiving water, at least on a triennial basis.

- The County approved 78 concept plans, 91 site development plans, and 87 final development plans. There were 0 exemptions or waiver requests approved. Additionally, there were 5 redevelopment plans approved.
- The County conducted 783 triennial maintenance inspections and issued 172 correction notices and 4 violation notices. These are increases from FY2023

4.1.1 Implementing SWM Design Policies, Principles, and Methods

Frederick County utilizes the latest version of the 2000 Maryland Stormwater Design Manual to ensure compliance with the Stormwater Management Act of 2007 (Act) to implement environmental site design (ESD) to the MEP for all new and redevelopment projects. The County tracks progress towards satisfying the requestions of the Act, included in this annual report. Any problems or modifications necessary to implement ESD to the MEP are noted. Lastly, the County reports annually on modifications that have been made or need to be made to all ordinances, regulations, and new development plan review and approval processes to comply with the requirements of the Act.

4.1.2 SWM Programmatic and Implementation Information

Frederick County Department of Permits and Inspections, Department of Permits and Inspections (DPI) is responsible for tracking programmatic and implementation Information. Concept, site development, and final plans are reviewed and tracked through the County's land development tracking software,

Infor. The programmatic information is reported in the SWM table in the geodatabase. This includes the number of:

- concepts, site development, and final plans received and number of those approved.
- redevelopment projects received and number of those approved.
- stormwater exemptions issued.
- and type of waivers received and issued.

4.1.3 Maintenance Inspections of Stormwater Management Facilities

The Department of Permits and Inspections, Department of Permits and Inspections (DPI) conducts a program of preventative maintenance inspections of constructed and functioning stormwater management facilities located within Frederick County, and most of its municipalities. Excluded from DPI jurisdiction are facilities located within Frederick City, and within the municipal boundaries of Mount Airy. As required under the County's MS4 permit, the County conducts these inspections on a sequential basis of once within a year after the as-built drawing approval, and then on a triennial basis thereon in perpetuity.

Responsible parties of noncompliant facilities receive notices that outline the failings observed by the inspector, what must be completed to correct the failings, and a timeframe in which the corrections should be completed. Appropriate follow-up inspections and escalating enforcement techniques are completed, as necessary, until compliance is obtained. Frederick County is continuing to improve the process of enforcement to ensure that owners comply and resolve failing facilities within an acceptable timeframe. Staff within DEE have helped to improve tracking and response in relation to data management. Statistics below aid in showing that the County performs follow-up inspections and coordination to obtain compliance after a facility receives a failing status. ECS has a total number of three inspectors, one of whom is dedicated to managing compliance for all stormwater management facilities within the jurisdiction of the County. The stormwater inspector is responsible for as-built and triennial inspections of BMPs, database management, documentation, and providing support to the development community.

For the fiscal year of FY24, Frederick County's Urban BMP database has 2,799 BMP records that are active. Table 3 summarizes the triennial inspections that were completed from 7/1/23 through 6/30/24. Correction notices are sent when a triennial inspection fails and tallied at the time of reporting. Facilities that have not been corrected by the time of reporting are considered violations.

Table 3 - Inspection Summaries FY24

Description	Total Inspections
Maintenance Inspections	783
Correction Notices *(Facilities that failed a triennial inspection)*	172
Violation Notices *(Facilities that are still failing)*	4
Outstanding failures from FY23	1
Number of BMPs overdue for Triennials	0

Failing BMP Summary

Frederick County has addressed seven of the eight previously failing BMPs from FY23 as described further in Table 4. The remaining failing BMP was noted by ECS: the repairs are costly, and they are working with the property owner to repair the outfall pipe. Table 5 outlines FY24 violation notices, along with corresponding details, and remediation actions.

Table 4 - Details for violations from FY23

BMP	Fail Date	FY24 Status
Jefferson Oaks (61)	1/26/2023	Costly outfall pipe replacement remains to be completed and ECS to continue to follow up.
Libertytown Plaza, ED Basin (85)	2/22/2023	**Passed -** 12/10/2024
Valley Excavating – ED Pond (423)	5/22/2023	**Passed -** 1/30/2024
Muddy River Farms, Sec. 1, Lots 1-17 (489)	5/16/2023	**Passed -** 7/24/2024
Aspen Systems – ED Pond (524)	5/19/2023	**Passed -** 7/18/2024
Riverview Plaza - SWM Pond #1 (553)	8/24/2023	**Passed -** 2/27/2024
Church of the Redeemer - Dry Pond (562)	3/30/2023	**Passed -** 12/10/2024
Welsh Run (264)	12/14/2023	**Passed -** 10/29/2024

Table 5 - Details for violations in FY24

Local BMP ID	BMP Name	Num BMPs	Date of Fail	Comment
525	Omega Center SWM Pond B	1	2/8/2024	Maintenance is currently in process.
746	Twn Meadowridge Subd Pond 1	1	2/12/2024	Maintenance has been scheduled.
636	Stanford Ind Park L2 Wet Pond	1	5/6/2024	Partial work complete. Remainder has been scheduled.

ECS is also responsive to concerns that may be found at stormwater facilities during the County's various yearly IDDE inspections. As noted in Section 4.3, the Department received three inspection requests from the IDDE program to evaluate further to determine if additional action is needed.

All inspections are recorded within a proprietary Permitting and Development Review application, Infor – an upgrade from the previous software that occurred in 2019. The latest inspection for each BMP is exported from the database using select and parameter queries from an outside data management software. The subsequent data is then imported into the geodatabase.

4.1.4 Maintenance Inspections of Restoration Stormwater Management Facilities and Alternative Practices

Frederick County extends its program of preventative maintenance inspections to its restoration stormwater management facilities and its alternative practices. ECS continues to inspect stormwater

retrofit facilities, and DEE supplements any other alternative and MS4-specific inspection and maintenance needs. All sites have been inspected in the past three years, and none are currently failing. Summaries of FY24 inspections for restoration activities are provided in Table 6.

Table 6 - Maintenance Inspections of Restoration Facilities FY24

Type of BMP	Number of Completed Sites	Number of Inspections performed in FY24	Number of Failing Facilities FY24
Stormwater	42	11	0
Streams	271	13	0
Tree Planting	119	45	0

Inspection results for each practice are recorded in the geodatabase tables: BMPInspections and AltBMPInspections. Crediting information for these BMPs can be reviewed in Section 6.

4.2 Erosion and Sediment Control

In FY2024, the County reported on 126 active grading permits, including 42 grading permits issued in FY2024. The active sites comprised a total disturbed area of 2,162 acres. The County also reported 7 stop work orders, 216 violations, 0 court cases and collected $0 in fines.

Frederick County's Erosion and Sediment Control Program is administered by the Department of Permits and Inspections, Department of Permits and Inspections (DPI). DPI utilizes inspectors that are specifically knowledgeable in Environmental Compliance inspection and enforcement to maintain an acceptable Erosion and Sediment Control Program in accordance with Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland. The County's program was evaluated by MDE on December 15, 2023, and has been granted delegation of authority effective through June 30, 2026.

ECS continues to receive budgetary support for equipment and automation, such as:

- Four-wheel-drive (4WD) vehicles,
- Full mobile connectivity through use of Dell rugged tablets for field work,
- iPhone mobile cell phones with hard cases, and
- Hands-free devices are also provided for in-vehicle use.

Continued program enhancements include:

- Division of Planning and Permitting (DPP) engineering and inspection staff working closely with the local Soil Conservation Districts (SCDs) to conduct a joint approach to sediment control and stormwater management plan review. The mutual efforts to obtain Environmental Site Design to the Maximum Extent Practicable (ESD to the MEP) should prove successful in producing better designed plans. In addition, The County and SCD engage in quarterly meetings to discuss current projects and processes. Discussions remain in progress

to incorporate SCD into the County's digital plan review process using the recently adopted Land Management software.

- DPP, and the County in general, striving to improve relationships with builders, developers, and related professionals by providing an open and interactive process in which every opportunity is given to receive input on ways to improve or enhance programs. ECS is also taking part in quarterly Permitting Outreach Meetings to establish relationships with the development community, and to inform and discuss permit processes.
- The Engineering Supervisor/Environmental Compliance attending bi-weekly meetings with the Permits and Inspections (P&I) Director, Permits Services Manager, and fellow Chief Inspectors of other disciplines. This interaction provides input and feedback from all parties and has proven to be extremely helpful and beneficial.
- Continuing to meet the needs of the state and the expectations of its citizenry to be environmentally sensitive and proactively protective of our natural resources; and
- Participating in professional development opportunities through seminars and workshops, hosted by MDE and other certified agencies.

Erosion and sediment control data for FY24 are included in the MDE_NPDES_MS4 geodatabase. Related tables include ErosionSedimentControl and QuarterlyGradingPermits. Major features that are captured in these tables include ID, contact information, permits issued/active, number of inspections, number of fines, number of violations, and general comments.

4.2.1 Responsible Personnel Certification Classes

As originally reported in Frederick County's 2015 Annual Report, MDE confirmed that the RespPersonnelCertInfo table reporting requirement is eliminated.

4.2.2 Construction Site Data

Frederick County ECS provides quarterly reports of all grading activities disturbing more than one acre to MDE to cross reference against their NOI records. The data submitted includes site name, site owner and address, the amount of disturbed area, the local grading permit number, site location, and the type of development (e.g., residential, commercial, etc.).

Evaluation: Frederick County's Erosion and Sediment Control program is well established and is constantly striving for improvement. The County's goal is to establish itself as a model for which the State, other delegated jurisdictions, and its citizens may be proud. Frederick County continues to work closely and cooperatively with the local SCD and MDE. The cooperative nature of that relationship has resulted in several policy discussions designed to improve and enhance the sediment control program. Through its quarterly reports, the County met requirements for the electronic reporting of earth disturbances in the period of 7/1/23 to 6/30/24.

4.3 The Illicit Discharge Detection and Enforcement Program

Frederick County:

- *Screened 112 outfalls.*
- *Dry weather flows were observed at 22 outfalls, only 3 of which were suspected of illicit discharge.*
- *Two of the dry weather flows suspected of illicit discharge were resolved with the property owner cleaning up the site and adjusting property management techniques.*
- *One of the suspected outfalls was found to not have any flow or standing water at the time of reinspection.*
- *All three suspected outfalls will be reinspected for the next two years to ensure verification of compliance is met.*
- *Performed 26 visual surveys of commercial and industrial areas.*
  - *19 were found to be hotspots with no violations.*
  - *7 were found to be hotspots with violations but have since been resolved.*

Frederick County continues to implement its Illicit Discharge Detection and Enforcement (IDDE) Program. The County's IDDE Program identifies potential illicit discharges in several ways: (1) through a systematic screening approach of outfalls that are more likely to demonstrate an elevated risk of illicit discharge, based on land use characteristics (the majority of sites were identified by this proactive approach); 2) through on-call (episodic) dry weather screenings of outfalls completed as a result of outfalls identified during as-built inspections, triennial maintenance inspections, or other County field work; (3) visual surveys of parcels with industrial and commercial land uses (hotspot surveys); and (4) through citizen and agency reporting mechanisms such as non-County agencies reporting spills to the National Response Center (NRC).

Frederick County proactively prepared itself with the new requirements in the fifth-generation permit. It submitted a plan and schedule for field screening the prioritized outfalls in its FY23 Annual Report. As part of the FY23 Annual Report comments, dated 7/2/2024, MDE accepted the process for which the County is taking for prioritizing outfall screenings and schedule for field screening prioritized outfalls over the permit term. For FY24, Frederick County continued to operate under the MDE approved plan and included its yearly technical memo outlining the process for FY24 found in Appendix C. The County has defined procedures for addressing IDDE and enforcement. These standard operating procedures (SOPs) are revisited annually. The County is expanding its commercial and industrial outreach materials, which can be used to inform not only the IDDE inspector but also to provide more photographed examples to assist each business manager/owner. With the recent approval of the Good Housekeeping Plan (GHP) by MDE, the County anticipates incorporating the collaborative joint effort between MDE, the participating MS4s, COG, and KCI, the consultant who assisted in developing the materials for the GHP. As noted in section 4.1.3, while during any IDDE field investigations, any potential maintenance of structures pertaining to a NPDES BMP were reported to ECS for evaluation.

A complete report of Frederick County's Illicit Discharge Detection and Elimination Program from 7/1/23 to 6/30/24, FY24, including screening methods and results, is included as Appendix D.

4.3.1 Systematic Outfall Field Screening

For FY24, the County relies on its active protocol submitted to MDE on December 29, 2017, and updated to adhere to Frederick County's new NPDES MS4 Permit, dated December 30, 2022. Frederick County has mapped all of its storm drain outfalls and associated drainage areas within the County MS4 jurisdiction using ESRI Geographic Information System (GIS) platforms. During the current permit term, this system was converted from ArcMap to ArcGIS Online. This transition allows for relevant data to be accessed in the field during outfall inspections to reduce the need for printed field maps and to streamline the outfall screening process.

The IDDE Protocols have been updated to better define how outfall inspections and hotspot visual surveys shall be chosen, performed, and recorded each reporting year. The County contracted with RK&K to conduct IDDE screenings (i.e., physical inspections and water quality testing) during the reporting period. In accordance with DEE's protocols, field inspectors noted evidence of dry weather flows, if present, at all outfalls selected as target sites, as defined below.

If flowing water was present in the network under otherwise dry conditions, inspectors documented conditions relevant to the discharge and sampled the effluent for a defined set of chemical constituents to include ammonia, temperature, detergents, phenols, pH, copper, and chlorine. Detergents, phenols, copper, and chloride are tested using a Hach Storm Drain Test Kit; ammonia is tested using a separate Hach test kit for Ammonia-nitrogen; temperature and pH are measured using a multiparameter probe. If analytical results or field inspections indicated potential illicit connections, the conveyance network contributing to the outfall, and surrounding areas were investigated to identify possible sources of pollution. A follow-up sampling event was conducted within 24 hours to retest the parameters that had exceeding screening criteria in the initial test. If the second assessment also indicated test results out of the accepted ranges, RK&K staff alerted County personnel via a written report of the findings. County staff then contacted the landowner or responsible party regarding the violation and the corrective actions. Follow-up inspections occur to ensure corrective actions were taken and the site is in compliance.

In the FY24 reporting period, the following areas within the County were targeted for systematic screenings: to the South and West of Frederick, including areas in the vicinity of Buckeystown, Adamstown, Jefferson, Ballenger Creek, and areas along Old National Pike, Urbana Pike, and Buckeystown Pike just south of Frederick City municipal limits.

During FY24, the results show that, of the 112 outfalls screened, twenty-two (22) had observed dry-weather flow. However, only three (3) of the twenty-two (22) outfalls tested for dry weather discharges had a concentration above the threshold limit. The remaining nineteen (19) outfalls that had dry weather flow but were not suspected of illicit discharge are considered to contain flow from a natural source. The County followed up with a site visit to each of the three suspected illicit discharge sites to ensure that the situation was resolved. Below is the following reinspection's for each of the originally suspected illicit discharge:

Suspected Illicit Discharge Outfall	Initial Inspection	Re-inspections	Resolved	Comments	Reinspection Fiscal Years
FR21OUT000042	1/4/2024 – Dumpster and grease trap area requires cleanup along with outfall pipe and outfall.	1/10/2024, 2/29/2024, & 4/18/2024	Yes	Dumpster, around the grease trap, and outfall pipe and outfall were all cleaned as of 2/29/2024. Follow up to verify proper property maintenance was conducted on 4/18/2024 which found a clean site.	FY25, FY26
FR19OUT000015	5/21/2024 – standing water found at outfall with high concentration of ammonia.	7/12/2024	Yes – no standing water found at outfall to test	No visible standing water or dry weather flow at outfall to test for suspected high ammonia. Site was clean leading to outfall.	FY25, FY26
FR24OUT000219	5/22/2024 - standing water found at outfall with high concentration of ammonia.	5/28/2004, 7/10/2024, & 9/17/2024	Yes	Outfall material was properly removed, and new material was replaced. Updates to property maintenance was reevaluated by property manager.	FY25, FY26

Detailed results are included in the Illicit Discharge Detection and Elimination Program report in Appendix D.

Data pertaining to Frederick County's IDDE program are included in the IDDE table in the MDE_NPDES_MS4 geodatabase.

4.3.1.1 Results of Systematic Outfall Field Screening

Summaries of RK&K's screenings are included in the Illicit Discharge Detection and Elimination Program report located in Appendix D.

4.3.2 Episodic Outfall Field Screening

If dry weather flow is noted at an outfall during any other County activity, such as Stormwater Management Structure "As-Built" inspections, triennial maintenance inspections, or watershed assessments, the County's Division of Energy and Environment is notified within 24 hours. DEE then conducts an IDDE screening in the same manner as that detailed above in section 5.3.1, and in *Frederick County's Illicit Discharge Detection and Elimination: Response, Inspection, and Reporting Protocols* (RK&K, 2024; KCI Technologies, Inc., 2017).

During the FY24, no episodic outfall field screenings were required.

Data pertaining to Frederick County's IDDE program are included in the IDDE table in the MDE_NPDES_MS4 geodatabase.

4.3.3 Citizen and/or Agency Reporting

Information about how citizens can report illicit discharge or concerns is available online on Frederick County's IDDE information page:

https://frederickcountymd.gov/7569/Illicit-Discharge-Detection-and-Eliminat

Specific links are provided from this summary page to accommodate citizen reporting:

FCG-FixIT, https://www.frederickcountymd.gov/8235/FCG-FixIT - Easy to use mobile application that allows anyone to report a non-emergency issue to Frederick County, MD.

During the FY24 reporting period, twenty-five (25) potential illicit discharges were reported to the County through the external reporting mechanisms. All 25 potential illicit discharges were investigated and resolved using Frederick County staff, MDE, and other state agencies. A table summarizing the reports can be found at the end of Appendix D, IDDE Program Report.

4.3.4 Commercial and Industrial Facility Inspections

The County reviewed its commercial and Industrial source layer. It is also provided digitally as a supplemental geodatabase, as defined in Part IV. Section C. The County intends to realign its commercial and industrial inspection zones to coincide with outfall inspection areas, enhancing the comprehensiveness of inspections. Further details are described in Appendix C.

RK&K staff inspected twenty-six (26) selected Commercial and Industrial facilities during the reporting period. Of the 26 inspections performed, nineteen (19) sites received marks to qualify as hotspots with no violations (Table 7). Seven (7) sites received marks to qualify as hotspots with violations (Table 8). The seven sites with violations will be reinspected during the next reporting period. A map of the twenty-six commercial and industrial facilities inspected can be found in the program report alongside inspection documentation in Appendix D.

Table 7 - Hotspot Inspections – No Violations

Business Name	Address	Inspection Date
Applebee's	5613 Spectrum Dr	11/28/2023
Chase (formerly Uno's)	5449 Urbana Pike	11/28/2023

K & K Automotive	5850 Urbana Pike	11/28/2023
Longhorn Steakhouse	5744 Buckeystown Pike	11/28/2023
Mariachi Restaurant	5854 Urbana Pike	11/28/2023
Ruby Tuesday's	7385 Guilford Dr	11/28/2023
5273 Agro Dr	5273 Agro Dr	12/13/2023
Mullinix Grain & Fertilizer	5293 Agro Dr	12/13/2023
Frederick Grain & Fertilizer, Inc.	3810 Ballenger Creek Pike	12/13/2023
CHS Companies	5397 Agro Dr	12/13/2023
Frederick Building Supply	5399 Agro Dr	12/13/2023
White's RV Camper & Boat Storage	5394 Agro Dr	12/13/2023
RELS Landscaping Supply	5398 Agro Dr	12/13/2023
USPS - Point of Rocks Post Office	1597 Bowis Dr	12/13/2023
Point of Rocks Center	1595 Bowis Dr	12/13/2023
Builders FirstSource - Point of Rocks	4011 Rock Hall Rd	12/13/2023
Catoctin Kennel Club	4016 Rock Hall Rd	12/13/2023
Butler Tree Service, LLC	4039 Tuscarora Rd	12/13/2023
Capital Auto Center	5716 Buckeystown Pike	12/13/2023

Table 8 - Hotspot Inspections – Violations

Business Name	Address	Inspection Date	Violation Source
Chipotle	3278 Bennett Creek Ave, Unit A	11/28/2023	Uncovered Grease Bin.
Chipotle	5223 Buckeystown Pike	11/28/2023	Spills from waste containers. Uncovered Dumpster.
IHOP	5277 Buckeystown Pike	11/28/2023	Missing Dumpster Lid.
Jersey Mike's	3278 Bennett Creek Ave	11/28/2023	Uncovered Grease Bin.
Starbucks	5473 Urbana Pike	11/28/2023	Excessive Garbage. Dumpster leakage observed.
Gabe's Services - Prism Precast - American Truck Services	5294 Agro Dr	12/13/2023	Uncontained washwater from vehicle washing. Washwater eventually drains to onsite SWM facility.

Business Name	Address	Inspection Date	Violation Source
The Auto Spa Center	5718 Buckeystown Pike	12/13/2023	Dumpster leakage observed. Traces of soap observed on exit road and vacuum area. Most excess is captured by SWM facilities.

4.3.5 Spill Response

In FY24, Frederick County continued to respond to all citizen complaints of spills, as part of the County's overall Illicit Discharge Detection and Elimination program. DEE has developed a standard set of procedures that maintain consistency in reporting and referrals for minimal internal transfers, as part of the County's IDDE protocol. If a spill occurs within the MS4 boundary, and is not a hazardous material, sanitary sewer overflow, or septic system discharge, DEE will respond to the event and direct the property owner or responsible party on proper reporting and remediation measures. Follow-up inspections are conducted with varying timeframes based on the severity of the spill, documented internally, and reported to MDE, as necessary. Any spills reported to DEE are described above in Section 4.3.3.

Hazardous spill calls are forwarded to 911, where first responders are trained and equipped to handle such situations. For hazardous spills requiring evacuation, the Department of Emergency Preparedness has updated its Emergency Operation Plan, which includes annexes for emergency evacuation; triggers, escalations and evacuation plans; and HazMat response. The County also has a reverse 911 system to perform targeted calling based on georeferenced locations for localized problems like hazardous spills. The Fire Department coordinates the Local Emergency Planning Committee, required under the Superfund Amendments and Reauthorization Act (SARA) Title III.

Spills are also reported to the National Response Center (NRC). DEE will only report spills to the NRC with the understanding that the responsible entity has not already done so or plans to do so. Records for Frederick County in FY24 are also included in Table 9 (USCG, 2023 & 2024).

Table 9 - Reported Spills in Frederick County FY24

Date	Reported By	Address	Material Spilled	Suspected Party	Notes/Comments from NRC
7/21/2023	National Response Center	SD: Old Maine Line, Adamstown, MD	N/A	Trespasser	Caller is reporting the discovery of a deceased person located near the tracks. Caller stated the person committed suicide. the responding agency was Frederick County Sheriff's office.
1/3/2024	National Response Center	Interstate 70 Westbound,	Unknown	Unknown	Caller reported a release of an unknown material from a tractor trailer truck.

Date	Reported By	Address	Material Spilled	Suspected Party	Notes/Comments from NRC
		Frederick, MD			
3/18/2024	National Response Center	39.231609, -77.444931	Unknown	Dumping	The caller states that the srp places underwater pipeline to run wire. The caller state that while laying the pipe, the company has been releasing an unknown material into the Monocacy River.
4/10/2024	National Response Center	MM 26 I-270 S., Frederick, MD	Oil: Diesel	Unknown	The caller is reporting a release of diesel onto the road and into Bennett Creek from a tractor trailer truck that caught on fire. The cause of the fire is unknown at this time. The caller states that it is unknown if there was a trailer attached to the truck. The caller also states that there were no injuries or fatalities in this incident.
6/5/2024	National Response Center	11791 Fingerboard Road, Monrovia, MD	Gasoline: Automotive (Unleaded)	Unknown	Caller is reporting that a fuel hose was ripped off a gas pump and caused a discharge of gas onto the ground. The cause of the incident is unknown.

Source: (USCG, 2023, 2024)

Evaluation: Frederick County's Illicit Discharge Detection and Elimination program continues to put forth effort in identifying, eliminating, and documenting potential illicit discharges. DEE fulfilled its permit requirements for FY24: 112 dry weather screening inspections and no episodic inspection for a total of 112 outfall screening inspections conducted to meet the 100-outfall requirement. Episodic screening of suspect outfalls encountered during other County stream monitoring activities, reported by citizens as having potential pollutant discharges, noted by Environmental Compliance Section (ECS) field inspectors as having evidence of dry weather flow while performing as-built or triennial inspections, or otherwise identified by the County.

Data for Frederick County's IDDE program are included in the IDDE table in the MDE_NPDES_MS4 geodatabase.

4.4 Property Management and Maintenance

4.4.1 Municipal Facilities

There are eleven (11) Frederick County-owned and operated facilities that are currently covered by the 12-SW/20-SW General Permit for Discharges from Stormwater Associated with Industrial Activities (Table 10). During the FY23 reporting year, Frederick County was under the 12-SW General Permit for Discharges from Stormwater Associated with Industrial Activities and MDE issued the final renewal permit for the General Permit for Discharges from Stormwater Associated with Industrial Activities later in that Fiscal Year for the County to be covered under the new 20-SW Permit. On November 18, 2022, MDE issued a final determination to the new General Permit for Stormwater Associated with Industrial Activity. The new permit, identified as 20-SW became effective February 1, 2023, and expires January 31, 2028. As part of the requirements of the final permit renewal, Frederick County must submit a Notice of Intent (NOI), fee, and SWPPP no later than July 31, 2023, to prevent a lapse in coverage. Frederick County successfully updated and submitted all NOI material to MDE on July 29, 2023. Frederick County MDE's Final Determination for the 20-SW was challenged in the Circuit Court for Baltimore County. In accordance with an order from the Circuit Court, the Department has agreed to a limited remand to accept comments on three specific sections of the 20-SW permit. The 20-SW remains in effect pending a final decision by the Department on these sections. The remainder of the 20-SW is final and not open for public comment. MDE's deadline for comments on this matter was Saturday, November 25, 2023, at 5pm.

Frederick County:

- *Trained 217 employees in property management topics.*

While under the previous 12-SW Permit and the current 20-SW Permit, all eleven facilities currently have updated Stormwater Pollution Prevention Plans (SWPPPs) to meet the new 20-SW Permit requirements. These SWPPPS will be continuously updated by SWPPP team members through redline edits. The identified SWPPP team members also perform quarterly inspections, and visually monitor the outfalls associated with the BMPs on their property. Annual trainings are presented through an online learning platform throughout the first half of the fiscal year or in person in October or November. Spills are reported and documented internally and MDE is notified as required. Since July 1, 2018, coordination of the General Permit for Stormwater Associated with Industrial Activity Permits (12-SW/20-SW) permit and its requirements are directed by DEE staff.

Table 10 - Notice of Intents (NOIs) with Permit Coverage through January 31, 2028

Facility Name	Permit Number	NOI Submitted	SWPPP Developed	SWPPP Complete	SWPPP Inspections Complete
Jefferson Copperfield Wastewater Treatment Plant	20SW2283	Yes	Yes	Yes	Yes
Ballenger McKinney Wastewater Treatment Plant	20SW1878	Yes	Yes	Yes	Yes
Reich's Ford Landfill	20SW2366	Yes	Yes	Yes	Yes
331 Montevue Lane (Frederick) Highway Operations Yard	20SW1890	Yes	Yes	Yes	Yes
Thurmont Highway Operations Yard	20SW1892	Yes	Yes	Yes	Yes
Johnsville Highway Operations Yard	20SW1891	Yes	Yes	Yes	Yes

Facility Name	Permit Number	NOI Submitted	SWPPP Developed	SWPPP Complete	SWPPP Inspections Complete
Myersville Highway Operations Yard	20SW2285	Yes	Yes	Yes	Yes
Jefferson Highway Operations Yard	20SW2291	Yes	Yes	Yes	Yes
Urbana Highway Operations Yard	20SW1893	Yes	Yes	Yes	Yes
Law Enforcement Center	20SW1942	Yes	Yes	Yes	Yes
Transit	20SW1888	Yes	Yes	Yes	Yes

This Annual Report SWPPP appendix contains the reporting documents from FY24, including NOI required information, quarterly inspections, annual training sign-ins from in-person training as well as logs from online training, spill response forms, and other relevant data (Appendix E). In the County's FY23 Annual Report, staff conducted two different training classes which totaled 449 attendees; of those attendees, there were 217 County staff. The County updated this value to reflect actual employees vs. attendees. Additionally, the County modified the FY24 trainings to provide SPCC and SWPPP trainings in one training for efficiencies.

Data in relation to industrial facilities managed for stormwater can be found in the Municipal Facilities feature class in the MDE_NPDES_MS4 geodatabase.

4.4.2 Good Housekeeping Plan

In FY23, Frederick County partnered with six other jurisdictions with the Metropolitan Washington Council of Governments (COG) to begin to develop the County's Good Housekeeping Plan (GHP) for County-owned properties not covered under Maryland's SW Industrial GP, where activities listed in the County's permit under Part IV.D.4.a are performed. The GHP scope of work issued through COG provided the County with template documents (namely, the Site Evaluation Checklist, Good Housekeeping Plan Template and appendices, and Good Housekeeping Plan Applicability Certification and its accompanying Guidance Manual). Efforts throughout the development of the GHP and templates were orchestrated with MDE being an active participant to ensure these efforts would meet the MS4 Permit regulatory needs. On April 18, 2024, MDE approved the GHP template documents and allowed the participating counties to progress to the next phase of the GHP requirements where County-owned sites are to be evaluated for applicability in FY25 (Appendix F). The County is on track to submit on its third year, FY25, its Good Housekeeping Plans outlying all applicable properties. Currently, the County identified 357 County-owned properties to determine whether the GHP is applicable to those properties.

4.4.3 Road Maintenance Activities

Frederick County:

- *Swept 810 lane miles of roads in FY24, collecting roughly 63 tons of material.*
- *Cleaned 46 inlets using a combination of vacuum technology and manual methods.*
- *Applied 12,561 tons of sodium chloride.*
- *Applied 119,885 gallons of salt brine.*
- *Applied a total of 5,782 gallons of liquid Caliber as a road salt additive and 666 tons of anti-skid material.*
- *Applied 11,200 pounds of rock salt at The County's Division of Parks and Recreation facilities during the winter months.*

During FY24, Frederick County continued to follow recommendations from its 2002 Assessment of Road Maintenance Activities (Versar, 2002). The objective of this study was to assess the effects of road maintenance activities on stormwater runoff and resulting impacts on surface water quality. The assessment evaluated current practices, analyzed alternative practices, and presented a plan to incorporate alternative practices into the County's road maintenance programs. Members of the County's Office of Highway Operations provided data and information on current practices and plans of the Department. Activities included in the evaluation were chemical usage in snow and ice removal, herbicide spraying for vegetation control, street sweeping, litter control, road surface maintenance, and maintenance of unpaved surfaces. The assessment report was submitted to MDE on June 11, 2002, and was found to meet NPDES permit requirements for developing a plan to reduce pollutants associated with road maintenance activities.

The activities the County Office of Highway Operations undertook during the reporting timeframe of 7/1/23 through 6/30/24 to reduce runoff pollution were:

1. Street Sweeping: A total of 810 lane miles of road were swept totaling 63.28 tons of material removed from roads in Frederick County. All curbed roads are swept at least once a year with some roads up to four times a year. All sweeping is conducted using a vacuum-assisted truck. Frederick County prioritizes closed-section main roads to be swept first followed by roads in developments. Once all sections are swept, the sweeping starts over with closed section main roads, etc. Complaints also drive prioritizations. In addition to complaint-driven sweeping, Highway Operations proactively sweeps bridge decks and other areas after deicing activities. When the Office of Highway Operations receives a complaint, the complaint is logged into a work order system and assigned to a foreman, and work is performed. Citizens either directly input complaints into the system through a link on the County's Highway Operations Department website; or the Office of Highway Operations secretary receives calls and enters information into the work order request system. Street sweeping data is recorded by the districts. Lane Miles and Landfill Weight by district are captured in reports from Highway Operations.

   Crediting of the street sweeping method for MS4 compliance by Frederick County was completed through FY21 by utilizing the Frederick County Street Sweeping Program: Reporting Methodology prepared by Versar in 2012 and approved by MDE via email on February 1, 2019. Conversations with MDE determined that additional street sweeping credits were not attainable through this method from FY22 onward as Frederick County's method does not meet the new Accounting Guidance requirements for street sweeping frequency. Discussions between MDE and Frederick

County culminated in an agreement that Frederick County showing consistent level of effort would be sufficient to retain the credits already achieved through street sweeping as this is an annual crediting mechanism.

2. Inlet Cleaning: All Highway Operations foremen began reporting inlet-cleaning statistics in 2004. A total of 46 inlets were cleaned in FY24. Inlet-cleaning statistics are reported in the quarterly reports under Drainage. Prioritization of inlet/pipes cleaned by the County are complaint-driven, using the same mechanism to report issues as street sweeping noted above. For more information, a written SOP was provided in the FY19 annual report and approved by MDE. In addition to inlet cleaning, Stormceptor cleanings are performed on a regular basis. Approximately 1/3 are cleaned each year by contractors for the County.

Evaluation: The County's Office of Highways and Transportation continues to implement the recommendations of the Road Maintenance activities and to experiment with new technology to reduce its activities' impacts on water quality.

Data in relation to street sweeping from Highway Operations can be found in the AltBMPPoly table in the MDE_NPDES_MS4 geodatabase.

4.4.4 Herbicides, Pesticides, Fertilizers

Because of concern for environmental health, MDE, through the requirements of NPDES MS4 Permits, requires local jurisdictions to evaluate their current uses of pesticides, herbicides, and fertilizers and to seek opportunities to reduce use of these materials. To address this requirement, during 2002-2003, Frederick County sponsored a study to characterize uses of pesticides, herbicides, and fertilizers by County agencies and to identify potential reduction strategies - *Recommendations for Alternatives to Pesticide/Herbicide/Fertilizer Use for Frederick County, December 17, 2003* (Versar, 2003).

Frederick County initiated this study in fall 2002 by surveying County divisions about pesticide, herbicide, and fertilizer use at all County-owned facilities and by all Frederick County Government agencies or departments. At the time, four County units were found to apply herbicides, pesticides, and/or fertilizers: (1) the Maryland Department of Agriculture's (MDA) Vector Control Program, which works in conjunction with the Frederick County Mosquito Control Program, (2) the Division of Parks and Recreation, (3) Frederick County's Office of Highway Operations, and (4) the Frederick County Weed Control Program.

Study results indicated that pesticide/herbicide/fertilizer use by Frederick County did not require any drastic reduction in application practices because County agencies had, in general, already minimized use of these chemicals, or were already using more environmentally acceptable substitutes. In most cases, the overall recommendation was to continue current chemical control practices, while considering possible biological and mechanical controls that could be used in place of, or in combination with, current practices.

A number of practices are already employed by County personnel to control the application of chemicals and, where possible, to use minimal amounts. Frederick County departments apply pesticides on an "as needed" basis. Fertilizer is applied one to three times per year at specific locations. Most of the departments surveyed indicated specifically that application rates were based on label instructions and were made at the lowest rate required for effectiveness.

While the County is developing the Good Housekeeping Plan and providing Stormwater Pollution Prevention Plan trainings, additional conversations are being had regarding how the County can further reduce pesticides, herbicides fertilizers, and finding opportunities to reduce or stop mowing where appropriate. Through the County's reforestation program, several reforestation sites are now beginning to have canopy closure where a reduction of pesticides, herbicides, and mowing can occur without jeopardizing the recently reforested area with invasive plants/varmints. Furthermore, on the privately owned reforestation sites, outreach and education al materials are distributed to suggest a similar approach for private residents once a canopy closure occurs where there will be a tapered need to mow while continuously inspecting the site for invasive plants.

Herbicide Use

Frederick County Weed Control Program, Frederick County's Division of Parks and Recreation, and Frederick County's Office of Highway Operations continue to monitor weather conditions around the time of herbicide application; applications are not performed if heavy rain is expected within 2 hours of application. The Weed Control Program continues to verify that application personnel are registered with the Maryland Department of Agriculture (MDA) Pesticide Regulation Section and are either licensed applicators or work directly under the supervision of one.

Frederick County Highway Operations has discontinued the use of the herbicide Pendulum, which is toxic to aquatic life, and has replaced its use of Razor with more environmentally friendly herbicides, which included Ranger Pro (a generic version of Roundup).

Summary of Chemical Application

Table 11 and Table 12 summarize chemical application from each department/program.

Table 11 - Herbicide Application Totals by Department/Program

Chemical Name	Total	Unit	Department/Program
Aminopyralid	0.08	gal	Reforestation
Pendimethalin	29.49	gal	Reforestation
Glyphosate	68.39	gal	Reforestation
2-4D and triclopyr	3.59	gal	Reforestation
3,5,6-trichloro-2-pyridinyloxyacetic acid, triethylamine salt	1.42	gal	Reforestation
Glyphosate 41	16,198.71	gal	Highways
Glyphosate	81.30	gal	Parks and Recreation
(phosphonomethyl)glycine	2.13	gal	Parks and Recreation
Clopyralid	0.38	gal	Parks and Recreation
glyphosate and diquat	0.63	gal	Parks and Recreation
clopyralid (41%)	11.25	gal	Weed Control
Glyphosate	5.07	gal	Weed Control

Table 12 - Pesticide and Fertilizer Application Totals by Department/Program

Chemical Name	Total	Unit	Department/Program
Bithor	38.36	gal	Property Management
D Force	0.25	gal	Property Management
Demand	15.23	gal	Property Management
Onslaught	73.34	gal	Property Management
Tekko Trio	36.56	gal	Property Management
Tempriel	0.38	gal	Property Management
Maki	5.62	gal	Property Management
Temprid FX	37.82	gal	Property Management
Greenbull	0.21	gal	Property Management
Orthene	5.63	gal	Property Management
Sumari Antgel	0.01	gal	Property Management
Terro Suite	2.00	unk	Property Management
Selontra	1.66	gal	Property Management
Contrac Blox	0.28	gal	Property Management
Advion Ant Gel	0.01	gal	Property Management
Alpine WSG	0.63	gal	Property Management
Nibor-D	0.16	gal	Property Management
Pyrocide 100	1.00	gal	Property Management
Bifen I/T	30.00	gal	Property Management
K	4,117.00	lbs	Parks and Recreation
N	2,760.00	lbs	Parks and Recreation
P	1,204.00	lbs	Parks and Recreation

Location of Herbicide, Pesticide, and Fertilizer Application

The County collects location and watershed information from chemical applications, when available. Percentage of application by watershed is in Table 13 for Highways and Reforestation. As would be expected, the Lower and Upper Monocacy River Watersheds are the largest watersheds in the County and contain some of the largest percentage of herbicide application.

Table 13 - Highway Operations and Reforestation FY24 Percentage of Herbicide Used Within Each Watershed

Watershed	Watershed Area (ac)	% of Herbicide Total by Highways	% of Herbicide Total by Reforestation
Catoctin Creek	77,062	16%	5%
Double Pipe Creek	123,396	3%	5%
Lower Monocacy River	194,683	29%	78%
Potomac River FR Cnty	43,101	6%	0%
Upper Monocacy River	156,498	24%	12%
Unknown		22%	
Grand Total	**594,740**	**100%**	**100%**

Evaluation: Various County Departments including the Maryland Department of Agriculture's (MDA) Vector Control Program, which works in conjunction with the Frederick County Mosquito Control

Program, the Division of Parks and Recreation, Frederick County's Office of Highway Operations, and the Frederick County Weed Control Programs continues to implement best management practices to reduce pesticide, herbicide, and fertilizer uses at all County-owned facilities to reduce its activities' impacts on water quality.

All herbicide, pesticide, and fertilizer use by County departments from 7/1/23 through 6/30/24, along with historical application, can be found in the Chemical Application table in the MDE_NPDES_MS4 geodatabase.

4.4.5 Winter Weather Activities

The County is proactively identifying opportunities to reduce the use of winter weather deicing and anti-icing materials, without compromising public safety. By the County's third year of the Annual report, FY25, the County will present its Salt Management Plan (SMP) which is based on the guidance provided on best road salt management practiced described in the *Maryland's Department of Transportation, State Highway Administration's Maryland Statewide Salt Management Plan,* developed and updated annually as required by the Maryland Code. Currently in FY24, DPW orchestrates a "snow rodeo" where staff and contractors learn how to maneuver their equipment to manually remove as much snow as possible and include general salt and brine application trainings. Similarly to FY23, the County had 100 staff, and 10 contractors trained during the snow rodeo. In FY25, the County is updating its training system, FCG Learn, to adjust to the training materials being developed through the Salt Management Plan. The County's DPW trainer reached out to Anne Arundel County's DPW and obtained and is actively reviewing their salt academy training materials to assist in developing the Salt Management Plan in FY25. The Salt Management plan will include:

- A plan for evaluation of new equipment and methods, and other strategies for continual program involvement.
- Training and outreach:
    - Providing County winter weather operator personnel and contractors an annual "Salt Academy" through either:
        - Local training with the latest techniques on deicer and anti-icer management, or
        - Providing participation administered by another MS4 permittee or State agency.
    - Developing and distributing best salt management practices outreach for educating residents within the County.
- Tracking and Reporting:
    - Beyond what is included in the County's Annual Report, the County will include in its fourth year, FY26, when storm events are occurring and deicing, or anti-icing materials are applied to County roads:
        - track and record the amount of materials used and snowfall in inches per event, if applicable; and
        - Report the deicing or anti-icing application by event or data, and the monthly and annual pounds used per lane mile per inch of snow.

In FY24, the County currently utilizes a deicing solution of Caliber M1000, which is a 30% Magnesium Chloride solution with an agricultural by-product, used in 48 of the County's trucks when the temperature is ≤ 25 ºF. The trucks are equipped with tanks that range from 90-120 gallons that apply the solution onto the salt mixture as it is spread onto the road. Overall, the County has 51 full-sized, ten-ton dump trucks and 14 smaller, one-ton dump trucks for deicing. The Caliber M1000 makes the salt mix more effective and reduces corrosion. The County does not use M1000 for de-icing at temperatures above 25 ºF. The M1000 is also sprayed onto the salt to pre-treat the roads, if the timing and conditions warrant.

According to product literature for Caliber M1000 (http://www.innovativecompany.com/products/winter/liquid-enhanced-liquid/caliber-m1000):

> "As a pre-wetting agent for salt and sand, Caliber M1000 reduces bounce and scatter, increases the speed at which the salt begins working, increases the melting capacity of the salt, and permits the use of salt at lower temperatures. Additionally, Caliber M1000 also reduces corrosion, inhibits crystal formation and product fallout at lower temperatures, and improves roadway traction when compared to other liquid products."

The use of deicers in FY24, by MDE watershed, is presented in Table 14 for Highway Operations. A total of 5,782 gallons of liquid deicer (Caliber M1000), 12,561 American standard tons of road salt (consisting of over 98.5% sodium chloride by weight), 119,885 gallons of liquid brine, and 666 American standard tons of anti-skid were used within the watersheds. The County's unique terrain complicates snow and ice forecasting, making documentation more challenging. The County utilized National Oceanic Atmospheric Administration (NOAA's) National Operational Hydrologic Remote Sensing Center's website, NOHRSC Interactive Snow Information (noaa.gov), to obtain the best seasonal accumulation for Frederick County. Based on this available data, the accumulated snowfall was approximately 6 inches in the lower portion of the County along Potomac River and up to 36 inches in our more mountainous western part of the County. It is strongly noted, there is no information on NOAA's website for freezing precipitation or overnight black ice conditions which warrant winter road treatment practices.

Prior to 2009, Highway Operations used cinders instead of anti-skid. The switch to anti-skid was the result of the suspension of distribution of bottom ash for winter road treatment to conform with Maryland Coal Combustion Byproducts (CCB) regulations. These regulations prohibit placement of CCBs in areas other than approved disposal facilities. As a result, Highway Operations began using an anti-skid material purchased from local quarries. It is a small, uniform size stone that contains very little dust/fine material. Thus far, the material has been working well. Starting in December 2008, one of the objectives of Highway Operations was to use more liquid deicer to use less salt. They are also pre-treating the roads, whenever appropriate, to apply material under the snow / sleet / ice layer so that frozen precipitation cannot bond to the road, which should result in a significant reduction in materials used. In addition, Highway Operations developed and implemented a Salt Management Plan to provide a framework to deliver safe, efficient roadway systems during winter storm events in a cost effective and environmentally sensitive manner.

In its review of the 2016 Annual Report, MDE, "requests that the County provide an assessment of how de-icing procedures are reducing the application of salt during winter weather." Frederick County responded in 2016 to a similar request and had examined whether the use of deicer (Caliber M1000) reduced the amount of road salt used during snow events. There did not seem to be a clear pattern in the use of these two techniques over time, in relation to the total amount of snowfall recorded in the County for the year. Additionally, Caliber was quite expensive. The County found that pretreatment with the brine allowed the County to use significantly less granular salt. The County invested significantly in this equipment after the end of FY17 and continues to implement brine technology during storm events.

Table 14 - Office of Highway Operations Use of Deicers by Watershed – FY24

Watershed	Gallons of Liquid Brine	Gallons of Liquid Caliber	Tons of Road Salt	Tons of Anti-Skid
Catoctin Creek	25,128.46	1,645.82	2667.33	2.00

Watershed	Gallons of Liquid Brine	Gallons of Liquid Caliber	Tons of Road Salt	Tons of Anti-Skid
Double Pipe Creek	4,000.00	240.00	422.42	
Lower Monocacy	43,455.77	1,533.55	4,759.53	30.00
Unknown		360.00	16.00	566.36
Potomac River FR CO	9,800.77	550.64	903.18	4.00
Upper Monocacy	37,500.00	1,452.00	3,792.84	64.00

Apart from Highway Operations use of de-icing agents, the Division of Parks and Recreation applied 11,200 pounds of ice melt during the winter months to ensure public safety to all visitors/staff while conducting business at County-owned facilities.

Data Collection: Frederick County transitioned to utilizing the Cartegraph data management system during FY23. This GIS based system allows for easier data collection and reporting mechanisms to better track work efforts and application of these winter weather materials.

Non-deicing applications: During FY24 Frederick County Highway Operations applied 40,150 gallons of a calcium chloride mixture (34% Calcium Chloride and 66% water) to dirt roads in five of the County districts. This application is targeted as a binding agent for the roadways to prevent erosion and dust rather than a winter weather practice.

Evaluation: The County's Office of Highways and Transportation continues to implement the recommendations of the Road Maintenance Report and to experiment with new technology to reduce its activities' impacts on water quality.

Data in relation to chemical application from Highway Operations can be found in the ChemicalApplication table in the MDE_NPDES_MS4 geodatabase.

4.4.6 Litter Control and Trash Elimination

Frederick County recognizes that increases in litter discharges to receiving watersheds have become a growing concern within Maryland. The County has evaluated current litter control programs, potential sources, and methods for elimination and opportunities for improvement. The County also has enhanced its public outreach program to address Litter and Floatables issues.

The County removed 90.58 tons of trash to meet its Permit requirements of 16.6 tons of litter removal per year.

The County removed tons 90.58 tons of trash for FY24. Table 15 provides the summary of trash removal activity in FY24.

Table 15 - Trash Removal by Division

Division	Tons of Trash Removed
Highway Operations "Adopt-a-Road"	4.42
Highway Operations Road Maintenance	85.16
Parks and Recreation and Volunteer Cleanups	1.00
County Total	90.58

4.4.6.1 Potential Sources

An Assessment of Potential Sources was completed for the 2015 half-year Annual Report, that included data from several sources, to include Stream Corridor Assessments (SCA); restoration monitoring; and the Frederick County Stream Survey (FCSS). The assessment determined that trash problems are not present along the entire lengths of stream networks in Frederick County, but instead may be attributed to trash "hotspots," or dumping sites since the problems are present in isolated locations. The dumping sites that received a severe trash rating in the SCA were located within agricultural, resource conservation, low density residential, and village center land use types.

DEE is currently working on an update to its Assessment of Potential Sources and Methods for Elimination using data from the latest FCSS and through collaboration with a variety of County departments, Municipalities, and State Highway on outreach and education regarding litter and floatables in FY24. Strategies will include:

- IDDE Good Housekeeping Plan to include trash inspection during routine outfall inspection visits.
- Providing outreach to Homeowner's Associations on litter education and resources for neighborhood/park trash cleanups.
- A Trash Reduction Campaign and Education Toolkit for residents available on DEE website.
- Continuing our partnership with Project Clean Stream as a supply hub for citizens interested in organizing litter cleanups.
- A Storm Drain Marker Volunteer Program, to raise awareness about waterway pollution and remind our community of the direct connection between our storm drains and our local waterways.
- Reporting ratings on average scores for observed trash levels, reported during FCSS monitoring within each of the 20 sub watersheds throughout the County. Data includes average scores ranging from 0 – 20, separated into qualitative bins describing levels of trash at monitored stream sites from "Poor" to "Optimal".

4.4.6.2 Methods for Elimination

Currently, DEE staff uses the following strategies as methods to eliminate litter and floatables throughout Frederick County's MS4 but will also be updating these in FY25:

- Industrial Discharge Detection and Elimination (IDDE) Program
- Public Outreach Programs; and
- Litter Control Programs

Information on Litter Control Public Outreach and Programs can be found in Section 4.5 Public Outreach and Education Programs.

4.5 Public Outreach and Education Program

The County conducted over 50 outreach activities not including social media posts.

In FY24, DEE staff continued to make impacts through the County's public outreach and education program. Frederick County addressed permit-suggested outreach topics and met its own goals and objectives from *The Strategic Plan to Improve Water Quality through Public Outreach in Frederick County, Maryland*, published in November 2003. Outreach activities are used to educate citizens, to direct the course of watershed plans, and to identify landowners for potential restoration activities. DEE enhanced its outreach materials to provide its citizens with needed educational touchpoints.

In addition to the permit requirements for outreach, other key County initiatives are also mentioned below that can be seen in the following sections, and in the summary of public outreach and education activities found in Appendix G:

- Outreach related to the Monocacy & Catoctin Watershed Alliance (MCWA) and Green Leader Brigade;
- Outreach related to the Green Homes Challenge (GHC);
- Outreach related to Residential Septic Pump-outs;
- Outreach related to Pet Waste;
- Outreach related to Stormwater Management;
- Outreach related to Watershed Assessments and;
- Other County Outreach Initiatives.

Highlights of the FY24 public education and outreach program include:

- **Outreach Events and Presentations**– DEE staff attended 30 community outreach events to engage with Frederick County residents and to share program information, tips, and resources for adopting an environmentally friend lifestyle. Community events also featured an interactive pet waste game and a tabletop map display "Do You Know Your Watershed?", to educate citizens on their watershed health and location.

- **Newsletters –** Published 3-4 times per year, our digital newsletter uses the Constant Contact platform to reach over 9,817 Frederick County residents and

contains updates on progress towards Frederick County's sustainability goals, announcements about local events, classes, and eco-programs, tips to help you conserve resources, save energy, and live sustainably, short stories about our staff, projects, and community, and ways to get involved with environmental stewardship.
https://www.frederickcountymd.gov/8586/Resources-Publications

- **Website and Social Media Outreach** – Our website https://www.FrederickCountyMD.gov/DEE provides information on permitted-suggested outreach along with our social media platforms:
  - **Facebook:** https://www.facebook.com/sustainablefcmd
  - **Instagram**: https://www.instagram.com/sustainablefcmd

- **FCG Fix-It** - This mobile app and web tool allows Frederick County Citizens to easily request help from various County divisions like Public Works, Planning, and Parks and Rec, or report complaints, spills, and illegal dumping into the County storm drain system. https://www.frederickcountymd.gov/8235/FCG-FixIT

- **Septic System Pump-Out Rebate Postcards** - Frederick County Government's Septic System Pump-Out Rebate Program provides residents and businesses a $75 septic pumping rebate every 5 years as well as educational materials for septic owners to better understand how to properly care and inspect their systems. Educational opportunities to share this information is available through mailing postcards, providing social media posts, providing educational packets to all approved Septic Haulers in Frederick County, and during outreach events.

- **Press and Media Relations** - DEE releases information to the press to keep the community up to date on stormwater program announcements.

- **Information Provided to the Regulated Community:**

  - **Assistance to Municipalities on MS4 compliance -** Staff routinely works with municipalities to help with elements of MS4 permit compliance including public outreach, illicit detection and elimination, source identification, and other topics. Some topics such as erosion and sediment control, plan review, and triennial inspections are covered by agreement with municipalities.
  - **Maryland Municipal Stormwater Association -** DEE staff served on the Executive Board of the Maryland Municipal Stormwater Association and worked to inform member jurisdictions on policy issues related to stormwater compliance.
  - **Metropolitan Washington Council of Governments -** DEE staff served on the Chesapeake Bay Policy Committee at MWCOG and shared Information with member jurisdictions on stormwater and Chesapeake Bay policy issues.
  - **Water Quality Technical Advisory Committee -** DEE staff served on the WQTAC, researched water quality trading program best practices, and developed policy positions on behalf of MACo.

Appendix G consolidates Frederick County media files of public outreach activities.

4.5.1 Outreach Related to Monocacy & Catoctin Watershed Alliance (MCWA)

As described in previous Annual Reports, the Upper and Lower Monocacy Watershed Restoration Action Strategy (WRAS) Steering Committees developed the Monocacy & Catoctin Watershed Alliance (MCWA or the Alliance) to continue outreach begun during the Upper and Lower Monocacy WRAS efforts and to begin implementation of the Upper and Lower Monocacy WRAS plans.

County staff continued to coordinate the Monocacy and Catoctin Watershed Alliance in FY24 to provide more networking opportunities for outreach and education and partnerships for restoration projects.

Partners involved in MCWA include but are not limited to:

- Local Organizations
  - Audubon Society of Central Maryland
  - Catoctin and Frederick Soil Conservation Districts
  - Catoctin Forest Alliance
  - Frederick County Forest Conservancy District Board
  - Catoctin Land Trust
  - Frederick County Conservation Club
  - Frederick County Master Gardeners
  - Local Citizens
  - Bar-T Mountainside Challenge & Retreat Center
- Regional Organizations
  - Potomac Conservancy
  - Potomac Watershed Partnership
  - Interstate Commission on the Potomac River Basin (ICPRB)
  - Center for Watershed Protection (CWP)
  - Potomac Valley Fly Fishers, Inc.
  - Chesapeake Conservation Corps
  - Trout Unlimited
- Funding Agencies
  - Chesapeake Bay Trust
  - Alice Ferguson Foundation
  - Maryland Dept. of the Environment/U.S. EPA Clean Water Act Section 319 (h) Program
  - Maryland Urban & Community Forestry Committee (MUCFC)
  - National Fish and Wildlife Foundation (NFWF)
  - Chesapeake & Atlantic Coastal Bays Trust Fund
- Educational Institutions
  - Hood College
  - Mount Saint Mary's University
  - University of Maryland Extension Office
  - Frederick County Public Schools (FCPS)
- Government Organizations
  - Frederick County Council
  - Frederick County Executive

- Frederick County Division of Planning and Permitting
- Division of Energy and Environment
- Comprehensive Planning
- Development Review
- Permits and Inspections
- Division of Public Works
- Division of Utilities and Solid Waste Management
- Health Department, Environmental Health Section
- Division of Parks and Recreation
- Sustainability Commission
- Municipalities in Frederick County
- Maryland Department of Natural Resources
    - Forest Service
    - Fisheries
    - Watersheds Program
    - Wildlife & Heritage Service
- Maryland Department of the Environment
- Cunningham Falls State Park
- National Park Service
    - Catoctin Mountain Park
    - Monocacy National Battlefield Park
    - Rivers, Trails and Conservation Assistance
- U.S. Environmental Protection Agency
    - Environmental Information and Analysis
- U.S. Fish and Wildlife Service

Public outreach efforts implemented by the Alliance during FY24 included quarterly meetings and updates to the Alliance website https://www.frederickcountymd.gov/7610/Monocacy-and-Catoctin-Watershed-Alliance and information on MCWA is also available in the DEE quarterly e-newsletter, expanding the Alliance's reach to more than 5,000 County households and/or Alliance partners and on MCWA's Facebook page Monocacy and Catoctin Watershed Alliance | Facebook.

4.5.2 Outreach Related to the Green Homes Challenge (GHC)

In addition to MCWA, DEE coordinates the Green Homes Challenge (GHC) program. The GHC combines proven outreach strategies and concrete actions in a unified, comprehensive approach that helps Frederick County residents adopt environmentally friendly practices, reduce energy use and utility bills, and use renewable energy.

The framework for the Challenge is a three-level Green Homes Challenge Certification Program; however, the educational, incentive, loan, and cooperative purchasing components are available to all whether or not residents choose to complete certification. The program incorporates incentives and behavior change strategies and is designed to meet the needs of people who like to do things themselves, prefer one-on-one mentoring, or are motivated by group participation.

The three Challenges and corresponding certification levels are:

1. **Be a Power Saver** -- Save Our Energy, Bank Your Money!

   Focuses on engaging and educating Frederick County households about the benefits of saving energy; emphasizes home energy audits, energy saving action plans, and retrofit projects.

2. **Be a Green Leader** -- Green Your Lifestyle, Protect Our Resources!

   Focuses on changes households can make related to their transportation, food choices, homes, yards, and offices that are environmentally friendly and reduce greenhouse gases. There are specific sections of this Challenge devoted to waste management, indoor and outdoor water conservation, and outdoor and yard maintenance practices to protect and improve water quality. This Challenge officially launched summer 2012.

3. **Be a Renewable Star** -- Renew Your Energy, Clear Our Air!

   Focuses on promoting renewable energy options through purchasing green power and renewable energy credits and installing renewable energy systems with assistance from grants and cooperative purchasing (Launched 2013). The outreach associated with the Green Leader Challenge focuses on improving water quality and addresses permit-suggested outreach topics.

   As of June 30, 2024, more than 2,600 households had registered with the Green Homes Challenge and 400 households had completed Green Leader Certification.

Evaluation: Frederick County continues to excel in public outreach. Not only has Frederick County addressed all of the suggested topics for outreach in the NPDES permit, it has also extended its public outreach strategy to meet restoration goals. Frederick County has greatly expanded its network through partnerships with local and regional organizations, particularly through the Monocacy & Catoctin Watershed Alliance. Agencies within Frederick County continue to educate the public about water quality through diverse programs.

4.5.3 Litter Control Public Outreach

To address litter control problems, and to develop a litter and floatables public education and outreach program in Frederick County, DEE is following the goals and objectives from The Strategic Plan to Improve Water Quality through Public Outreach in Frederick County, Maryland, published in November 2003. As part of litter prevention outreach, DEE staff is working with and supporting organizations that provide outreach and coordinate large and small-scale cleanups in Frederick County.

Frederick County's ongoing litter and floatables public education and outreach program includes the dissemination of outreach materials to the public that communicate the level of trash in Frederick County's streams, discourage littering behavior, and encourage individuals or groups to participate in trash cleanups. DEE staff developed materials specific to Frederick County and has incorporated additional litter prevention outreach materials into current outreach efforts required under the public education section of the permit (PART IV.D.6). Additional education and outreach are being implemented through print and digital media, advertisements, press releases, newsletter articles, and a resource webpage with the promotion of local trash cleanup events to encourage public participation.

DEE staff has developed an online webpage at Litter in Our Watershed to be used as a resource for promoting participation in existing trash cleanup events and coordination of new cleanups, and for educating the public on litter prevention in Frederick County. The webpage includes links to the websites of other organizations who host cleanup events, such as the Alice Ferguson Foundation. The Alice Ferguson Foundation (AFF) coordinates the Annual Potomac River Watershed Cleanup and has developed a Regional Litter Prevention Campaign toolkit as part of their Trash Free Potomac Watershed Initiative. The Regional Litter Prevention Campaign toolkit contains resources available for Frederick County to use for the County's public education and outreach program. The toolkit materials include advertisements and visuals, communication pieces, and community outreach pieces. DEE staff uses materials from the AFF toolkit that are appropriate for Frederick County's outreach efforts to reduce littering.

The Green Leader Challenge, one of 3 sub-challenges that make up the overall Green Homes Challenge, helps County residents adopt environmentally friendly practices. In the Green Leader Challenge, there are eleven (11) actions that educate and motivate Challenge participants to eliminate waste and litter, recycle, and compost. To date, nearly 2,600 individuals have registered with the overall Green Homes Challenge and 400 are self-certified as Green Leaders.

The Frederick County Department of Parks and Recreation hosts volunteer groups who are interested in doing litter cleanup projects in Frederick County parks. 318 volunteers assisted with trash cleanup projects in FY24 picking up 1 ton of trash.

The Frederick County Division of Solid Waste and Recycling (DSWR) coordinates a recycling education and outreach program that promotes recycling through community engagement, print and digital media, school presentations, and special events. The County has an overall recycling and waste diversion rate of 35.35% (MDE's County Recycling Rates by Commodity in Tons for Calendar Year 2021 from 2021 County Commodity Chart and has established a goal of achieving a 60% waste diversion rate by 2025. Fluctuations in the international recycling market can affect this rate. Four times per year, DSWM sends out useful information on the County's recycling program, including important updates, interesting facts, and tips for creating less waste. The Department of Solid Waste Management has information available on its website, Waste Management Trash and Recycling, for County residents on various landfill programs, such as disposal of household hazardous wastes, recycling, source reduction, and backyard composting. Appliances such as refrigerators, freezers, stoves, etc. can be brought to the recycling center on Reichs Ford Road free of charge. The continuation of current efforts in this program will be sufficient in meeting the permit requirements for recycling education and outreach and achieving the County's recycling goals. Residents also receive outreach education via the Recycle Coach app and social media about how to properly care for and use their recycling bins to prevent windblown trash.

Recycling Outreach (conducted by the Recycling Outreach Program Coordinator under DSWR) is ongoing and includes:

- Community Engagement: meet with community groups and provide presentations; present displays at public events.
- Digital Media: Facebook; e-newsletter; mobile app (Recycle Coach)
- Print Media: direct mail; newspaper and other advertising media (bus, billboard, etc.); press releases; articles for publications
- Schools: work directly with Frederick County Public Schools (FCPS) to increase awareness among

staff and students of waste and recycling issues; include private and home schools in any contests or promotions
- Special Events: conduct contests, drop-off events, award programs and other campaigns to bring attention to and increase support of County programs and goals.

The first phase of the Solid Waste Management Options Study was initiated to develop a long-term solid waste management strategy that is informed by and inclusive of county residents. Frederick County's Solid Waste Steering Committee held a series of workshops between November 2015 and February 2016 collectively called the "What's Next? Solid Waste Public Forums". The framework for evaluating the options generated by the public was built around criteria in the Maryland Recycling Act and Zero Waste Plan. Options recommended for analysis in phase 2 of the study include:

- Waste reduction program at County schools – Collecting food waste for composting, increasing recycling efforts, etc.
- Three-bin system for collection – waste collection would separate trash, recycling, and food waste.
- Food waste collection from restaurants – Commercial food waste would be collected for composting.
- Community-scale decentralized composting program – Food waste and other organic material would be collected for composting at small facilities. This could serve as a pilot for a large-scale operation.
- Development of a large-scale, centralized composting facility – A central countywide facility would process separated organic materials: primarily food waste, yard waste, and non-recyclable paper.

During Phase 2 of the study, a detailed analysis was completed of the viability of each recommended option from Phase 1, both individually and in combination with other appropriate options. The Phase 2 Report was completed (issued) June 30, 2017. Prior to completion, the Phase 2 Report was presented at a County Executive Town Hall meeting on June 2, 2017, and to County Council on June 27, 2017. Findings from the Phase 2 report will serve as a roadmap for the county to achieve recycling and waste diversion goals over the next ten years.

The County's Solid Waste Management Plan 2018-2037 is available online: https://frederickcountymd.gov/DocumentCenter/View/330456/SWMP_Senate-Bill-370_2020-11-25_Final_MDE-approved

4.5.4 Litter Control Programs

The following litter control programs throughout Frederick County are presented below.

- Project Clean Stream – Ongoing
  - DEE has partnered with the Alliance for the Chesapeake Bay's "Project Clean Stream" to serve as a supply pickup hub for residents who organize litter cleanups through Project Clean Stream.
- Adopt-a-Road Program – Ongoing
  - The Office of Highway Operations coordinates an "Adopt-a-Road" Program to help control litter along County roads. Section 4.4.6 provides the tons of trash removed by this program.
- Road Maintenance Activities – Ongoing

  - The Office of Highway Operations removes trash regularly during maintenance activities. Section 4.4.6 provides the tons of trash removed through this program. The Office of Highway Operations also conducts street sweeping and inlet cleaning and 87 tires were removed in FY24.
- Frederick County Health Department Nuisance Waste Ordinance – Ongoing
  - According to the nuisance waste ordinance, Frederick County's Health Department enforces illegal dumping that is reported by citizens or through DEE's IDDE program protocol.
- Frederick County Parks and Recreation Department - Ongoing
  - Parks and Recreation hosts volunteer groups for litter cleanup events. Section 4.4.6 provides the amount of trash removed through this program. DEE's Green Leader Brigade hosted two cleanup events in Frederick County's Ballenger Creek Park and Utica Park in FY24.

5 Stormwater Restoration

Frederick County:

- *Maintained 61.9 impervious acres in alternative practices*
- *Replaced 0.3 equivalent acres due to previously credited BMPs being removed.*
- *Completed all Watershed studies in previous generation permit term and will be updating the Upper and Lower Monocacy Studies.*
- *Completed 295.05 impervious acres (28.73%) towards the County's 1,027 impervious acres restoration goal by December 29, 2027.*
- *Developed a planned approach to implement restoration BMPS to meet 1,027 by end of Permit term.*
- *Ended previous Permit with no nutrient trades remaining.*
- *Developed Asset Management software to track alternative practices for triennial inspections.*

5.1 Annual Alternative Control Practices in Prior Permit

In the County's previous Permit, the County utilized 61.9 impervious acres in alternative practices. In FY24, the County continued to maintain the same level of Alternative Practices including 1,899 septic pumping systems and 528 lane miles of street sweeping. The County did replace 0.15 equivalent impervious acres with other practices due to five septic pumping credits having bad addresses that were credited in FY22. These are reflected in the geodatabase as being removed for record keeping this year. In FY22, 0.15 equivalent impervious acres were replaced with structural practices due to the fact that three existing grass swales that previously received credit had permanent modifications to them which will not allow credits to be maintained.

5.2 Annual Restoration

5.2.1 Watershed Study and Potential Opportunity Identification

Frederick County continuously utilizes adaptive management techniques to identify holistic and cost-effective potential restoration projects. Since the previous Permit, the County has developed a wide variety of Climate and Energy Action Plans, such as:

- Hazard Mitigation and Climate Adaptation Plan (HMCAP)
- Water Resource Element (WRE) of the County Comprehensive Plan
- Climate and Energy Action Plan (CEAP) for Internal Operations
- Climate Response and Resilience Report (CRRR)
- County Executive's Transition Teams Report

- County's Livable Frederick Master Plan

Furthermore, the County is developing a new Environmental Justice (EJ) lens to identify opportunities to improve underserved and overburdened communities in Frederick County.

DEE will be providing updates to its two oldest Watershed Studies, Lower and Upper Monocacy, to incorporate the variety of the climate and energy action plans listed above with an EJ lens on that data. It is recognized that many of these plans identify potential opportunities which can lead to a multi-prong collaborative process where pooling resources together will accomplish a far greater good to our constituents and the environment. DEE was excited to see this process commenced in FY24 and anticipates additional cost-effective projects to assist in meeting the County's MS4 Permit as well as continuing to reduce Stormwater Waste Load Allocations of TMDLs. Field investigations will commence in FY25 for the Lower Monocacy Watershed Study Update.

Frederick County completed all five Watershed Studies under the previous MS4 Permit, which included:

- Upper Monocacy River
- Lower Monocacy River
- Double Pipe Creek
- Catoctin Creek
- Potomac River – Frederick County

Additionally, Frederick County completed two smaller Spring Ridge and Ballenger Creek Feasibility Studies in FY23 and in FY24 and completed our Sigler Road and New Market Feasibility Studies to further identify potential opportunities. Watershed assessment documents are available on the Frederick County's website: https://www.frederickcountymd.gov/8125/Watershed-Assessment-Documents.

5.2.2 Restoration of 1,027 impervious acres

Under the County's fifth generation MS4 Permit, by December 29, 2027, Frederick County shall commence and complete the restoration of 1,027 impervious acres (~10%) that have not been treated to the MEP by implementing stormwater BMPs, programmatic initiatives, or alternative control practices in accordance with MDE's 2021 Accounting Guidance. The County is on target to meet this 10% restoration requirement for the current permit term.

Frederick County's compliance includes efforts to improve whole watersheds and communities that encapsulate our restoration activities. Following the guidance of our completed watershed assessments and feasibility studies, we have grouped restorations in specific areas of the county experiencing flooding, property damage and safety issues with the lens of EJ equitability. The design of these restoration groupings requires several years of time to complete and permit before construction can begin. Previous discussions between MDE and County officials helped DEE foresee the need for these co-benefit restoration projects and incorporate them into our overall compliance strategy to meet the current permit requirement of 1,027 acres of restoration completed by December 29, 2027.

The County notes in MDE's FY23 Annual Report comments:

"The Chesapeake Bay Program (CBP) expert panels recommend that an extensive project file be maintained for each stream restoration project. Specifically:

- *This should include as-built drawings, credit calculations, photos, post-construction monitoring, inspection records, maintenance agreement, and relevant data for all protocol calculations. This*

information is necessary for local jurisdictions to verify credit calculations and noted in Appendix C of the Department's 2023 Draft Supplement to Geodatabase Design and User's Guide.

- *For the first year a new stream restoration project is reported in the MS4 Geodatabase, the Department requests the County include more specific information describing pre- and post- site conditions, project design, and all credit calculations."*

The County does not have any new stream restoration projects in its MS4 geodatabase for FY'24. The County documents all the recommended project file documentation to justify the need for stream restoration projects actively being designed, under construction, and completed in its fifth generation MS4 Permit. These documents are provided throughout the design process of the stream restoration project and are submitted to the US Army Corps of Engineers and MDE's Wetlands and Waterways during its Joint Permit Application (JPA). The County looks forward to working with MDE to collaborate on a useful submittal of stream restoration documentation that meets their needs.

5.2.2.1 Suggested Restoration Benchmarking

In Part IV.E.4, MDE included additional restoration requirements in the form of "Benchmarking" in which MDE defined benchmark as:

> "a quantifiable goal or target to be used to assess progress toward the impervious acre restoration requirement (*1,027 acres by December 29, 2023*) or WLAs, such as a numeric goal for stormwater control measure implementation. If a benchmark is not met, the County should take appropriate corrective action to improve progress toward meeting the permit objectives. Benchmarks are intended as an adaptive management aid and generally are not considered to be enforceable."

Further clarification was provided by MDE in Part IV.E.7:

> "Frederick County shall use the annual restoration benchmark schedule provided in Table 17 below to achieve its impervious acre implementation requirement by the end of the permit term"

In Part IV.E.8.b MDE directs Frederick County to:

> "Evaluate progress toward meeting its annual restoration benchmark according to the schedule in Table 16 and adjust the benchmark appropriately based upon actual implementation rates and anticipated implementations rates for meeting the final impervious acre restoration requirement by December 29, 2027."

5.2.2.2 Restoration Status

Frederick County has followed the Permit directives for implementation of the 1,027 acres by end of permit term and tracking through assessment or implementation progress towards that goal. Accordingly, as directed, Table 16 below depicts the adjustments made to annual benchmarking.

Table 16 - Annual Benchmarking Adjustments

Targeted Percent of Goal Benchmarks		20%	40%	60%	75%	100%
Targeted Acres of Goal Benchmarks		205.40	410.80	616.20	770.25	1,027.00
Metric	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
New Permit Fiscal Years	FY22	FY23	FY24	FY25	FY26	FY27
Stormwater						

Wet Extended Detention (PWED)		86.62		68.53	27.03	140.99
Wet Pond (PWET)				20.48	22.79	
Sand Filter (FSND)		14.34		12.14		37
Submerged Gravel Wetland (MSGW)					3.16	
Stream Restoration		126.11		57.97	69.95	189.83
Outfall Stabilization				0.71		
Tree Planting	3.08	22.41	11.29	24.28	65.25	58.3
Septic Denitrification		4.16	1.76			
Septic Connections to WWTP		0.92	2.3			
Septic Pumping		2.72	19.64			
Credit Removed	-0.15	-0.15				
Restoration Acreage per Fiscal Year Complete	2.93	257.13	34.99	184.11	188.18	426.12
Cumulative Restoration Acreage Complete	2.93	260.06	295.05	479.16	667.34	1093.46
Cumulative Percentage Impervious Restoration Complete		25.32%	28.73%	46.66%	64.98%	106.47%

5.2.2.3 Adjusted Restoration Benchmarking

While Frederick County exceeded the recommended Annual Restoration Benchmark for FY23 of 20% by implementing 25.32% of its goal, in FY24, Frederick County completed 28.73% of its cumulative percentage of impervious restoration nd did not meet the 40% benchmark. As provided in the County's geodatabase, the County captured actual BMP implementation rates and their associated schedules for completion.

Several "real-world" factors transpired where adjustments to its recommended benchmarking schedule are necessary. These longer than anticipated project schedule implementations include, but limited to, the following factors:

- Providing well-thought-out holistic project designs and reviews at each project milestone to ensure project meets multiple needs.
- Engaging with project stakeholders and ensuring various public meetings are strategically scheduled to maximum public participation.
- Regulatory reviews.
- Contractual processes in developing Requests for Proposals (RFP), interviewing candidates, and securing design engineering firms and construction contractors.
- Delayed FEMA BRIC grant funding for the County's Point of Rocks Project.
- Securing property owner right of access agreements and temporary/permanent Restoration Project Easements.
- Staff vacancies in DPW.

Confidently, the County will meet its 1,027 impervious acre restoration goal by December 29, 2027 through utilization of a broad range of restoration practices within its toolbox. Frederick County prides itself on a diverse portfolio to meets its Permit as well as incorporating Environmental Justice, climate resiliency, and implementing projects/locations identified in its Hazard Mitigation and Climate Adaptation Plan. Based on these factors, the County has updated its FY24 Annual Restoration Benchmark Schedule to the following:

Table 17 - Restoration Benchmark Schedule

Metric	Year 1	Year 2	Year 3	Year 4	Year 5
Revised Cumulative Percent Impervious Acre Restoration Completed	25%	29%	47%	65%	100%
Cumulative Restoration Acreage Complete	260	295	479	667	1027

The County will meet the five-year requirement with no anticipated water quality trades. The County recognizes some projects may fall out due to site constraints or other factors beyond the County's control; there are backup projects ready to be implemented. Further details of the individual restoration credits can be found in the County's geodatabase and Appendix H.

5.2.3 Nutrient Trading

As reported in the County's FY22 Annual Report, the 365.74 Impervious Acre equivalencies in nutrient trading was replaced with additional projects and previously planted reforestation areas now meeting the 2-inch diameter at breast height requirement. Table 18 below (also provided in the previous Annual Report) provides the final impervious restoration credit by project type to meet the Permit impervious surface restoration credit requirements as outlined within the administratively extended MS4 Permit. The County did not have any nutrient trade credits remaining when entering under the new MS4 Permit issued on December 30, 2022. This section in future County Annual Reports will only report when the County anticipates any nutrient trading credits to finish out the five-year permit term.

Table 18 - Impervious Restoration Credit by Type to Meet the County's 4th Generation MS4 Permit

BMP Type	Total
Stormwater	
Micro-Bioretention (MMBR)	2.74
Rainwater Harvesting (MRWH)	0.05
Bioretention (FBIO)	1.70
Wet Extended Detention (PWED)	274.05
Wet Pond (PWET)	54.74
Sand Filter (FSND)	9.47
Submerged Gravel Wetland (MSGW)	40.02

BMP Type	Total
Stream Restoration	586.24
Outfall Stabilization	63.46
Tree Planting	525.05
Septic Denitrification	71.44
Septic Connections to WWTP	4.52
Septic Pumping	238.89
Vacuum Street Sweeping[1]	100.07
Redevelopment Restoration	8.59
Nutrient Trading	0
Total	**1,981.03**

1. Annual practice averages credit over 5 years

5.2.4 Future Stream Restoration Implementation, Inspection and Maintenance

Frederick County appreciates the dialogue with MDE regarding our existing and future stream restoration projects that assist the County in meeting its MS4 Permit and local and Bay TMDLs. While Frederick County is ensuring there is adequate inspections for existing stream projects after large storm events, it will be finalizing its Standard Operating Procedures (SOP) to solidify this commitment to MDE during this Permit term. Frederick County participated in the Chesapeake Stormwater Network's (CSN) Webinar on September 26, 2020, to enhance its stream restoration maintenance assessments. The County will be following the guidance from the Chesapeake Bay Program approved Memo, Recommended Methods to Verify Stream Restoration - Practices Built for Pollutant Crediting in the Chesapeake Bay Watershed, June 2018. Frederick County understands that initial quick maintenance adjustments save the County and stream significant repairs later if unchecked; thus, the County implemented in FY23 a new County-wide asset management system, Cartegraph, which relates to the NPDES geodatabase through ESRI's suite of applications to assist with project tracking and associated maintenance. In FY24, the County's investment into the Cartegraph system demonstrated the ease at which the required data could be incorporated into MDE's geodatabase.

Frederick County utilizes the November 2021 MDE Accounting for Stormwater Management Guidance document to revamp its programs to meet these requirements. Based on this information, County staff directed its consultants to provide all necessary monitoring requirements stated in the most recent guidance document effective immediately on all actively designed and under construction stream projects.

6 Countywide TMDL Stormwater Implementation Plan

Frederick County:

- *Provided an updated TMDL Stormwater Implementation Plan (Countywide Plan) as part of its Annual Report Submission.*
- *Will provide a variety of opportunities for the public to review its updated TMDL Implementation Plans online and will take public comments into consideration as it adaptively manages this plan.*

As a requirement of sections PART IV.F of the NPDES MS4 Discharge Permit issued by MDE to Frederick County, the County must submit a separate standalone TMDL Stormwater Implementation Plan (Countywide Plan) which shall annually document updated progress toward meeting TMDL stormwater wasteload allocations (SW-WLAs). Frederick County developed and submitted the *Frederick County Stormwater Restoration Plan* "Restoration Plan" to MDE in June 2016 which addresses 13 TMDLs for local waterways, two TMDLs for the Chesapeake Bay, and impervious area restoration. Development of the first plan in 2016 included a 30-day public review period and a comment/response document that addressed public comments was included as an attachment to the 2016 NPDES MS4 Permit Annual Report. The Restoration Plan was updated annually and included as an attachment to the County's Annual Report from 2017 through 2023. All yearly updates to the Restoration Plan were also made available to the public on the County's website. Frederick County is pleased to submit the FY24 Countywide Plan, based on MDE's guidance, which can be found in Appendix I. The Countywide Plan provides progress and planning updates to the County's previous Restoration Plan.

The BMPs outlined in this Plan are continually updated in the MDE geodatabase submission as projects are updated. MDE_NPDES_MS4 geodatabase tables with these updates include: AltBMPPoly, AltBMPLine, AltBMPPoint, and AltBMPInspections.

Frederick County's Countywide Plan demonstrates that Frederick County Government is on track to meet the restoration efforts required under its current permit and has a long-term plan to address its portion of SW-WLAs for all TMDLs in Frederick County. This Plan presents the projects and programs that will provide treatment towards its TMDL requirements.

Baseline, target, permit and current loads for nutrient, sediment, and bacteria local TMDLs are presented in the MDE_NPDES_MS4 geodatabase table LocalTMDLProgress. Countywide baseline, target, permit and current loads are presented in the MDE_NPDES_MS4 geodatabase table ChesapeakeBayProgress.

6.1 TMDL Implementation Plan's Public Participation

As required by Part IV.F.4 of the MDE NPDES MS4 Permit, continual outreach to the public and other stakeholders, including other jurisdictions or agencies holding SW-WLAs in the same watershed, regarding its TMDL stormwater implementation plans will remain a focus of the County. The County is soliciting input from the public, collaborating with stakeholders, and incorporating relevant comments which will assist it in achieving local stormwater WLAs. The following public participation includes:

1. Maintaining a list of interested parties for notification of TMDL development actions;
2. Providing opportunities to engage with the public through the County's website, social media, newsletters
3. Sending notices in a local newspaper indicating any 30-day public comment period for new TMDLs being developed;

4. Providing copies of TMDL stormwater implementation plans to interested parties upon request;
5. Allowing a minimum of 30-day comment period before finalizing TMDL stormwater implementation plans and documenting how the County provided public outreach and adequately addressed all relevant comment in their final TMDL stormwater implementation plans.

7 Assessment of Controls

BMP Effectiveness:
- *Monitored 9 storm events at both their in-stream and BMP outfall sites.*

Watershed Assessment Monitoring:
- *Continued Pooled Monitoring Program participation for bacteria and chloride.*
- *Conducted restoration monitoring at 5 stream sites.*
- *Conducted biological and habitat assessment monitoring at 61 sites.*
- *Received approval of biological and habitat assessment monitoring plan.*

PCB Source Tracking:
- *No TMDL tracking due to miniscule amount.*

Frederick County is utilizing MDE's *2021 MS4 Monitoring Guidelines: BMP Effectiveness and Watershed Assessments* (2021 Monitoring Guidelines) as a technical guide for meeting the MS4 Permit Requirements. The County is participating in the pooled monitoring for chloride and bacteria monitoring to provide a more-cost effective approach to answer those monitoring questions. Other remaining monitoring requirements under BMP Effectiveness and Watershed Assessment Monitoring requirements will be managed within the County. For PCB Source Tracking, due to the miniscule amount of PCBs in the Patuxent TMDL in the Mt. Airy region, the PCBs were too low to detect; therefore, as reflected in Appendix A of the MS4 Permit, Frederick County does not have a PCB TMDL and were not responsible for a TMDL plan for this pollutant in the Patuxent River Tidal Fresh watershed.

7.1 BMP Effectiveness Monitoring

During FY24, Frederick County has worked on several initiatives to monitor, assess, protect, and restore its watersheds. The County and its consultants conduct BMP Effectiveness monitoring, compile assessment results from the County's long-term monitoring site at Peter Pan Run, and summarize data collected from July 2023 - June 2024. The County has noted additional chemical parameters added/removed in the fifth generation permit and the 2021 Monitoring Guidelines within its Annual Monitoring Report (Appendix J).

The County notified MDE electronically on April 21, 2023 of its intent to continue BMP Effectiveness Monitoring within the Peter Pan Run Watershed to satisfy Part IV.G.1 of their NPDES MS4 Permit. The County met permit requirements by providing chemical, biological, and physical monitoring data and an Annual Data Submittal provided in Appendix J and in its NPDES Geodatabase submission.

The County's Watershed Restoration Assessment continued to focus on the Peter Pan Run watershed through targeted stream monitoring assessments including: physical, chemical, and biological data collected during designated index periods (Southerland et al. 1999, Morgan and Roth 2005). Year 2024 sampling included collection of water quality data, benthic macroinvertebrate and fish sampling, and quantitative physical habitat assessment using MBSS habitat and geomorphic data collection methods. In FY23, the County financially invested in updating their Quality Assurance Project Plans (QAPPs) for the

Biological and physical monitoring methods as well as the Water Chemistry monitoring methods and are included within our Annual Report submittal. These revised QAPP's were written by the County's consultant, KCI, and included newer monitoring equipment. They informed the new Peter Pan Run Monitoring Plan (Drescher et al 2023), and include continuous monitoring parameters of Temperature, pH, and Specific Conductivity. The new plan only includes the analytes required by the County's NPDES MS4 Permit, and excludes the additional metals monitored in FY20 – FY22. The QAPP for Biological and Physical Monitoring was last updated on August 2020 (Drescher et al, 2020), while the QAPP for the Water Chemical Monitoring was updated in November 2020 (Drescher et al, 2020). Both QAPPs are in the process of being updated based upon feedback on the monitoring plan received from MDE. The revised plan was modified to address new monitoring parameters to match MDE's requirements under the Chemical Monitoring section of the 2021 Monitoring Guidelines (Drescher et al 2023).

It was another exciting year for Frederick County during this monitoring period as all of the pond retrofits were previously completed and this was the third full year to capture the impacts these have on the watershed. Fortunately, weather patterns allowed Frederick County to exceed the required number of storm events sampled at the Peter Pan Run instream and Pond-R outfall stations, capturing nine events during the sampling period, July 1, 2023 through June 30, 2024. Statistical analysis of water quality data from Peter Pan Run shows that compared to FY2023 sampling, event mean concentrations of nitrate and nitrite increased, while TKN, phosphorus, and TSS decreased. TKN has significantly decreased after a spike in 2022 and 2023. TSS and Phosphorus have continued to decrease. BOD, TPH, and *E. coli* Event Mean Concentrations (EMCs) at the instream station have been variable with no statistically significant trends over time.

7.2 Watershed Assessment

In 1999, Frederick County initiated its original stream monitoring program, the goal of which was to identify and evaluate water quality problems in its priority watersheds and sub watersheds by conducting, on a rotating basis, stream monitoring using both biological and physical habitat methods. Monitoring was conducted every two to three years in the County's three highest priority watersheds: Lower Bush Creek, Ballenger Creek, and Lower Linganore Creek. This continued until 2006.

In 2007, the County conducted a pilot program that would serve as the basis for a new approach to stream monitoring that would begin to look at stream health throughout the County. Sampling at randomly selected locations was performed in the Bennett Creek and Catoctin Creek watersheds. Lessons learned in this pilot project were then used to refine the study design for a County-wide stream program. The County began the fourth County-wide round of monitoring, which will span 2023 – 2026. Reports for the first (2008 – 2011), second (2013 – 2016), and third (2018-2021) rounds are available upon request, and the third round report (2018 - 2021) is available to the public on DEE's website.

In 2008, the County officially redesigned its Frederick County Stream Survey (FCSS) monitoring program to include two separate monitoring efforts beyond the Watershed Restoration Assessment of the Peter Pan Run watershed: (1) targeted restoration monitoring and (2) County-wide, probability-based stream monitoring, with sites selected randomly and stratified by watershed. The targeted restoration monitoring effort for 2023 (July 2023 – November 2024) includes stream sampling at five targeted locations within the Potomac Direct, Double Pipe Creek, Lower Linganore Creek, Bennett Creek, and Carroll Creek watersheds in support of on-going and potential future restoration and community outreach efforts. Parameters used for monitoring at each location are selected on an individual project basis based on the projects' goals and any permit conditions issued by the regulatory agencies directly related to those

projects.

7.2.1 Watershed Assessment Monitoring Option

Due to the County's robust FCSS program, the County notified MDE electronically on April 21, 2023, of its intent to continue Watershed Assessment Monitoring via its FCSS program and to join the Pooled Monitoring Program to satisfy the County's requirements for monitoring bacteria and chloride as outlined in Part IV.G.2 of their NPDES MS4 Permit and 2021 Monitoring Guidelines. This submittal was acknowledged as received by MDE on April 28, 2023. Since submittal acknowledgment, the County has since entered into an agreement with the Chesapeake Bay Trust establishing Frederick County's participation within the Pooled Monitoring Program for bacteria and chloride monitoring. The Memorandum of Understanding (MOU) detailing the agreement was executed September 11, 2023, and is listed in Appendix K. The first payment, for participation in FY24, was made in November of 2023.

7.2.2 Watershed Assessment Monitoring Plan

The County submitted their Comprehensive Plan for Watershed Assessment and Trend Monitoring to MDE on April 26. MDE provided several recommendations, to which DEE responded on August 1. This response included submittal of the County's Sampling Analysis Plan (SAP), which contains an abbreviated QAPP that is referenced in the County's Watershed Assessment and Trend Monitoring Plan.

7.3 Assessment of Controls Annual Data Submittal

Monitoring sites and drainage areas for monitoring Assessment of Controls described in Section 7 is included in the in the MDE_NPDES_MS4 geodatabase in the following features and tables: MonitoringSite, MonitoringDrainageArea. Chemical Monitoring will be submitted as supplemental Excel workbook using the previous schema until new spreadsheets are provided by MDE. Biological Monitoring data is being provided as a supplemental Excel workbook in a new format. The annual Restoration Monitoring Report for 2024 is located in Appendix L.

7.4 PCB Source Tracking

For PCB Source Tracking, due to the miniscule amount of PCBs in the Patuxent TMDL in the Mt. Airy region, the PCBs were too low to detect; therefore, as reflected in the County's MS4 Permit, Frederick County does not have a PCB TMDL. Therefore, the County is not responsible for a TMDL plan for this pollutant in the Patuxent River Tidal Fresh watershed.

8 Program Funding

Frederick County has consistently maintained adequate funding to support the requirements of the NPDES program through its Operating and CIP budgets. This section outlines the budget from every fiscal year of the permit, including FY24. Expenditures for the year are presented in Appendix M.

The Operating Budget requires annual requests, with approval granted from year-to-year. Funds from the Operating Budget generally do not carry over from year-to-year. The CIP Budget noted here requires an annual submission, with approval granted from year-to-year.

The Operating budget for FY24 is $10,409,138, including $2,886,730 in the NPDES Pay-Go Operating budget, an estimated $1,104,579 for Pay-Go Operating within other Departments and Divisions, and

$6,162,325 in debt service payments. The Capital budget is $8,133,908. Grants were $69,186. The total NPDES budget was estimated to be $18,612,232.

The Operating budget for FY23 was $5,482,997, including $2,654,126 in the NPDES Pay-Go Operating budget, an estimated $2,550,632 for Pay-Go Operating within other Departments and Divisions, and $1,198,070 in debt service payments. The Capital budget is $5,570,829. Grants were $187,189. The total NPDES budget was estimated to be $11,241,015.

The Operating budget for FY22 is $5,628,629, including $2,195,896 in the NPDES Pay-Go Operating budget, an estimated $1,278,904 for Pay-Go Operating within other Departments and Divisions, and $1,876,266 in debt service payments. The Capital budget is $6,774,334. Grants were $273,936. The total NPDES budget was estimated to be $12,676,899.

More detailed information on budget allocations and costs are reported in the table FiscalAnalyses in the MDE_NPDES_MS4 geodatabase. Fiscal reporting for costs is based on the encumbrance method. Note that MDE's geodatabase excludes several permit categories to include Permit Administration, Legal Authority, and Source Identification. Several large efforts like the geodatabase and Annual Report are not included; the County has noted these expenses in comments. There is a timing lag between budgeting, encumbrances, and expenditures, which largely explains why the encumbrance numbers do not match budget numbers. The geodatabase reporting does not match the FAP/WPRP reporting because the requirements for these reports differ.

Maryland House Bill 987, "Stormwater Management - Watershed Protection and Restoration Program", was passed by the Maryland General Assembly in 2012 and codified into State law. This bill required all counties and municipalities that are subject to a Phase I NPDES MS4 Permit to establish a stormwater remediation fee; develop a Watershed Protection and Restoration Fund; and to submit a biennial report. Maryland Senate Bill 863, "Watershed Protection and Restoration Programs – Revisions" was passed in 2015 and added a requirement to the Annotated Code of Maryland ENV §4-202.1 for all medium and large NPDES MS4 permit holders to prepare a biennial Financial Assurance Plan (FAP) and Watershed Protection and Restoration Program (WPRP) Annual Report to demonstrate the financial wherewithal for meeting National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit requirements. The completion and submission of the FAP is required every two years on the anniversary date of the Permit issuance, with the first submittal due on July 1, 2016, and the next submittal due December 29, 2018; all subsequent submissions are due two years from the December date. The December 29, 2024, FAP spreadsheets were submitted to MDE with the MS4 Annual Report. This FAP provides approved MS4 program funding and execution for Fiscal Year 2024, with actuals for FY24 and projections from FY25 through FY29. The FAP had a 30-day open comment period from November 1, 2024, through November 30, 2024, with no comments received. Prior to County Council's public hearing, the FAP was announced in the Frederick News Post on December 7th and 14 of December 2024. The County Council, as the "local governing body," held a public hearing on 12/17/2024 and voted unanimously to approve the FAP. There were no public comments received A certification was signed by the County Executive on 12/18/2024 after Council Approval. FY24 Revenue and costs are $19,062,161. For the next two fiscal years (FY25-FY26), the revenue appropriated versus cost is 100%. This exceeds the 75% requirement. FY25-FY26 Revenue and costs are $47,222,668.

Frederick County developed a stormwater remediation fee to be fully compliant with HB987. The Board of County Commissioners (BOCC), on May 30, 2013, approved Ordinance 13-06-634 effective July 1, 2013 to create a one cent fee per eligible property to be charged on tax bills issued July 1. The County submitted

its first report to MDE by July 1, 2014. Proceeds from the fee were put into a Watershed Protection and Restoration Fund. The BOCC chose at that time to fund the majority of its compliance program for NPDES MS4 Permit No. 11-DP-3321, MD0068357 through the County General Fund. The Frederick County Council (Frederick County changed to Charter Government on December 1, 2014) has continued to authorize the collection of one cent per eligible property and is funding the majority of the Permit through General Funds, and to a lesser extent, general government bonds and grants. All proceeds from the stormwater remediation fee go to the Watershed Protection and Restoration Fund. The County collected $588.95 total in FY24. The majority of funding comes from the General Funds and from bonds; the level of expenditure is commensurate to other large and medium MS4s in Maryland. The Watershed Protection and Restoration Program (WPRP) was included in the County's public notice with its FY24 Financial Assurance Plan.

Evaluation: Frederick County maintains adequate funding to comply with all conditions of the MS4 Permit.

9 Special Programmatic Conditions

9.1 Water Resources Element

The Water Resources Element (WRE) is a required comprehensive plan element adopted in 2010 (Frederick County, 2010). The WRE provides a detailed presentation of the County's water resources as well as limitations and challenges to meet future population needs. With the adoption of the Livable Frederick Master Plan (LFMP) in 2019, the 2010 WRE was adopted by reference. The LFMP calls for an updated WRE in the near future. The WRE is divided into three assessments: drinking water, wastewater, and stormwater. The WRE is currently being updated utilizing the latest guidance from MDP and MDE with adoption anticipated in FY25. Under this new guidance, the WRE will examine equity and climate change impacts on water resources. Frederick County continues to correspond with MDE to ensure that sufficient context is provided for any pollutant load modeling for future impacts discussed within the WRE.

10 References

Chesapeake Bay Program approved Memo. June 18, 2019. Recommended Methods to Verify Stream Restoration Practices Built for Pollutant Crediting in the Chesapeake Bay Watershed, https://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2019/07/Approved-Verification-Memo-061819.pdf

Drescher, Nathan et. al. 2020. Quality Assurance Project Plan For Biological and Physical Monitoring in Peter Pan Run, Frederick County, Maryland. Prepared for Frederick County Office of Sustainability and Environmental Resources, Frederick, MD. KCI Technologies. August 2020.

Drescher, Nathan et. al. 2020. Quality Assurance Project Plan for Water Chemistry Monitoring in Peter Pan Run, Frederick County, Maryland. Prepared for Frederick County Office of Sustainability and Environmental Resources, Frederick, MD. KCI Technologies. November 2020.

EA 2016. Little Hunting Creek Watershed Assessment and Restoration Concept Report, Frederick County, Maryland. Prepared for Frederick County Community Development Division, Frederick, MD. EA Engineering, Science, and Technology, Inc., PBC. April 2016.

EPA. 2010. Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment, December 29, 2010. U.S. Environmental Protection Agency in collaboration with Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia. Region 3 - Chesapeake Bay Program Field Office. Annapolis, MD.

Frederick County. May 2004. Lower Monocacy River Watershed Restoration Action Strategy. Frederick, MD.

Frederick County. May 2005. Upper Monocacy River Watershed Restoration Action Strategy. Frederick, MD.

Frederick County. June 2016a. Financial Assurance Plan (FAP) and Watershed Protection and Restoration Annual Report (WPRP). Prepared by the Frederick County Office of Sustainability and Environmental Resources, Frederick, MD.

Frederick County. June 2016b. Frederick County Stormwater Restoration Plan. Prepared by the Frederick County Office of Sustainability and Environmental Resources, Frederick, MD.

Frederick County. 2010. Water Resources Element – A Functional Element of the 2010 County Comprehensive Plan. Adopted September 23, 2010. Prepared by the Frederick County Division of Planning, Frederick, MD.

Interstate Commission on the Potomac River Basin et. al. 2020. May 2020. Pub: # ICP 20-2, Pilot Analysis of Maryland Phase I MS4 Permit Water Quality Data. Prepared for Maryland Department of the Environment (MDE), Baltimore, MD. May 2020.

Maryland Department of the Environment (MDE). 2021. Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated – Guidance for National Pollutant Discharge Elimination

System Stormwater Permits. Maryland Department of the Environment. November 2021. Baltimore, MD.

Maryland Department of the Environment (MDE). 2017. TMDL Data Center. Retrieved from http://www.mde.maryland.gov/programs/Water/TMDL/DataCenter/Pages/index.aspx. Last retrieved on September 1, 2017.

Morgan, B. and N. Roth. 2005. Quality Assurance Project Plan for Biological and Physical Monitoring in Peter Pan Run and Other Selected Watersheds. Prepared by Versar, Inc., Columbia, MD for Frederick County - Division of Public Works. Frederick, MD. November 2005.

Perot, Morris et al. 2002. Watershed Assessment of Lower Linganore Creek Frederick County, Maryland. Prepared for Frederick County Division of Public Works. Versar, Inc. June 2002.

Perot, Morris et al. 2003. An Assessment of Stream Restoration and Stormwater Management Retrofit Opportunities in Lower Bush Creek Watershed, Frederick County, Maryland. Prepared for Frederick County Division of Public Works. Versar, Inc. August 2003.

Perot, Morris et al. 2005. An Assessment of Stormwater Management Retrofit and Stream Restoration Opportunities in Ballenger Creek Watershed, Frederick County, Maryland. Prepared for Frederick County Division of Public Works. Versar, Inc. August 2005.

Perot, Morris et al. 2006. An Assessment of Stormwater Management Retrofit and Stream Restoration Opportunities in Linganore Creek Watershed, Frederick County, MD. Prepared for Frederick County Division of Public Works. Versar, Inc. June 2006.

Roth, Nancy et al. 2001a. Final Report Watershed Assessment Of Ballenger Creek Frederick County, Maryland. Prepared for Frederick County Division of Public Works. Versar, Inc. January 2001.

Roth, Nancy et al. 2001b. Watershed Assessment of Lower Bush Creek, Frederick County, Maryland. Prepared for Frederick County Division of Public Works. Versar, Inc. March 2001.

Southerland, M., E. Rzemien, and M. Perot. 1999. Long-Term Monitoring Plan for the Peter Pan Run Watershed, Frederick County, Maryland. Prepared by Versar, Inc., Columbia, MD, for Frederick County Department of Public Works, Division of Development Review. Frederick, MD.

Stribling, Sam et al. 2008. Bennett Creek Watershed Assessment, Prepared for Frederick County Division of Public Works. Tetra Tech. March 2008.

Stribling, Sam et al. 2009. An Assessment of Stormwater Management Retrofit and Stream Restoration Opportunities in Bennett Creek Watershed, Frederick County, Maryland, Prepared for Frederick County Division of Public Works. Tetra Tech. April 2009.

United States Coast Guard National Response Center (USCG), National Response Center (NRC). 2017. 2016 Reports and 2017 Reports. http://www.nrc.uscg.mil/. Accessed on 11/08/2017.

Versar. 2002. An Assessment of Road Maintenance Activities in Frederick County and Their Effect on Stormwater Runoff Quality. Prepared by Versar Inc., Columbia, MD, for Frederick County Division of Public Works. May 2002.

Versar 2003. *Re*commendations for Alternatives to Pesticide/Herbicide/Fertilizer Use for Frederick County. Prepared by Versar Inc., Columbia, MD, for Frederick County Division of Public Works. December 2003.

Versar, Inc. 2016. Frederick County Dry Weather Screening Program: Response, Site Screening, and Reporting Protocols. Prepared by Versar, Inc., Columbia, MD, for Frederick County, MD, Office of Sustainability and Environmental Resources. August 2016.