

Carroll County Maryland



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT



2023 ANNUAL REPORT

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Carroll County
**NPDES ANNUAL
REPORT**
2023



**CARROLL COUNTY, MARYLAND
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
PERMIT**

Preface

This document summarizes Carroll County, Maryland's compliance efforts taken in response to conditions attached to the National Pollutant Discharge Elimination System Permit No. 22-DP-3319 (MD0068331) issued for the County's municipal storm sewer systems. Permit No. 22-DP-3319 is required under Section 1342 (p) of the Clean Water Act (ref.: USC, Title 33, Ch. 26, Sub. Ch. IV). It is in response to the specific requirements in 40 CFR122.42(c). This report provides compliance efforts from July 1, 2022, to June 30, 2023.

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MDE 2022 Annual Report Assessment Response

On July 20, 2023, the Maryland Department of the Environment (MDE) acknowledged receipt of the Carroll County 2022 Annual Report. The letter acknowledged the work performed by the County and did not have any comments or concerns to be addressed.

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Part I. Identification

A. Permit Number

22-DP-3319 (MD0068331)

B. Permit Area

This permit covers all stormwater discharges from the municipal separate storm sewer systems (MS4s) owned or operated by Carroll County, Maryland (permittee), and the following incorporated municipalities: the Towns of Hampstead, Manchester, Mount Airy, New Windsor, Sykesville, and Union Bridge and the Cities of Taneytown and Westminster (co-permittees).

C. Effective Date

December 30, 2022

D. Expiration Date

December 29, 2027

Part II. Definitions

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

Part III. Water Quality

The permit requires all permittees to manage, implement, and enforce a stormwater management program (SWMP) in accordance with the Clean Water Act (CWA) and corresponding stormwater National Pollutant Discharge Elimination System (NPDES) regulations. According to the Maryland Department of the Environment (MDE) “Basis for Final Determination to Issue Carroll County’s NPDES MS4 Permit,” the goals of Carroll County’s MS4 permit are to control stormwater pollutant discharges and unauthorized discharges into the MS4, to improve water quality within the County’s urban watersheds, and to work toward meeting water quality standards.

In alignment with these goals, 402(p)(3)(B)(iii) of the CWA requires the County to implement “...controls to reduce the discharge of pollutants to the maximum extent practicable, including

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management practices, control techniques and systems, design and engineering methods, and such other provisions as the administrator or state determine appropriate for the control of such pollutants.” Carroll County and its co-permittees have aggressively and consistently pursued measures to improve water quality and work towards compliance with its NPDES MS4 permit, effectively prohibiting pollutants in stormwater discharges or other unauthorized discharges into the MS4.

The County and its co-permittees fully support its stormwater program through strong fiscal commitments, adequate staffing resources, and interjurisdictional cooperation. The County has successfully met and exceeded ambitious impervious reduction goals, provided extensive annual public outreach, and coordinated among a diverse group of jurisdictions to strive for compliance with the NPDES MS4 permit. Fiscal expenditures and capital budgeting – past, present, and planned – demonstrate the continual commitment to this program. This is further reinforced by the Memorandum of Agreement (MOA) signed by all co-permittees, which obligates funding for the capital costs of the permit’s impervious surface restoration requirements and defines overall administrative support responsibilities.

The U.S. Environmental Protection Agency (EPA), MDE, and the courts have determined that the impervious acre restoration requirements and associated pollutant reductions are consistent with Maryland’s Phase III Watershed Implementation Plan and satisfactory for addressing both the Chesapeake Bay and other applicable Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs). The County and the municipal co-permittees continue to actively implement an adaptive and substantial restoration program. As shown in Part IV.H. Program Funding, the resources needed to support the operating expenses of this program and permit administration, as well as the funding necessary to address the impervious restoration requirement, have been planned and budgeted for the permit term. Additionally, Part IV.D. Management Programs and Part IV.H. Program Funding demonstrate that the programmatic structure is in place to develop and implement restoration plans to address WLAs and approved TMDLs for all County watersheds with a TMDL requirement.

Part IV. Standard Permit Conditions

A. Permit Administration

The legal responsibility for maintaining the conditions included in this permit lies with the Carroll County Board of Commissioners. In addition, the previously referenced municipal MOA also outlines specific programmatic and legal responsibilities between the County and co-permittees. The Commissioners have delegated responsibility to the Carroll County Department of Planning and Land Management (PLM), formerly known as the Department of Land and Resource Management, to provide administrative and technical implementation of the NPDES MS4 permit. The PLM Director provides direct administration of the permit. An organizational chart for program administration can be found in **Appendix A**.

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Within PLM, the Bureau of Resource Management (BRM) provides vital NPDES MS4 operational and technical support, including fieldwork, GIS operations, monitoring, inspections, compliance, watershed restoration, and various other responsibilities. The BRM holds the primary responsibility for external environmental compliance through the administration of Carroll County Government's environmental and land development codes, ordinances, and standards. These include stormwater management, floodplain management, forest conservation, landscape enhancement, water resource management, grading, erosion and sediment control, and environmental management of storm sewer systems.

BRM has two dedicated NPDES Compliance Specialists on staff assigned specifically to the NPDES MS4 program. These positions are jointly funded by Carroll County and the eight incorporated municipalities. This arrangement was coordinated by the Water Resource Coordination Council (WRCC), a cooperative partnership between the County, municipalities, and Carroll County Health Department that addresses issues related to water, wastewater, and stormwater management. The NPDES Compliance Specialists implement certain aspects of NPDES MS4 program requirements. Key responsibilities for these positions include:

- Serving as technical liaisons to MDE;
- Coordinating, managing, and implementing certain permit requirements in accordance with federal, state, and local laws;
- Coordinating with County/municipal personnel, other government officials, and citizens regarding NPDES compliance issues;
- Conducting and coordinating illicit discharge inspection screenings and routine surveys with County/municipal personnel to discover and eliminate pollutant sources;
- Coordinating with County/municipal personnel in the development of pollution reduction good housekeeping practices for property management and maintenance;
- Coordinating with County/municipal personnel in the design, implementation, and maintenance of the County's NPDES Geographic Information System (GIS) and MDE geodatabase (GDB) submission for NPDES MS4 compliance; and
- Coordinating development of compliance education, training, and outreach programs.

The County/municipal joint permit eliminates political boundaries as a factor in watershed planning and restoration. Specific responsibilities related to permit reporting and support from the municipalities are outlined in the MOA. This working relationship has made compliance with the NPDES MS4 requirements more purposeful and effective. The NPDES Compliance Specialists support each municipality in storm sewer system mapping, illicit discharge detection and elimination inspections/investigations, visual surveys, training, 20SW permit applicability, property management and maintenance practices, and public education and outreach efforts.

Annual written agreements between the County and each municipality further delineate the services the County provides for implementation of and compliance with the permit. These agreements also define the environmental and land development codes, ordinances, and standards that uphold the County's program. **Table 1** shows the assignment of responsibilities for review, inspection, and bonding for each municipality.

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Compliance with various other specific permits (e.g. 20SW) is the responsibility of the individual County agencies or co-permittee municipalities that oversee the permitted facilities. Coordination between these agencies and PLM regarding NPDES compliance remains a priority. In addition, the County continues to work jointly with the municipalities to ensure ongoing implementation of compliance responsibilities. Any future changes in the administration of this permit will be reported to MDE.

Table 1
Review, Inspection, and Bonding: Assignment of Responsibilities

Carroll County Code & Activity	Hampstead	Manchester	Mount Airy	New Windsor	Sykesville	Taneytown	Union Bridge**	Westminster
Floodplain								
Review*	C/C	C/C	C/C	C/C	C/C	C/C	C/M	M/M
Bond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Inspection	C	C	C	C	C	C	C	M
Easement	C	C	C	C	C	C	M	M
Grading								
Review*	C/C	C/C	C/C	C/C	C/C	C/C	C/C	C/C
Bond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Inspection	C	C	C	C	C	C	C	C
Sediment Control								
Review*	SCD/S	SCD/S	SCD/S	SCD/S	SCD/S	SCD/S	SCD/S	SCD/S
Bond	C	C	M	C	M	M	C	C
Inspection	C	C	C	C	M/C	C	C	C
Stormwater Management								
Review*	C/C	C/C	C/C	C/C	C/C	M	C/M	C/M
Bond	C	C	M	C	M	M	M	M
Inspection	C	C	C	C	C	M	C	C
Easement	M	M/C	M	M	M	M	M	M
Landscape								
Review*	C/C	C/C	C/M	C	C/M	C/C	M/M	M/M
Bond	C	C	M	C	M	C	M	M
Inspection	C	C	M	C	M	C	M	M
Forest Conservation								
Review*	C/C	C/C	C/C	C/C	C/C	C/C	C/C	C/C
Bond	C	C	C	C	C	C	C	C
Inspection	C	C	C	C	C	C	C	C
Easement	C	C	C	C	C	C	C	C
Water Resources								
Review*	C/No Code	C/C	C/C	C/C	C/C	C/No Code	M	C/No Code
Bond	N/A	N/A	N/A	N/A	N/A	N/A	M	N/A
Inspection	N/A	C	N/A	C	C	N/A	M	N/A
Easement	N/A	C	M	C	C	N/A	M	N/A
Key:	C = County	M = Municipality	S = State	SCD = Carroll Soil Conservation District				

Source: Carroll County Bureau of Resource Management

* Review performed by / whose code

**County assumed responsibilities associated with stormwater management in December 2015.

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On April 27, 2018, MDE issued a National Pollutant Discharge Elimination System General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (General Discharge Permit No. 13-IM-5500, General NPDES No. MDR055500). This Phase II permit covers the Frederick County side of the Town of Mount Airy. On October 23, 2014, the Town of Mount Airy and the seven other municipalities within the County entered into an MOA relating to the NPDES MS4 Phase I requirements covering the portion of the town which is located within Carroll County. This MOA was subsequently updated and re-affirmed on October 7, 2021. Additionally, a separate MOA was executed with Mount Airy on May 10, 2022, to address the Frederick County side of Mount Airy. In October 2023, MDE announced that the current permit would be administratively extended after its expiration date and permit requirements and conditions will remain in effect until renewed, which is anticipated in calendar year 2024. Carroll County will continue to assist Mt. Airy with administration of permit requirements. All capital expenses related to work on the Frederick County side of Mount Airy are funded by the Town.

Programs specified in the Phase II general permit (e.g. stormwater management, erosion and sediment control, IDDE, and public education) are implemented in partnership with Carroll County and reported in the County's Annual Report and Geodatabase submissions. Information relating to impervious acreage baseline, restoration planning and implementation, and Minimum Control Measures are highlighted in **Appendix H**, "Town of Mount Airy Phase II Permit Requirements."

B. Legal Authority

Continuation of Established Authority – The legal authority established under this permit remains within the Carroll County Code of Public Local Laws and Ordinances ("County Code"). In addition, the MOA between the County and incorporated municipalities dated October 2021 establishes cost-sharing and co-permittee responsibilities in complying with this permit.

Chapter 53 of the County Code, "Environmental Management of Storm Sewer Systems," or an equivalent municipal ordinance, provides Carroll County and municipal co-permittees a practical, effective regulatory tool that provides standards to manage and protect the MS4.

C. Source Identification

The permit requires identification of sources of pollutants in stormwater and the systems that convey stormwater runoff. Carroll County maintains staff dedicated to NPDES MS4 compliance, concentrating on those efforts that relate to storm drain system delineation and facility compliance. GIS technology is employed to assist in mapping and data analysis to help identify drainage systems exhibiting stormwater quality deficiencies. GIS also provides detailed locations for issues identified during the watershed assessments, which aids in developing and implementing effective restoration plans.

In 2015, MDE published a geodatabase (GDB) to support reporting of the data required in the MS4 permits. Over the last several years, MDE has been redesigning portions of the GDB in

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order to provide a more streamlined schema and to incorporate new fields and domains that capture evolving permit requirements. Carroll County is appreciative of the cooperative approach being taken and has been providing feedback to MDE during the redesign process.

For this annual report, MDE requested that jurisdictions submit required data in the draft GDB format. Carroll County has migrated its data into the new schema, and this effort has generated another round of comments, questions, and suggestions for MDE, which are included in **Appendix G**. The County will continue to work with MDE to refine the database design and perform quality assurance reviews of the data. Further opportunities remain for improving the GDB and its functionality, and the County requests that MDE formalize as many of these identified changes as possible in the next schema draft.

1. Storm Drain System GIS Database

Carroll County maintains an inventory of storm drain infrastructure to facilitate the identification of source pollutants in stormwater runoff within the County and co-permittee municipalities. System mapping maintenance efforts include the utilization of as-built surveys of newly submitted storm sewer systems in digital format, as required through the development review process. Other sources for data capture include archived records, desktop reviews, outfall screenings, and public works staff observations. Data representing stormwater infrastructure and related information is managed within a County GDB using ArcGIS Pro 3.1.0 software. This GDB has been structured to incorporate the MDE data reporting requirements described in the *NPDES MS4 Draft Supplement to the Geodatabase Design and User's Guide* (MDE, 2023), allowing the County to simultaneously meet internal recordkeeping requirements and maintain the reporting parameters of the MDE GDB.

The storm drain system has been provided with this annual report as a supplemental GDB, as required by the permit. A subset of features is also provided within the Outfall feature class of the MDE GDB, which includes major NPDES outfalls and other targeted outfalls monitored and screened for Illicit Discharge Detection and Elimination (IDDE) purposes. These GDBs are provided on the **Appendix B CD**.

The storm drain infrastructure database includes an owner classification field to clarify County, municipal, and non-MS4 owner/operator status. This helps to define MS4 and non-MS4 interface connections in tracking potential source pollutants and system property management and maintenance responsibilities. County and municipal co-permittee personnel provide local system knowledge, mapping, and field verification in maintaining this data. Digital storm drain system map files and hard copy maps are available as a quick reference tool to each municipality and County agency as needed. The County has also reached out to other agencies and businesses who own and maintain infrastructure within county limits to confirm ownership. Over the last several years, County staff have also met with State Highway Administration (SHA) to compare data and maintain open lines of communication between the two agencies regarding GIS data and MS4 coordination.

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2. Industrial and Commercial Sources

Carroll County maintains an inventory of industrial and commercial land use areas that it has determined to have the potential to contribute significant pollutants to the MS4 and watershed drainage areas. This inventory is maintained in a geodatabase with periodic additions and subtractions based on the previous year's visual survey observations. In response to a 2017 IDDE program field review by MDE, the selection criteria methodology was adjusted, expanding the inventory for the program. The program update was found acceptable per MDE's 2019 Annual Report review comments. The industrial and commercial source data has been provided with this annual report as a supplemental GDB on the **Appendix B** CD.

3. Urban Best Management Practices (Stormwater Management Facility Data)

The BRM manages stormwater management facility data for the County and municipalities in the County GDB. The GDB contains information related to facility location, ownership, reviews and approvals, drainage area, impervious area, inspections, and other information for the 3,527 active BMPs.

Currently, there are 1,010 as-built certified and approved structural stormwater management best management practices (BMPs) throughout the County and municipalities, excluding the City of Taneytown. Of these BMPs, there are 70 structural restoration practices. There are also 2,515 non-structural environmental site design (ESD) practices, six of which are non-structural restoration practices. All facilities, drainage areas, and outfalls have been mapped and associated data provided on the **Appendix B** CD.

These values do not include those from the City of Taneytown, which maintains its own stormwater review, inspection, and maintenance program independent of the County. Taneytown currently has 47 active stormwater BMPs, including 36 structural and 11 ESD practices. The City has located and confirmed as-built plans for 33 facilities, and County staff are assisting the City in acquiring or developing the remaining facility plans.

Appendix B includes a map of all newly as-built structural stormwater facilities for the 2023 permit year.

4. Impervious Surfaces

The Permit Impervious Surface Analysis for Carroll County (**Figure 1**) provides a breakdown of the historical and current impervious area restoration program. Restoration requirements began in the third-generation MS4 permit and have continued with subsequent fourth- and fifth-generation permits.

During the third-generation permit term, 10% of untreated impervious area was required to be treated. The baseline during that permit was 6,720 acres of untreated impervious area in the County; this number did not include the municipalities (Phase II jurisdictions). A total of 688 acres of impervious area were treated during that permit term, which exceeded the 672 required acres, yielding a remaining 6,032 acres of untreated impervious area.

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As agreed upon with MDE, at the expiration of the third-generation permit, the County was permitted to work toward addressing the next 20% treatment requirement, which was anticipated to be part of the fourth-generation permit issued on December 29, 2014. In December 2014, the County entered into a MOA with the eight municipalities to join together as a Phase I jurisdiction on the existing permit. The untreated impervious acreage associated with the municipalities (2,265 acres) was then added to the remaining County untreated impervious areas (5,805 acres, determined during a re-evaluation of the County's impervious acreage) for a new baseline of 8,070 acres. The 8,070-acre baseline was affirmed and approved by MDE's review correspondence, dated December 13, 2018, for the 2018 Annual Report. The County concluded the fourth-generation permit in December 2019 with 1,629 acres of impervious area treated, exceeding the 1,614 acres required (20% of 8,070 acres).

The fifth-generation permit was issued on December 30, 2022. It requires the County to restore an additional 1,217 impervious acres during the permit term, equivalent to 14% of the baseline untreated impervious acres. Restoration work completed since January 1, 2020 has been applied to the current fifth-generation permit. During this time period, the County has restored 969 impervious acres, which is equivalent to treating 12% of the baseline.

Activities associated with treatment efforts taken during each permit term are listed in **Table 10**. Total impervious acres treated as of June 30, 2023, are 3,286. The County has met both the third- and fourth-generation permit requirements and has made significant progress toward the impervious area treatment for the fifth-generation permit.

Carroll County Impervious Area Treatment Progress

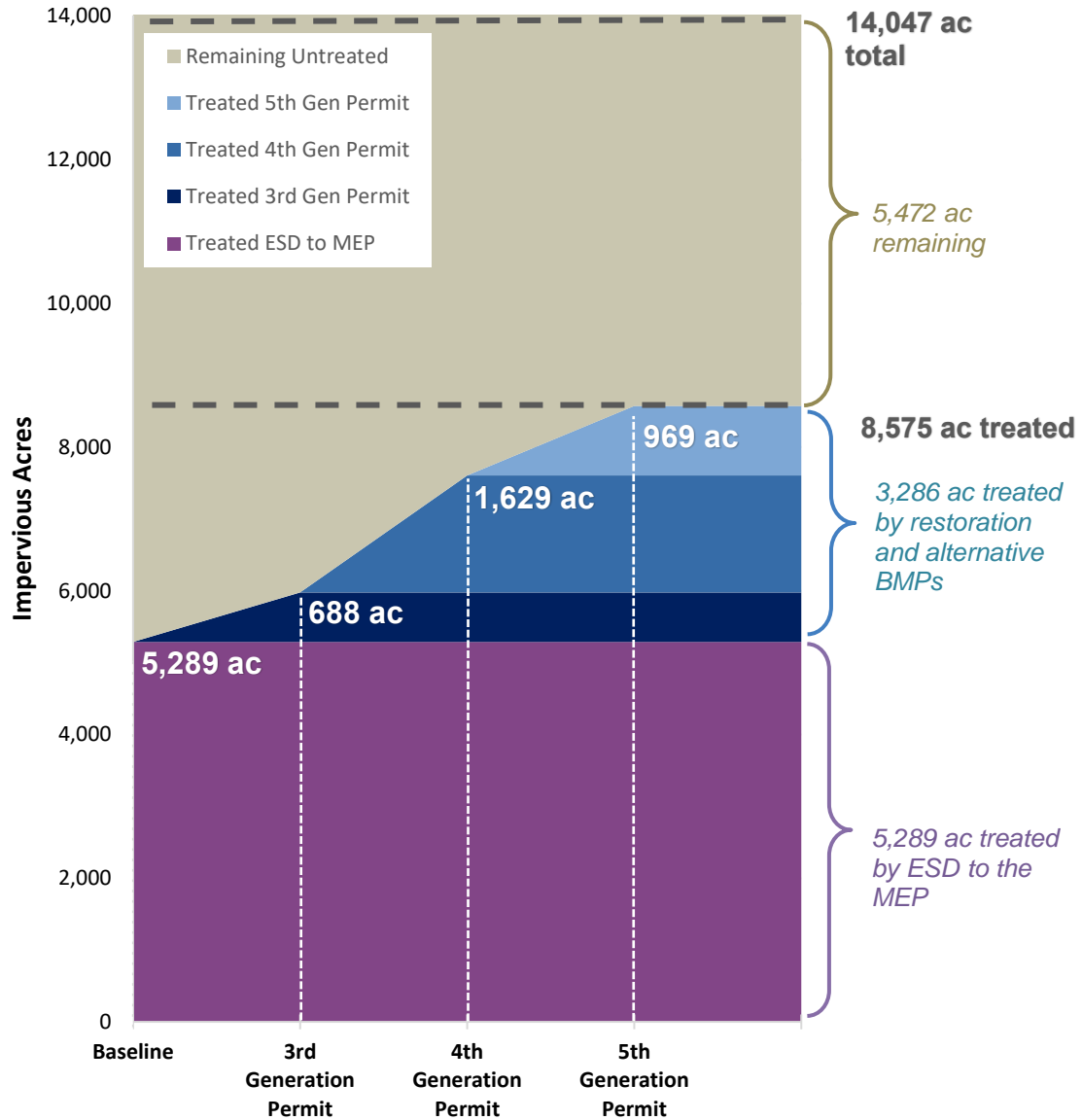


Figure 1: Carroll County Permit Impervious Surface Analysis

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5. Monitoring Locations

Water quality monitoring and watershed assessment efforts required within the County's NPDES MS4 permit fall under the responsibility of the BRM. The results of chemical, biological and physical data collection efforts are integral to measuring program success of NPDES MS4 project implementation. The County's MS4 chemical, biological, and physical monitoring locations are discussed in more detail within Section IV.G. Assessment of Controls.

In addition to the MS4 BMP effectiveness and watershed wide monitoring requirements, the BRM also conducts internal and grant-funded monitoring programs.

Chesapeake Bay Trust Restoration Research

Stormwater runoff from inadequately managed impervious surfaces can cause accelerated streambank erosion in downstream channels. As pervious land is converted to impervious, the proportion of rainwater that infiltrates into the ground decreases. This, in turn, causes an increase in runoff and an increase in the volume and velocity of flow in downstream receiving channels. The increase in volume and velocity intensifies erosion and increases sediment loads within the stream corridor.

There are two approaches to reducing the destabilizing velocities in the receiving channel. The first is traditional stream restoration, which involves increasing the plan form and bank resistance. The second is upland stormwater management, which can include storing the total runoff volume and dissipating the acquired kinetic energy as turbulence in the water pool.

In the Piedmont region, where Carroll County is located, many areas that were developed prior to 1982 were constructed without stormwater management. Subsequently, developments were designed with peak flow controls that only matched existing conditions but did not return runoff characteristics to predevelopment conditions, as required now by COMAR 26.17.02.01. Meeting only the existing runoff conditions failed to address existing streambank instability, restore streams, and reduce nutrient and sediment export to the Bay.

A foremost goal of stormwater management is to maintain or return to pre-development hydrologic conditions. For over 10 years, Carroll County has been experimenting with the use of enlarged, enhanced sand filters as primary stormwater management practices. An analysis of the County's standard design determined that these practices reduce the two-year storm peak flow to below that of the equivalent forested watershed in good condition. The potential stormwater management, water quality, and stream restoration benefits resulting from this are substantial.

Because the two-year flow is thought to control bank geometry, the ability to achieve pre-development two-year hydrologic conditions using sand filters holds high potential for improving downstream bank conditions. The extent to which these effects stretch downstream is dependent on various additional factors, including soil type and land use in the unmanaged portion of the watershed below the sand filter.

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In November 2002, BRM initiated fieldwork with the Center for Watershed Protection, who received funding from the Chesapeake Bay Trust's Restoration Research Program to continue evaluating the impact of hydraulic-controlling BMPs on the self-recovery of stream channel stability in urban watersheds. The original restoration research grant was awarded to Carroll County in May of 2016 to study the effect of stormwater retrofits on the hydrogeomorphology of downstream channels and associated nutrient and sediment load reductions. The grant concluded in December of 2020. During the four-year pre- and post-restoration paired watershed study, the retrofits performed as designed to reduce the magnitude, duration, and frequency of erosive flows, substantially decreasing the measured runoff curve numbers and simulating a hydrologic regime close to that of the "woods in good condition" performance standard. Therefore, it is likely that these channels will begin to stabilize, show less erosion potential, and reconnect to the floodplain over time.

Data collected during the original study indicate that the downstream channels are on a trajectory towards stabilization. Because bank stability and geomorphic response will take longer to develop than the duration of the original grant, the County has continued monitoring the study sites to provide documentation of a definitive stream channel response. During the next four-year study, a stage-discharge relationship will continue to be generated, but the primary focus will shift to the geomorphic component through annual cross-section surveys, pebble counts, and longitudinal profiles.

Although streambank regeneration is not currently an approved practice in the Wasteload Allocation Guidance Document (MDE, 2020), the guidance states that innovative practices can be used to provide jurisdictions additional options for watershed restoration activities. These include practices that are not listed in the Maryland Stormwater Design Manual (MDE, 2000) and without an assigned pollution removal efficiency from MDE or CBP, provided there is sufficient documentation and monitoring to verify pollutant removal efficiencies acceptable to MDE. The goal is that these long-term monitoring results will inform recommendations to credit upland stormwater practices as a hydrogeomorphic stream stabilization technique for sediment reductions.

6. Water Quality Improvement Projects

Carroll County continues to determinedly pursue its watershed restoration efforts through impervious surface mitigation and water quality improvements. Projects are designed, managed, and implemented by BRM through a capital improvement program, titled "Watershed Assessment and Improvement (NPDES)" in the Carroll County Community Investment Plan (CIP). Funding for operating (administrative and technical) and capital (engineering and construction functions) is discussed in detail in Part IV.G. of this report.

The County continues to plan, design, and implement restoration projects, including the following:

- rehabilitating and upgrading older stormwater management facilities to current standards or greater,
- implementing BMPs to manage existing untreated impervious areas,

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- planting stream buffers, and
- restoring stream systems through natural channel design and floodplain reconnection projects.

During the last permit year, construction was completed on four stormwater management restoration projects, treating 35 acres of untreated impervious area. An additional two projects were recently completed or are currently under construction, with the anticipated treatment to be reported in the FY2024 annual report. The *Carroll County TMDL Stormwater Implementation Plan* summarizes how restoration efforts are applied to local WLAs and Chesapeake Bay TMDL reductions. It is provided with this annual report as a separate document, as requested by MDE.

D. Management Programs

As required by the permit, Carroll County maintains six management programs to help control stormwater discharges and address water quality issues: Stormwater Management, Erosion and Sediment Control, Illicit Discharge Detection and Elimination (IDDE), Litter and Floatables, Property Management and Maintenance, and Public Outreach. The Environmental Inspection Services Division (EISD) of the BRM is responsible for all inspections and enforcement actions necessary to ensure that conditions established in the review, approval, and permitting phases of development are met. The EISD also contributes to compliance with the County NPDES responsibilities by providing stormwater management facility maintenance inspections and assistance with illicit discharge inspections and visual surveys.

1. Stormwater Management

The County Stormwater Management Program is the responsibility of the BRM and implements Chapter 151 of the County Code, “Stormwater Management.” The implementation of Chapter 151 is applied to the municipalities of Hampstead, Manchester, Mount Airy, New Windsor, Sykesville, and Union Bridge. The City of Westminster has its own approved stormwater management code, which is implemented by the County. The City of Taneytown implements an approved stormwater management code independent of the County (see **Table 1**).

Reviews performed by the County are the responsibility of the Program Engineer and the Stormwater Management Review Assistant. Review and approval of stormwater management from July 1, 2022, to June 30, 2023, consisted of 156 plan reviews, 19 structural as-built approvals, and 268 non-structural as-built approvals.

Residential stormwater management facilities and storm sewer systems in unincorporated areas are owned by the County, while the municipalities own the residential facilities in their respective jurisdictions. All commercial and industrial facilities in the County and municipalities are maintained by the property owners. Database information on stormwater facilities and a map of newly as-built structural facilities are contained in **Appendix B** of this report.

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According to COMAR 26.17.02, preventative maintenance inspections of all ESD treatment systems and structural stormwater management facilities must be conducted on at least a triennial basis. This function is performed by the County for all municipalities except the City of Taneytown, which performs its own inspections.

Inspections of facilities in the County and seven of the eight municipalities are handled by EISD. This includes both publicly and privately owned facilities. Each facility is inspected every three years, with letters sent to the owner indicating the condition of the facility and, if deficiencies exist, the amount of time allowed for compliance to be achieved. In the case of County-owned structures, the notice is sent to the Bureau of Facilities, Bureau of Roads Operations, or BRM. The EISD performed 590 inspections this year on 367 individual structural facilities. Follow-up inspections are performed to ensure compliance has been achieved in a timely matter. Of those 367 structural facilities, 54 facilities needed corrective action, and 29 were brought into compliance as of June 30, 2023. In cases where violations still existed, 10 facilities were issued Notices of Violation, providing an additional amount of time to resolve issues. At the conclusion of FY2023, there were 1,012 structural stormwater management facilities on the list to be inspected. Of these, 288 will be inspected during FY2024, 347 will be inspected in FY2025, and 377 will be inspected in FY2026.

Currently, there are 2,515 non-structural ESD practices throughout the County. In FY2023, 418 inspections were performed on 363 practices. Of these, 26 ESD practices needed corrective action, and 18 were brought into compliance by the end of the permit year. The EISD inspectors will be scheduling inspections over the next three years to spread the inspections over the three-year period. At least 830 are planned to be inspected in FY2024, 1,060 in FY2025, and 625 in FY2026.

City of Taneytown

Stormwater management structures and infrastructure intended for ownership by the City of Taneytown are inspected as constructed, typically by City staff and the City's consultant engineer. Frequency of inspections, and reports of those inspections, are determined by project-specific factors. Reports, including narratives and photographs, are submitted to the City Department of Public Works (DPW) for maintenance per the Department's State-approved records retention schedule. Facilities intended to be deeded to the City are typically the product of residential development projects, which may include storm sewer system improvements, ESD features, stormwater management structures, and transfer of real property or deeds of easement.

Projects involving stormwater management on City-owned properties or involving City-owned facilities are also subject to construction inspections by the City or its contractor. Park development projects and construction of or improvements to existing water, sewer, or stormwater infrastructure are typical of these projects. These projects follow the same construction inspection, reporting, and report retention processes as other projects intended for City ownership.

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Stormwater management facilities, whether ESD practices, structural BMPs, or other features that are intended to remain under private ownership, are inspected during construction by the developer's engineer in accordance with approved construction drawings, utilizing an inspection schedule incorporated into the stormwater management plan. The City's consultant engineer reviews and approves stormwater management plans prior to construction. Upon completion of projects and prior to the release of construction surety, they also complete a review of stormwater as-built drawings, which are certified by the developer's engineer. The City's DPW also provides inspection of completed stormwater facilities and coordinates with the City consultant engineer on approvals. As-built plans are maintained by the City's Planning and Zoning Department in accordance with the Department's State-approved retention schedule. The City is currently working to compile a list of as-built stormwater management plans and dates said plans were certified.

The City of Taneytown is required to inspect all public and private stormwater management facilities every three years under the City of Taneytown's stormwater management ordinance. Per the City's "Stormwater Management Facilities Inspection Report" prepared by the City's consulting engineer, all stormwater management facilities within the City of Taneytown are inspected on a triennial basis. The consulting engineer inspected all of the facilities in the 2022 permit year. The facilities will be inspected again in FY2025.

2. Erosion and Sediment Control

The EISD of the BRM is responsible for inspection and enforcement of erosion and sediment control in accordance with Chapter 152 of the County Code, "Grading and Sediment Control." In 2022, MDE performed a review of the County program and granted the County's request for continued delegation of erosion and sediment control enforcement authority for two years, effective through June 30, 2024.

Grading permits are issued on all projects with disturbance in excess of 5,000 square feet. Pre-construction meetings are held with the contractor to discuss the sediment and erosion control plan associated with the project. Site meetings are held periodically with the foreman who holds a valid "Responsible Personnel Certification" throughout the duration of the project. As part of the NPDES permit requirements, grading permits issued with earth disturbance in excess of one acre are reported quarterly to MDE.

Statistics related to grading permits and inspections during the reporting timeframe included 131 grading permits issued and 3,154 sediment control inspections performed. All inspections are recorded and field investigations reports sent, regardless of the site conditions. In 26 cases, Stop Work Orders were posted for violations, which in most cases required compliance within 36 hours. Currently, there are no outstanding violations moving through the enforcement process. The grading permits are included in the GDB on the **Appendix B CD**.

3. Illicit Discharge Detection and Elimination (IDDE)

The NPDES permit requires the implementation of an inspection and enforcement program to ensure that all non-stormwater discharges are either permitted by MDE, exempted under the

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NPDES Phase 1 MS4 permit, or eliminated. The BRM performs illicit discharge monitoring, detection, and elimination and assists with municipal co-permittee responsibilities. The MOA between the County and the municipalities, wherein services are provided in support of the permit, satisfies part of this requirement. No modifications were made this permit year to municipal ordinances or regulations related to Chapter 53 of the County Code, “Environmental Management of Storm Sewer Systems.”

Dry Weather Outfall Screenings

Dry weather field screenings of at least 100 outfalls are conducted annually by EISD inspectors and NPDES Compliance Specialists for the Carroll County Phase I MS4 permit. Carroll County staff participate in annual IDDE inspector training prior to the outfall screening season. Current standard operating procedures (SOPs) are included in the County’s 2016 IDDE Guidance Manual. Screenings are grouped by election district and assigned to staff most familiar with the stormwater facilities and land use activities in each district. Outfalls located in the eight municipalities are inspected by an NPDES Compliance Specialist in cooperation with municipal staff most knowledgeable of their local environs. In addition, at least 8 outfalls (20% of all outfalls) are screened within the Frederick County portion of the Town of Mount Airy Phase II MS4 permit area by agreement and MDE approval. These outfalls are prioritized to select a combination of major outfalls and new outfalls that have not been screened previously.

During the last permit year, a total of 112 outfalls were screened for illicit discharges. For the Carroll County Phase I MS4 Permit, 104 outfalls were screened. Of these, 65 outfalls were in the County and 39 within co-permittee municipalities. Carroll County MS4 permit outfall screenings were distributed among seven watersheds: Liberty Reservoir (55), Double Pipe Creek (21), South Branch Patapsco River (13), Upper Monocacy River (4), Prettyboy Reservoir (7), Loch Raven Reservoir (3), and the Lower Monocacy River (1). Eight additional municipal outfalls were screened for the Town of Mount Airy Phase II MS4 Permit (Frederick County portion) within the Lower Monocacy River watershed. See Mount Airy Phase II Report in **Appendix H** for screening details of the eight outfalls. See outfall screening map in **Appendix C** for all location details.

There were 31 outfalls with dry-weather flows, each of which was chemically analyzed using a field screening test for the parameters defined by the permit. Flows were attributed to groundwater sources and/or BMP stormwater facility retention flows. No illicit discharges were identified. Six outfalls displayed slightly elevated detergent levels at 0.1 mg/L or less. Two outfalls displayed slightly elevated chorine levels at 0.1 mg/L. One outfall with an elevated trace of chlorine does have a facility in the drainage area with an MDE-regulated commercial vehicle washing permit. These trace amounts are under the program’s defined trigger levels. No other noteworthy indicators or activities were observed at outfalls with flows at the time of screening. Stormwater infrastructure condition or maintenance issues having potential to affect function or water quality are referred to the appropriate County or Municipal public works departments. Results of each outfall screening can be found in the GDB on the CD in **Appendix B**.

To facilitate IDDE screening, a unique outfall identifier is assigned to major NPDES outfalls and other non-major outfalls that have been targeted for their high illicit discharge potential (e.g.

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commercial and industrial land uses, densely populated areas, aging sewer infrastructure areas, or areas with past screening history). These outfalls are regularly evaluated and updated to maintain a productive outfall screening program. Additionally, the fifth-generation permit requires permittees to review all County outfalls to prioritize field screening efforts in areas with the greatest potential for polluted discharges. The County has completed this review, and details of the prioritization process and screening plan for the permit term are provided in **Appendix F**.

Visual Surveys

In addition to the outfall screening program, annual visual surveys are conducted at industrial and commercial sites that have a high potential for generating and discharging pollutants per Part IV.C.2 of the permit. Prior to conducting IDDE visual surveys, NPDES Compliance Specialists and EISD staff receive training and review permit regulations and procedures. SOPs for conducting visual surveys are utilized for discovering, documenting, and eliminating pollutant sources discharging to the MS4 or regulated waterways. A visual survey inspection form guides staff to identify significant pollutant sources that could be exposed to stormwater. The form focuses on key activities that are often hotspots for potential pollutants, evaluating the quality of related good housekeeping practices and their proximity to storm drain inflows or waterways.

If a significant pollutant source of concern or an illicit discharge is discovered, the property owner is contacted by the EISD staff, NPDES Compliance Specialist, and/or respective municipal authority. The SOP guidelines and Chapter 53, relating to enforcement measures, are followed until the source is eliminated. County or MDE Good Housekeeping/BMP information may be provided in-person or sent to businesses with potential significant sources identified during the visual survey process.

A total of 125 visual surveys were conducted across seven watersheds during the 2023 permit year, a 14% increase from the previous year. There were 123 commercial and 2 industrial sites surveyed. A map of visual survey site locations and a summary of visual survey actions are provided in **Appendix C**. No illicit discharges were discovered during the surveys. However, six businesses were either sent an MS4 stormwater pollution prevention educational letter or provided with good housekeeping and best management practice (BMP) guidance related to their primary industry. One site inspection found activities and conditions such that MDE Compliance was contacted, resulting in the facility being required to take corrective actions and apply for an MDE 20SW Industrial Stormwater permit to prevent potential stormwater runoff pollution. Another food industry site, having previous illicit discharge history, was identified for on-going visual survey monitoring, having nearby inlets draining to a regulated SWM BMP.

Of the 125 sites surveyed this year, 60 will be retained in the inventory for their high pollution potential. The remaining 65 properties will be removed for having no potential for significant pollutants, no exposure conditions, or an NPDES Industrial Stormwater Permit with a Stormwater Pollution Prevention Plan (SWPPP) that includes BMPs and regular inspections. Carroll County continues to work through and update its expanded Visual Survey inventory.

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Illicit Discharge Response

Carroll County is required to maintain a program to address and respond to illegal discharges, dumping, and spills. The County maintains a Stormwater Pollution Hotline as indicated on County and municipal websites. “Illicit Discharge Incident Response” SOPs have been implemented and are documented in the County IDDE Guidance Manual to quickly respond to and eliminate potential illicit/pollutant discharges in the MS4. A pollutant discharge database is in place and managed by the County EISD using the Accela software program. Calls from the public are investigated and processed within the program and tracked through to abatement. Protocols are also in place for quick response to inter-agency and co-permittee investigations and reports. The EISD closely coordinates with respective municipalities for elimination if an incident proves to be an illicit discharge. Carroll County initiated contact with MDOT SHA’s MS4 Permit and Reporting Water Programs Division in June of 2023 to exchange contact information for when coordination is necessary between MS4s to resolve investigations.

During the last permit year, 21 IDDE discharge complaints were processed: eight from the Citizen Stormwater Hotline, 11 from trained County and Municipal employees, and two from other regulatory agencies (MDE, EPA, and CC Health Department). Of these complaints, three were determined to be non-illicit discharges, four were potential illicit discharges, and 14 were confirmed illicit discharges. The illicit events included: six commercial, four residential, two institutional, and two industrial areas. Thirteen illicit discharges were successfully eliminated through County, municipal, and other interagency enforcement efforts. One non-hazardous discharge currently being monitored by the County and MDE Compliance is in the process of addressing required corrective measures. An IDDE Incident Investigation Summary is included in **Appendix C**.

Chapter 53 of the County Code establishes methods for controlling the introduction of illicit discharges or pollutants into the MS4 in order to comply with permit requirements. The adoption of the County ordinance or an equivalent municipal ordinance by each municipality provides the necessary enforcement authority, either independently or by County. All municipalities work in conjunction with BRM staff with regard to investigation, regulatory guidance, and enforcement. **Table 2** lists the municipalities, the enforcement authority, and whether they have adopted County Code Chapter 53 or their own equivalent code.

Table 2
Municipal Adoption and Enforcement of Carroll County Code
Chapter 53, Environmental Management of Storm Sewer Systems or Municipal Equivalent

Municipality	Enforcement Code & Authority
Hampstead	County
Manchester	County
Mount Airy	Municipal
New Windsor	County
Sykesville	Municipal
Taneytown	Municipal
Union Bridge	County
Westminster	Municipal

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4. Property Management and Maintenance

Industrial Stormwater Permit Coverage

MS4 permittees are required under Section Part IV.D.4. Property Management and Maintenance to ensure a Notice of Intent (NOI) is submitted to MDE for each permittee-owned facility requiring coverage under the “General Permit for Discharges from Stormwater Associated with Industrial Activities.” MDE issued the MD General Permit No. 20SW effective February 1, 2023. In the permit renewal process, each co-permittee evaluated their facilities under the new 20SW permit requirements to determine permit coverage. Two facilities that changed site activities received 12SW permit terminations after consulting with MDE Industrial Stormwater Permits: the County’s Hoods Mill Solid Waste Convenience Drop Off was closed, and the Town of Hampstead’s Maintenance Shop Facility no longer services its fleet of vehicles. **Table 3** lists eleven facilities for which NOI’s were submitted in the 20SW permit renewal process, with MDE review status acknowledging receipt and/or issued registrations.

Table 3
Carroll County Co-Permittees – 20SW General Stormwater Industrial Permit Status

County- or Municipal- Owned Facility	NOI Submitted	MDE Review Status	MDE REGISTRATION
County Regional Airport	Yes	Received (Under Review)	MDE Registration Effective Date 00/00/00 20SW1755/MDR001755
County Maintenance Center	Yes	Received (Under Review)	MDE Registration Effective Date 00/00/00 20SW1861/MDR001861
County Northern Municipal Landfill	Yes	Received (Under Review)	MDE Registration Effective Date 00/00/00 12SW0660/MDR000660
Manchester Public Works Maintenance Shop	Yes	Issued	MDE Registration: 06/04/14 20SW2201/MDR02201
Mount Airy Public Works Maintenance Shop	Yes	Issued	MDE Registration: 08/15/2023 20SW2257/MDR002257
Mount Airy Public Works WWTP	Yes	Received (Under Review)	MDE Registration: 00/00/00 20DW2258/MDR002258
Taneytown Public Works Maintenance Facility	Yes	Received (Under Review)	MDE Registration: 00/00/00 20SW2263 / MDR001743
Taneytown Public Works WWTP	Yes	Received (Under Review)	MDE Registration: 00/00/00 20SW1743 / MDR001743
Westminster Public Works Streets Maintenance Shop	Yes	Received (Under Review)	MDE Registration: 00/00/00 20SW2292/MDR002292
Westminster Public Works WWTP	Yes	Received (Under Review)	MDE Registration: 00/00/00 20SW2252 / MDR002252
Westminster Public Works Utilities	Yes	Pending Receipt (Under Review)	MDE Registration: 00/00/00 20SW2455 / MDR002455

Under the 20SW permit, these facilities have Stormwater Pollution Prevention Plans (SWPPP) that include site and key staff information, potential sources of pollutants, structural and non-

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structural good housekeeping Best Management Practices (BMPs), employee training, and record keeping. Depending on the facility, BMPs may address proper materials storage, fuel management practices, recycling, secondary containment, salt management, spill kits, and spill control measures. Inspections include Quarterly Routine and Visual grab samples. An Annual Compliance Evaluation performed by staff helps to determine if the SWPPP needs to be updated to improve on-site pollution prevention effectiveness. The three County facilities also have Spill Prevention, Control and Counter Measures Plans (SPCC) per the SPCC rule to help prevent a discharge of oil into regulated waterways. **Table 4** provides the latest Visual Quarterly Inspection dates and reported number of employees trained on-site for the industrial stormwater permit, which totaled 232 staff across all MS4 co-permittees.

Table 4
MS4 Co-Permittee – 20SW General Stormwater Industrial Permit Facility Data

20SW Permitted Facility	Last Visual Quarterly Inspection Date	# Employees SWPPP Training 2023 Permit Year
County Regional Airport	06/23/23	2
County Maintenance Center	04/06/23	146
County Northern Municipal Landfill	06/28/23	13
Manchester Public Works Maintenance Shop	06/21/23	3
Mount Airy Public Works Maintenance Shop	08/25/23	2
Mount Airy Public Works WWTP	05/02/23	2
Taneytown Public Works Maintenance Facility	04/08/23	9
Taneytown Public Works WWTP	05/05/23	4
Westminster Public Works Streets Maintenance Shop	06/21/23	25
Westminster Public Works WTTP	06/27/23	13
Westminster Public Works Utilities	06/14/23	13
<i>Total</i>		232

Good Housekeeping Plans (GHPs)

Permittees are required to develop, implement, and maintain a good housekeeping plan (GHP) for permittee-owned properties where the 20SW Industrial Stormwater Permit is not required, but where certain activities are performed. These activities include maintenance or storage of vehicles or equipment and/or storage of fertilizers, pesticides, landscaping materials, hazardous materials, or other materials that could pollute stormwater runoff.

The BRM initiated research and development on the GHPs during the last permit year. A review of permit requirements, including practical GHP implementation, expectations, and documentation examples from other sources, were discussed with MDE MS4 staff to provide clarification and affirm the process. BRM staff are working with County and municipal property management and maintenance personnel to identify properties requiring the GHP and identify potential pollutant sources at each site. The County is working toward developing standard GHPs for properties with similar uses, as provided for in the permit. The GHP is required and on

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schedule to be submitted to MDE with the County's third-year annual report and implemented thereafter.

Training

NPDES Stormwater Pollution Prevention training is provided to pertinent County and municipal managers, supervisors, and staff throughout the permit year.

Each fall, an annual NPDES Stormwater Pollution Prevention training event is held for administrative and supervisory-level personnel of pertinent County agencies and the eight municipalities. This workshop is geared toward pollution prevention through on-the-ground property management and maintenance implementation of permit requirements. Topics typically include permit overview, anticipated changes for the next generation MS4 and Industrial Stormwater General permits (if applicable), stormwater pollution prevention good housekeeping BMPs, winter salt management, spill prevention, control and clean-up, and IDDE. MDE Compliance staff participated in the Fall 2022 Workshop highlighting key 12SW permit compliance items in Stormwater Pollution Prevention Plans (SWPPP) and a 20SW permit update. The agenda for the Fall 2022 workshop is provided in **Appendix C**.

Eight County agencies and eight co-permittee municipalities provided training for their respective staff, which typically includes: general NPDES MS4 permit awareness, stormwater pollution prevention good housekeeping BMPs related to property management and maintenance activities, winter salt management, and spill prevention and clean up. County and municipal public works staff are also trained by their respective departments to perform visual inspections of storm drain systems during their workday and report potential illicit discharges to supervisors and appropriate authorities.

During the permit year, a total of 305 County and municipal employees received training that covered the MS4 permit, general stormwater pollution prevention, good housekeeping BMPs, and IDDE. Of those 305 employees, 232 received 20SW Industrial Stormwater SWPPP training as described in the previous section, and 208 staff (136 County and 72 municipal) participated in winter weather salt management training.

Pollutant Reduction

The permit requires the County to implement a program to reduce pollutants associated with maintenance activities at County-owned facilities, including parks, roadways, and parking lots. In a cumulative effort, County and municipal co-permittees reduce pollutants through BMPs for various maintenance activities. The County Bureau of Resource Management maintains a guidance document titled, "Carroll County MS4 Property Management and Maintenance Resource Guide: Municipal Stormwater Pollution Prevention Guidance for MS4 Co-Permittee Personnel." It is designed to provide practical, user-friendly resources to maintenance staff for the purpose of reducing pollutants associated with municipal facilities. This overall guidance manual is in the process of being updated.

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There are eight County agencies involved with property management and maintenance activities. County-owned facilities are maintained by numerous bureaus under the Carroll County DPW. The Bureau of Facilities provides general maintenance for over 40 County-owned properties, ranging from administrative buildings to park facilities. The Bureau of Fleet Management/Warehouse manages the County's fleet maintenance operation, which includes a garage/shop, fuel island area, fleet wash facility, and warehouse, and uses applicable BMPs such as auto fluid recycling. The Bureau of Roads Operations provides routine maintenance of the roads, including roadside vegetation management, pavement patching, pavement line striping, drainage work, pipe cleaning and replacement, tree trimming and removal, storm drain maintenance and repair, and surface sealing operations. This Bureau is responsible for approximately 988 miles of predominantly rural open-section roadways (923 miles paved, 65 miles gravel), 154 bridges, and salt dome facilities. The Carroll County Regional Airport (CCRA) is maintained by DPW Airport Operations and has a 5,100-foot runway, supporting tarmac, and parking lot. The Bureau of Utilities maintains water and wastewater treatment plants, a small maintenance facility, and access roads and parking lots. The Bureau of Solid Waste maintains access roads to and from the County's active landfill and convenience drop-off location.

In addition to DPW, the Bureau of Parks within the Department of Recreation and Parks maintains facilities for three natural resource-related parks, and the Department of Economic Development provides maintenance for the Carroll County Farm Museum tourism venue.

The County staff continues to develop and implement the use of an electronic form to aid in submission of property management and maintenance data from County agencies and municipal co-permittees. The web application, JotForm, is used for this purpose. **Table 5** provides a summary of permittee property management and maintenance pollution reduction efforts.

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Table 5
MS4 Permittee Reported Pollution Reduction Activities Associated with
Facility Maintenance Activities (Parks, Roads, Parking Lots, etc.)

MS4 Co-Permittee	Street Sweeping	Inlet Inspection and Cleaning	Vegetation Management	Salt Management	Good Housekeeping BMP Training	Litter Control & Tracking
Total MS4	✓	✓	✓	✓	✓	✓
Carroll Co.	✓ Roads (3,4)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,13,14,15,16)	✓ (17)	✓ (18)
	✓ Solid Waste (2,3)	✓ (5)	✓ (6,8)	✓ (9,10,11,12,14,15)	✓ (17)	✓ (18)
	✓ Utilities (3)	✓ (5)	✓ (6,8)	✓ (See CC Facilities)	✓ (17)	✓ (18)
	✓ Facilities (3)	✓ (5)	✓ (6,7)	✓ (9,10,11,12,13,14,15)	✓ (17)	✓ (18)
	✓ Fleet/Warehouse(3)	N/A	N/A	✓ (See CC Facilities)	✓ (17)	✓ (18)
	✓ Airport (3)	✓ (5)	✓ (6,7)	✓ (No Deicer Applications)	✓ (17)	✓ (18)
	✓ Parks (3)	✓ (8)	✓ (6,8)	✓ (9,10,11,12,14,15)	✓ (17)	✓ (18)
	✓ Farm Museum (3)	✓ (8)	✓ (6,7)	✓ (9,10,11,12,14,15)	✓ (17)	✓ (18)
Hampstead	✓ (3,4)	✓ (1,2,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Manchester	✓ (2,3,4)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Mount Airy	✓ (2,3,4)	✓ (2,4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
New Windsor	✓ (3,4)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Sykesville	✓ (3,4)	✓ (2,4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Taneytown	✓ (2,3,4)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Union Bridge	✓ (1,2,3,4)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Westminster	✓ (1,2,3,4)	✓ (1,2,4,5)	✓ (6,7)	✓ (9,10,11,12,13,14,15,16)	✓ (17)	✓ (18)

Key Activity Details

Street Sweeping/Inlet Inspection Cleaning

- 1) Activity meets criteria for alternative BMP restoration credit
- 2) Scheduled/periodic frequency
- 3) As needed - Construction/special event
- 4) MDOT SHA MS4 roadway periodic sweeping & inlet cleaning – State routes within municipality
- 5) As needed - Complaints/clogging

Vegetation Management

- 6) Primary mechanical control methods (mowing, weed trimming, weed pulling, mulching, etc.)
- 7) Uses one or more herbicide IPM/IVM practices e.g. mechanical methods, research, veg. cycle, BMPs, qualified applicators, product label, spot spraying, selective herbicides, alternative methods (heat), training, or evaluations
- 8) No herbicide usage

Salt Management

- 9) Written Salt Management Plan or Standard Operating Procedures (County agencies follow CC Roads SMP & facility SOPs)
- 10) Product research, tech. information, weather forecast data, tracking & reporting
- 11) Winter weather operations preparation: employee training, contractor training (if applicable)
- 12) Equipment check, salt spreader calibration, road clearing SOPs, storage/loading BMPs
- 13) Pre-wet salt, salt brine use (anti-icing)
- 14) Supervision - Real time event decision making and post event evaluation
- 15) Tracking & reporting
- 16) Public education outreach – Homeowners (Includes website link to CC MS4 website)

Training

- 17) MS4 Stormwater Pollution Prevention, Good Housekeeping BMP, IDDE

Litter Prevention & Control

- 18) Litter prevention, control, collection & tracking

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Street Sweeping

Street sweeping programs are implemented in numerous municipal urban and suburban areas, as shown in **Table 5**. Carroll County does not have a street sweeping program for their predominantly rural open section roadways; however, the Maryland Department of Transportation State Highway Administration (MDOT SHA), under its MS4 permit restoration program, regularly performs street sweeping of state routes throughout the County and within the municipalities. The County Bureau of Solid Waste sweeps weekly or as needed at the Northern Landfill. During the permit reporting year, approximately 108 lane miles were swept countywide at varying frequencies, totaling 2,972 linear miles of sweeping during FY2023. These services are performed by a combination of County, municipal, and contractor operations. Municipal co-permittees typically prioritize downtown commercial business districts and higher density residential areas with heavier traffic patterns, expanding out through primary ingress and egress routes to commercial and residential suburb areas. Street sweeping also occurs in all permittee jurisdictions as a BMP, when necessary, for emergency management, construction-related activities, or after special events. Alternative BMP restoration credits for these practices are included in the GDB on the **Appendix B CD**.

Inlet Inspection and Cleaning

All permittees conduct regularly scheduled, complaint-driven, or clog-driven inlet inspection and clean-out programs. Several municipalities perform regular inlet inspection and cleaning. Under the County MS4 permit, approximately 878 storm drain inlets were cleaned countywide using manual and/or vacuum methods during the permit reporting year. **Table 5** shows each permittee's pollution reduction efforts associated with maintenance activities. Alternative BMP restoration credits for eligible practices are included in the GDB on the **Appendix B CD**. Additionally, the MDOT SHA, under its MS4 permit restoration program, performs inlet inspection and cleaning on state routes throughout the County and within most municipalities.

Reducing the Use of Pesticides, Herbicides, Fertilizers, and Other Pollutants Associated with Vegetation Management through Increased Use of Integrated Pest Management

Carroll County and co-permittee municipalities employ various Integrated Pest Management (IPM) and, more specifically, Integrated Vegetation Management (IVM) practices primarily through mechanical control to reduce herbicide usage. During the 2023 permit year, total overall herbicide usage associated with vegetation management and maintenance activities decreased from 226.01 gallons to 171.23 gallons of concentrate. This was an overall 24% decrease from the previous year reporting under the Carroll County MS4. Herbicide volumes continue to vary as maintenance activities and practices adjust to post-pandemic conditions affected by staffing, etc. Various ongoing programmatic efforts and changes are highlighted below.

Carroll County Bureau of Roads Operations reported that mowing crews typically average two rounds of mowing on grass shoulders of all County roads (approximately 988 miles) during the growing season. Due to the discontinuance of a County-run inmate weed trimming program, a targeted guardrail herbicide spray test program was initiated in the spring of 2019 to help control vegetation. Roads Operations reported equipment acquisitions and increased use of articulated

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boom mowers to control vegetation behind guard rails, in addition to hand trimming, spot spraying, and training, in the effort to reduce herbicides applied for the permit year. Roads Operations applied a 41% formulation of glyphosate during the 2023 permit year. The fully implemented guardrail safety weed control program used 85 gallons of herbicide concentrate, for a 27% decrease from the previous year. Each spraying application was documented and recorded as required per Maryland Department of Agriculture (MDA) regulations. All staff applicators maintain MDA licensing and certifications and are required to complete an MDA-approved training program. MDA training and certification sessions cover new laws, regulations, or policies and new pest control or pesticide technologies. Carroll County Roads Operations uses SOPs and evaluates methods for program improvement for the efficient use of limited herbicide application as part of their vegetation management program.

The Carroll County Bureau of Facilities manages over 40 properties. The Bureau's existing integrated vegetation management program consists primarily of mechanical controls (e.g. mowing, hand trimming, and hand pulling weeds). The Bureau also implements effective weed prevention and control practices in landscape beds, including the use of landscape planning, shallow cultivation, weed barriers, hardscapes, mulching, plant selection, and spot spraying, in a significant effort to reduce herbicide usage. Herbicide applications are performed by their trained MDA-licensed and certified staff. The Bureau's herbicide use varies each year, depending on the planned program. During the permit year, 3.6 gallons of herbicide concentrate were used for weed control, providing an 83% decrease from the prior permit year.

The Carroll County Bureau of Parks Maintenance manages pollution reduction efforts at three natural resource-related parks (e.g. Piney Run Park), where they conduct a mechanical-only vegetation control program that includes mowing, weed pulling, and mulching. Parks Maintenance uses licensed herbicide contractors only when necessary, with no applications reported for the permit year.

The Carroll County Regional Airport (CCRA) facility uses mowing, hand trimming, spot spraying, mulching, weed pulling and employee training to manage vegetation and weed control. CCRA has gradually reduced the use of herbicides for vegetation management and weed control over time by using crack sealant in tarmac areas and by reducing the application width along perimeter fencing. Herbicide applications are by MDA-licensed and certified staff.

The Carroll County Bureau of Utilities reported the implementation of mowing and non-chemical alternative weed control practices for the permit year. The Carroll County Farm Museum reported primary practices of mowing, hand trimming, mulching, and weed pulling vegetation management with supplemental herbicide applications by qualified applicator contractor for weed control.

All municipal co-permittees reported the use of mechanical methods including mowing, hand trimming, mulching, and weed pulling as their primary practices for vegetation management. Herbicide usage for municipal co-permittee vegetation maintenance programs varies and fluctuates by municipality, with a nominal overall 1% increase for the permit year. The City of Westminster's herbicide reduction has been maintained from the previous year, influenced by its commitment to becoming a "Bee City USA" affiliate in 2021 and employing alternative

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vegetation management practices. The Town of Manchester installed weed barrier and stone hardscape under some sections of guardrails to control vegetation and weed growth.

All County and municipal co-permittees reported no fertilizer usage for vegetation maintenance for the permit year.

County Bureau of Resource Management staff continue to provide technical materials and training to all County agencies and municipal co-permittees related to integrated vegetation management practices to facilitate the reduction of herbicide usage in vegetation management and weed control where possible.

The overall management of noxious weeds along County Road rights-of-way and on private properties occurs through an agreement with MDA in accordance with state law. Contracted MDA-licensed and -certified personnel perform spot spraying along State and County rights-of-way, as well as on private lands, to protect agricultural cropland. Related herbicide usage for this application is reported and regulated through MDA.

A summary of integrated vegetation management practices for MS4 co-permittees is included in **Table 5**. Chemical use data is provided in the GDB on the **Appendix B CD**.

Deicing Materials

The management of roadway deicing and/or anti-icing material distribution and applications are the responsibility of all permittees within their legal jurisdictional boundaries and summarized under this section.

Staff from County and municipal agencies strive to reduce the use of winter weather deicing materials through research, continual testing and improvement of materials, equipment calibration, and employee training, as shown in **Table 5**. Research and materials, salt management, and equipment calibration are periodically covered in training. All permittee jurisdictions have been provided a copy of the SHA salt management plan and other salt management technical resources. Carroll County Roads Operations has installed “Limit of Maintenance” signs that mark jurisdictional boundaries for road crews for efficient and effective salt applications and to avoid overlap.

Total road salt usage for the MS4 was 1,584 tons during the permit year, which corresponds to an 85% decrease from the previous year. This was primarily due to mild weather conditions, with CC Roads Operations reporting only three winter weather events where materials were applied. Other County agencies and municipalities reported between one and four events where salt and/or brine were applied. The County and municipal co-permittees continue to improve efforts to reduce the use of solid deicers through improved equipment technology training, improved salt brine making equipment quality, tracking and record keeping, and effective decision making by managers and staff. Reported salt brine manufactured from the solid tons was 21,200 gallons, a 45% decrease from the prior year. Brine was applied for anti-icing purposes by County Roads and the City of Westminster.

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Carroll County Department of Public Works (DPW) hosted a Winter Weather Coordination Meeting for the 2022/2023 winter season on Tuesday, November 1, 2022, from 1:00 to 3:00 P.M. at the Carroll County Office Building. The meeting provided an opportunity for information sharing between appointed, elected, emergency medical services, fire, law enforcement, public safety (emergency communications and emergency management), MDSHA, and winter weather operations public works representatives from co-permittee municipalities, the County, and the State. Presentations related to reducing chlorides included: emergency preparedness and winter weather safety, weather event forecasting process, and County Facilities winter weather ant-icing/deicing and best management practice for sidewalks, parking lots, driveways, weather forecasting, and selection of materials used in the effort for public safety and in an environmentally safe manor.

Additionally, Carroll County Roads Operations hosted a Snow and Salt Management Practices training event on December 5, 2022 for pertinent County staff and contractors, covering equipment calibration and efficient salt management practices. The County also assists municipalities with equipment calibrations upon requests. A total of 208 employees under the MS4 permit (136 from County agencies and 72 from municipalities) received salt management training during the permit year.

Carroll County and municipal co-permittees have written salt management plans or procedures as reported in **Table 5**. The County and municipalities plan to submit their respective Salt Management Plans (SMPs) with the third annual MS4 report, as required by the permit. The County Roads Operations, having previously developed their SMP, continues to implement and refine their guidance document. The plan was developed based on their own SOPs, SHA salt management plan guidelines, staff input, and other resources. Carroll County Roads Operations also provides general information to the public about their Snow and Ice Guidelines. The plan can be downloaded and resource information reviewed at:

<https://www.carrollcountymd.gov/government/directory/public-works/roads-operations/carroll-county-department-of-public-works-bureau-of-roads-operations-salt-management-plan/>.

Carroll County Roads Operations also provides an outline of their SOPs and a contact number at: <https://www.carrollcountymd.gov/government/directory/public-works/roads-operations/snowice-removal-guidelines-for-carroll-county-md/operations/>.

The county is divided into 50 snowplow routes. Carroll County employs SOPs that include BMPs for salt management that cover the use of salt from delivery, storage, and handling at salt storage locations to its placement on roadways during winter storms and post-storm clean-up operations. These practices are reviewed at an annual snow season training event that includes calibration of salt truck equipment, SOPs for snow removal, brine application, and how to properly use/maintain material tracking logs for both County staff and contractors. Seventy-two County Roads Operations staff and 11 contractors participated in the winter weather pre-season training.

Planning and preparing are necessary to utilize available resources in an effective and efficient manner. Carroll County Roads Operations begins planning up to four days in advance, and staff continue daily meetings until the day of the event. On the day of the event, meetings are

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increased to every four hours. Trucks are loaded well in advance of the predicted storm start time. Traffic cameras positioned around the state are used to track the conditions in real time. Supervisor vehicles are equipped with thermometers to monitor air and surface temperatures.

Every storm event is treated as a unique event, with decisions made based on actual conditions. Pollution reduction measures include area supervisors performing real-time road inspections to determine if application rates are sufficient and efficient to deliver the best road conditions possible for public safety in a cost-effective manner and in the most environmentally sound way, when practicable. Gravel roads do not receive deicer applications. Stone applications are provided as needed to improve traction. Citizen information is provided on the Roads Operations' webpage, "Clearing the Way Through Carroll County Efficiently," which provides instructions for the public that help salt crews limit the number of return passes necessary to clear roadways and reduce the amount of salt applied. Staff research materials, methods, and technologies and attend national and regional seminars and local workshops when possible to stay current on winter road maintenance practices and affordable deicer/chemical technologies with reduced environmental impact.

In the County and the City of Westminster, the use of salt brine is utilized whenever feasible for pre-treatment of road surfaces in advance of winter storm events forecasted by national and local winter weather advisory sources. Plowing and salt application procedures are designed to limit the number of passes necessary to prevent overlap and overuse of deicer materials.

The County and municipalities manage their salt storage facilities through employee training and the use of good housekeeping BMPs that include sweeping up residual materials into the salt storage structures. On-site spill kits are available at each facility in case of equipment failure during loading operations.

Deicers are used at pertinent facilities managed by the Carroll County Bureau of Facilities and the Carroll County Farm Museum when winter weather conditions affect public and employee safety. Appropriate applications of chemicals are used at facilities having year-round usage, but not where facilities are inactive during the winter season, which is a pollution reduction practice. County Facilities has been transitioning and modifying equipment to significantly improve targeting deicer applications to sidewalks. The sidewalk and walkway deicer used by the County Bureau of Facilities and the Farm Museum is a product that is more effective at lower temperatures and less corrosive. These actions result in the reduction of deicers in solid form in everyday winter event maintenance practices.

Proper management of snow and ice at CCRA is essential for safe winter operations. This includes aircraft and support equipment movements during servicing, taxiing, and takeoff. Ensuring safe conditions on the tarmac for outside boarding of passengers, flight crews, and maintenance ground personnel activities is crucial. No deicing of aircraft is performed at the facility, thereby reducing potential pollutants. Additionally, keeping ahead of winter storm events by using proper mechanical practices minimizes chemical usage until conditions necessitate the use of deicers in dry form. Effective decision making with regard to deicer usage is facilitated through Federal Aviation Administration (FAA) regulations and guidelines, national and local winter weather warning and forecast information, regular surface winter condition

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inspections, and good communication between experienced Fixed Base Operator (FBO) and CCRA airport management personnel. Research for effective, economical deicers that reduce pollutants includes keeping current with industry-related technical resource bulletins and information.

The Board of County Commissioner's "Environmental Advisory Council" (EAC) developed, presented, and published the "Guide to Salt Management for Carroll County Homeowners". The council is comprised of members from a broad cross-section of the community that work with County staff to research environmental policy issues. The EAC advises the Board of County Commissioners to foster environmental education and generally act in the best interest of County residents by promoting effective environmental protection and management principles. The public can download the new salt management guide from the County EAC website at:

<https://www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council/other-eac-publications-topics/>.

Litter

The MS4 program requires permittees to address problems associated with litter and floatables in waterways that adversely affect water quality. Under the fifth-generation permit, the County is required to evaluate current litter control problems associated with discharges into, through, or from portions of its MS4. To date, the County has not identified any significant issues related to litter and floatables within areas evaluated during watershed assessment efforts, nor are there any State listings or identified TMDLs within Carroll County related to litter and floatables. In an effort to promote the continuation of proper litter and floatable disposal, the County provides regular and ongoing education and outreach to residents.

During the 2023 reporting year, Carroll County implemented several programs to reduce and control litter along roadways, which ultimately reduce litter to County waterways. The program for the County and the municipalities included a combination of trash receptacles along streets and in parks, litter ordinances, street sweeping, trash and recycling collection service, litter collection along roads and in public spaces, and trash guards at storm drain inlets. Public education was provided through newsletters, websites, social media, radio/television, informational materials, and special events. Special events included clean-up days, festivals, and fairs.

The County DPW Bureau of Roads Operations has an Adopt-A-Road program to control and reduce litter on Carroll County's roads, inviting public, individual, and civic groups to volunteer. Equipment is provided to volunteers, along with safety guidelines and tips for picking up trash along roadways. Signs recognizing individual or group efforts in helping keep Carroll clean are provided by the County. During the last permit year, thirteen groups actively volunteered to pick up trash along an individually designated mile stretch of roadway, once in the fall and once in the spring, as part of the Adopt-A-Road program.

County DPW staff also contributed to litter collection efforts directly. During the last permit year, staff spent 874 hours on roadside trash pickup. Additionally, the Bureau of Facilities provides trash and litter receptacles at facilities where they are considered practicable. Trash

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nuisance remediation in the County is primarily complaint-driven and site-specific. Contractors hired by the Carroll County DPW's Roads Operations abate the trash. In the last permit year, 26 complaints were received.

Carroll County's Recycling Operations offer recycling opportunities for all Carroll County residents and businesses. Curbside, single-stream recycling has been implemented since 2007, making it easy and convenient for residents to participate. Most standard household recyclables can simply be placed at the curb. For residents or businesses who wish to haul their own waste and recyclables to the landfill, the County provides a drop-off site for waste and a full-service Recycling Center at the Resource Recovery Park. Carroll's Resource Recovery Park is conveniently located in the center of the county. Currently, there is no charge for recycling at the County's drop-off location.

The Recycling Center accepts all materials recycled through the County's curbside program, plus many items that are not eligible for curbside pickup, including textiles, rigid plastics, electronics, car and truck batteries, used motor oil, antifreeze, and cooking oil. Aluminum can reimbursement is also available and fluctuates with the market value. White goods and scrap metal are also accepted, and the Habitat for Humanity ReStore offers onsite recycling of reusable building materials and other household items.

Yard waste is prohibited from being mixed with household waste or in plastic bags for disposal. Citizens countywide can dispose of grass, leaves, and branches in the yard waste area of the Resource Recovery Facility. These items are mulched by a third party. Several municipalities offer curbside yard waste pickup. Citizens are also encouraged to consider backyard composting. Hampstead, Manchester, Mount Airy, Sykesville, and Westminster provide bulk trash pick-up to encourage proper disposal of trash and debris to help promote better water quality. In addition, several municipalities have an oil and antifreeze recycling program managed by either the municipality or Maryland Environmental Service (MES).

The Carroll County Recycling Office has developed and implemented a county-wide public education and outreach program to reduce littering and increase recycling. The Recycling Office hosts a webpage that provides extensive public education materials and opportunities (www.recyclecarroll.org). The homepage provides general information and materials on recycling, as well as information targeted to recycling in the home, at schools, and for businesses. All recycling events are posted on the website, and related educational materials and documents are available as well. The Recycling Office also hosts a Facebook page for disseminating regular information and updates.

Recycling Office staff attend many festivals and community events, where an educational booth and materials are provided and staff are available to answer questions. Staff have also partnered with the Carroll County Public Schools (CCPS) Science, Technology, Engineering, & Math (STEM) programs upon request to educate and engage students, usually in elementary school, on issues related to recycling that coincide with the curriculum.

The Recycling Office offers a semi-annual household hazardous waste collection to ensure household chemicals are properly discarded. During the last permit year, Household Hazardous

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Waste drop-off events took place on October 22, 2022, and April 21, 2023. Events such as these provide county residents with a safe means for disposing of household chemicals, shredding documents, and learning about measures to protect the environment.

The County’s annual rain barrel and compost bin sale was held on Saturday, April 15, 2023, providing these items to residents at a reduced cost. Rain barrels and compost bins were pre-ordered for pick up at the County Office Building. Composting information was available for residents as well as a demonstration for reducing waste.

In addition to the educational materials available on the Recycling website and at events, information is routinely disseminated to the public through mailers and advertisements on local print media, local cable channels, and local radio stations. Outreach information is provided to residents about hard-to-recycle items such as CFL bulbs, pharmaceuticals, kitchen oil, and latex paint. County residents are encouraged to dispose of unused prescription and non-prescription drugs at designated law enforcement agencies throughout the county.

The NPDES permit also requires the County to remove from or prevent from entering its MS4 11 tons of litter and debris annually. The County, municipalities, and local citizen groups work collectively to clean litter from roads, parks, streams, and other public spaces. During the last permit year, a total of 13.8 tons of litter was collected. Whenever litter was weighed directly, the precise weight was used for tracking. If not explicitly weighed, the number of bags or items were recorded, and weights were estimated based off of best available data. For trash bags, an average weight of 15 or 20 pounds per bag was used for contractor- or kitchen-sized bags, respectively. The weight of bulk items was also estimated on best available information. For storm drain cleaning, the County used a factor of 8.9% of the total weight to estimate the portion that was litter, which is an approved method used by Baltimore County for assessing progress in their Trash TMDL. **Table 6** summarizes these efforts for the last permit year.

Table 6
Litter Cleanup Efforts for Last Permit Year

Category	Maintenance Program or Event Name	General Location & Additional Details	Staff or Public?	Total Weight (lbs)
Cleanup Event	CC BRM Dickenson Run Stream Cleanup	11/5/2022	Public	512
	CC BRM Piney Run Stream Cleanup	4/18/2023	Staff	2,419
	CC BRM Ronsdale Rd SWM Facility Clean-up	1/7/2023	Staff	120
	CC BRM Trevanion Retrofit Cleanup	4/19/2023	Public	280
	City of Taneytown Earth Day cleanup	Various parks and main streets	Public	140

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Category	Maintenance Program or Event Name	General Location & Additional Details	Staff or Public?	Total Weight (lbs)
	City of Taneytown Meade's Crossing Cleanup	Meade's Crossing, and all entrances to community, to include Angell Rd	Public	100
	City of Westminster McDaniel Cleanup Day	JeannieBird Baking Company sponsored a McDaniel College Clean Up Day. During this event students from the college cleaned up Dutterer Park and the sediment pond at that location	Public	75
	Town of Mt Airy Main St Cleanup	Main Street cleanup event	Public	60
	Town of New Windsor - Volunteer residents from Union Square	MD-31 Slingluff Lane to Church St.	Public	145
	Town of New Windsor Beautification Day	Fountain Park, Lion's Club Park & Main St. Park	Public	80
Group Litter Cleanup	Adopt-A-Road Program	Year-round volunteer program administered by County DPW	Public	3,627
	Charlotte's Quest Nature Center	Town of Manchester; Volunteers clean trash once a week	Public	250
	Friends of Liberty Reservoir	Winter through Spring 2023	Public	786
	Girl Scouts Troop #2343	Bennett Cerf Park 9/4/22 & 4/16/23	Public	198
	Helping Hands Keep Our Parks Green Program	Westminster Community Pond & Freedom Park; Winter through Spring 2023	Public	560

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Category	Maintenance Program or Event Name	General Location & Additional Details	Staff or Public?	Total Weight (lbs)
	Town of Mt Airy Adopt-A-Road	Town limits	Public	300
	Town of Mt Airy Rails to Trails	Seven cleanup events	Public	800
	Town of Mt Airy Watkins Park	Two cleanup events	Public	40
	Town of Mt Airy Windy Ridge	Five cleanup events	Public	100
Staff Litter Cleanup	City of Taneytown Staff Litter Collection	Antrim Boulevard from MD 140 Circle to Trevanion Rd.	Staff	200
	City of Westminster Staff Litter Collection	The City of Westminster has 1 full-time employee dedicated to cleaning the City streets, sidewalks and parks of litter	Staff	6,000
	Town of Manchester Staff Litter Collection	Town-wide parking lots, roadways, parks, and pavilions	Staff	730
	Town of New Windsor Staff Litter Collection	Recreational areas, parks, ball fields and public spaces during mowing	Staff	320
	Town of Union Bridge Staff Litter Collection	Town-wide throughout the year	Staff	200
Storm Drain Cleaning	City of Westminster Storm Drain Cleaning	City-wide throughout the year	Staff	196
	Town of Manchester Storm Drain Cleaning	Town-wide throughout the year	Staff	45
	Town of New Windsor Storm Drain Cleaning and Street Sweeping	Church, Lower Main & Water St.	Staff	534
	Town of Union Bridge Storm Drain Cleaning	Town-wide throughout the year	Staff	68
	Towns of Hampstead Storm Drain Cleaning	Town-wide throughout the year	Staff	5,901
SWM Facility Maintenance	CC BRM Stormwater Facilities	County-wide throughout the year	Public	496
	Town of Hampstead Stormwater Facilities	Dam #503; Small Crossings; NC Farms Sec 4; Dam #505; Sycamore Dr	Staff	1,045

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Category	Maintenance Program or Event Name	General Location & Additional Details	Staff or Public?	Total Weight (lbs)
	Town of Manchester Stormwater Facilities	Town-wide throughout the year	Staff	925
	Town of New Windsor - Atlee Ridge SWM Outfall	Atlee Ridge and Blue Ridge Facilities	Staff	320
Total Weight (tons)				13.8

5. Public Education



The permit requires Carroll County to implement a public education and outreach program to reduce stormwater pollutants. Outreach efforts may be integrated with other aspects of the County’s activities.

Hotline

The permit requires maintenance of a compliance hotline or similar mechanism for public reporting of water quality complaints, including suspected illicit discharges, illegal dumping, and spills. Individuals, including those within the co-permittee municipalities, can call the non-emergency Stormwater Pollution Prevention Hotline at 410-386-2210. The hotline is readily visible on the Stormwater Pollution Hotline webpage.

 www.carrollcountymd.gov/government/directory/planning-land-management/protecting-carroll-county-waters-mpdes/stormwater-pollution-hotline/

Websites

- Municipal Websites: All municipalities host websites that include links to various educational publications, electronic municipal newsletters, relevant Carroll County webpage(s), EPA, and/or MDE websites.
- “Planning & Land Management”: Carroll County PLM hosts several webpages that provide materials and resources to residents and local businesses.
 <https://www.carrollcountymd.gov/government/directory/planning-land-management/>
- “Protecting Carroll County Waters (NPDES)”: A dedicated NPDES webpage hosted by PLM, which is the primary hub for information related to the NPDES MS4 permit. The website includes links to the following pages, which are located either within the *Protecting Carroll County Waters* website or under the Bureau of *Resource Management* website:
 www.carrollcountymd.gov/government/directory/planning-land-management/protecting-carroll-county-waters-mpdes/
 - “Stormwater Pollution Hotline”: This page contains the non-emergency stormwater pollution hotline phone number, as well as the emergency contacts for each public water


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- and sewer system. There is a quick link to this page from the main webpage, and the municipalities provide a link to this page from their municipal websites.
- **“NPDES Permit:”** This page contains the permit that is currently in effect for Carroll County and its municipal co-permittees.
 - **“Annual Reports:”** NPDES MS4 Annual Reports for each year since 2014 are available.
 - **“Watershed Restoration Plans:”** The Bureau of Resource Management (BRM) hosts this page, which includes the characterization plan, stream corridor assessment, and watershed restoration plans originally approved by MDE for each of Carroll’s nine watersheds.
 - **“Stormwater Projects:”** An interactive map provides information on planned, active, and completed stormwater projects.
 - **“Public Outreach:”** This page describes actions the average property owner may take to help prevent stormwater runoff pollution. Carroll County public outreach publications can be found here, along with outreach videos and workshop information.
 - **“Carroll Clean Water Partnership:”** Information is provided on this voluntary partnership program that encourages and recognizes local businesses that identify and address potential pollutants and good housekeeping measures.
 - **“Links | Resources:”** Links to additional information on the web regarding various aspects of the permit, stormwater pollution prevention, public outreach, and more are provided.
- **“Bureau of Resource Management:”** In addition to hosting the Watershed Restoration Plans (called “Watersheds” on the BRM site) and Stormwater Projects webpages (called “Projects” on the BRM site), the BRM’s “Resource Management” website hosts additional educational materials for both children and homeowners on its “Outreach” page. Links to various agricultural and urban BMPs are also available from this website. Copies of the Bureau’s quarterly newsletter, *Down to Earth*, are available on the webpage, which include educational information and reporting on stormwater activities and program implementation.
 - 🖨️ **“Resource Management:”** www.carrollcountymd.gov/government/directory/planning-land-management/resource-management/
 - 🖨️ **“Outreach:”** www.carrollcountymd.gov/government/directory/planning-land-management/resource-management/outreach/
 - **“Water Resource Coordination Council:”** The WRCC webpage provides access to the resolution creating the WRCC. The Memorandum of Agreement (MOA) and Memorandum of Intent (MOI) prescribing the coordination between the County and municipalities on permit implementation and compliance are also available for download.
 - 🖨️ carrollcountymd.gov/government/boards-commissions/water-resource-coordination-council/
 - **“Environmental Advisory Council:”** The Carroll County EAC website provides access to materials related to stormwater pollution, TMDLs, recycling and solid waste reduction, and other relevant environmental topics. Presentations are posted on the website for public access and viewing. Reports and information related to relevant projects completed and topics discussed by the EAC are available to view as well. These include links to EAC-

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sponsored business and general public stormwater workshops and public education materials that have been developed.

 EAC: carrollcountymd.gov/EAC/


 “Stormwater:” www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/stormwater/

- “Stormwater Workshop for Homeowners:” This webpage provides information on previous and upcoming workshops designed to educate homeowners and residents on minimizing stormwater runoff and preventing stormwater pollution from residential properties. Materials and resources related to stormwater pollution prevention and past workshop presentations are available for viewing by the public as well.
 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/stormwater/stormwater-workshop-for-homeowners/
- “Stormwater Workshop for Businesses:” This webpage provides information on previous and upcoming workshops designed to educate Carroll County businesses on good housekeeping and BMPs that will protect water quality and prevent issues for these businesses in the future. Materials related to stormwater pollution prevention and past workshop presentations are available to the public as well.
 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/stormwater/stormwater-workshop-for-businesses/
- “Stormwater Workshop for Municipal Residents:” This webpage provides information and materials related to a workshop geared toward residents of Carroll’s municipalities. The workshop shared information similar to the countywide general homeowner workshop but tailored the information to residents of the Hampstead and Manchester communities.
 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/stormwater/stormwater-workshop-for-municipal-residents/
- “Welcome to the Carroll County Recycling Office:” The Carroll County Recycling Office hosts a website which provides extensive public education materials and opportunities. In addition to waste diversion, promotion of recycling is also intended to reduce litter. The homepage provides general information and materials on recycling, as well as information targeted to recycling in the home, at schools, and at businesses. All recycling events are posted on the website, and related educational materials and documents are posted and available for download. The Recycling Office also hosts a Facebook page for followers to receive regular information and updates. Public Service Announcements are periodically run on WTTR (a local radio station), the County’s social media outlets, and various other venues.
 www.carrollcountymd.gov/government/directory/public-works/office-of-recycling/

Materials and Publications

All permittees provide stormwater pollution prevention materials at their municipal offices, at the Carroll County Office Building, on their websites, through social media, and at various events held throughout the year.

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- “Protecting Carroll County Waters” and “Bureau of Resource Management:” The [Protecting Carroll County Waters \(NPDES\)](#) website and the [Bureau of Resource Management](#) website include resources related to the regulated community. Miscellaneous information, links, and materials are available. Brochures are available that describe good housekeeping practices applicable to specific types of businesses that tend to be more vulnerable to having illicit discharges. The materials are provided at public events and workshops, available online, and provided to property owners during visual inspections and courtesy visits. The “Protecting Carroll County Waters” website serves as a comprehensive hub for information relevant to NPDES MS4 information for Carroll County and its municipal co-permittees.
- “Down to Earth” Newsletter: The BRM produces a quarterly [newsletter](#), *Down to Earth*, which is available on the website, emailed to recipients via a database of interested parties, and available in hardcopy in multiple locations. The newsletter content includes educational articles for the general public, as well as updates on stormwater projects and events and other relevant happenings.
- Municipal Newsletters: Each municipality also produces a regular newsletter for its citizens. Municipal newsletters also periodically share event information, educational content, and other material relevant to stormwater pollution prevention.
- EAC E-Newsletter: The EAC sends out a periodic electronic newsletter which shares information related to EAC projects, including those related to stormwater, water quality, water reuse, recycling, litter, salt management, and other relevant projects.
- EAC Publications: The EAC has developed several public outreach publications to provide businesses and the general public with information on various related issues. These include guidance documents on tree planting, salt management, litter, invasive plants, and environmental stewardship in Carroll County.
 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council/other-eac-publications-topics/

Events

All permittees participate in public outreach efforts during the permit year. The permit requires Carroll County to conduct a minimum of 25 outreach efforts per year. Stream clean-ups and tree plantings are implemented throughout the county and coordinated as a volunteer or outreach event when feasible. A complete listing of specific FY2023 events can be found in **Table 7**. The table also lists regularly scheduled events and outreach efforts.

In January 2021, with the challenges of the pandemic, BRM staff developed the *Guide to MS4 Public Outreach During COVID-19 for Carroll County Municipalities*. While the document provides municipalities and County staff step-by-step guidance on how to successfully plan a public outreach or involvement event during the pandemic, the majority of the steps outlined in this guide are relevant for municipal implementation of public outreach events and activities in general.

**Table 7
Carroll County Public Outreach Events FY2023**

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
Outreach Events								
Carroll County Rec and Parks Family Summer Bash	Carroll County Sports Complex; Water Resource Booth	7/15/2022 4 - 9 pm	6	400	10	5	N/A	Rain barrel (donated by Office of Recycling); Handouts
National Night Out - Hampstead	War Memorial Park on Main Street, Hampstead. Materials and direct discussion with attendees in several municipalities by MS4 co-permittees.	8/2/2022	2	4	1	3	\$50	AWWA Brochures and Carroll County Flyers
McDaniel College Class Field Trip	Wetland Ecology class at McDaniel College – site visit to Brynwood and Woodsyde Stream Restorations	9/7/2022	5	30	6	2.5	N/A	Staff time; posters
McDaniel College Class Field Trip	Environmental Sustainability class at McDaniel College – site visit to Willow Pond Retrofit and Stream Restoration	9/16/2022 1:30 - 4 pm	8	30	16	2.5	N/A	Staff time; posters
Westminster Fall Fest	City Park; 4-day event where an information booth is hosted, pertaining to litter control, storm water information and water and wastewater initiatives.	9/22-25/2022 5-10 pm Thursday and Friday; all day Saturday and Sunday	1 per day	40,000	3	30	\$100	Staff time; handouts
Taneytown Harvest Festival	Taneytown Memorial Park; Water Resource Booth provided outreach materials on stormwater, pollution prevention, tree planting, salt management, and homeowner BMPs	9/24/2022 11 am - 3 pm	5	325	10	4	N/A	Staff time; Handouts

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
New Windsor Music on Main	Town of New Windsor downtown; Town booth provided outreach materials on stormwater, pollution prevention, tree plantings, salt management, and homeowner BMPs	10/1/2022 1 pm – 7 pm	2	450	2	6	N/A	Staff time; Handouts
Household Hazardous Waste Event - Fall	Carroll County Maintenance Center; Household hazardous waste collection and paper shredding event	10/22/2022 8 am - 12 pm	6	Unknown	Unknown	4	N/A	Staff time
New Windsor - Bulk Trash Event	Town of New Windsor. Geer Lane Public Works Facility	10/22/2022 8 am - 12 pm	2	2	4	4	\$750	Roll Off Containers
Taneytown Elementary School 4th Grade Watershed Model Presentation	Taneytown Elementary School; Discussed watersheds, stormwater runoff, pollutants, and pollution prevention	10/25/2022 10:30 - 12 pm	2	90	16	1.5	N/A	Staff time; watershed model; maps
TreeLay	Wakefield Valley Park	10/29/2022	1	35	8	4	\$10,000	Alliance for the Chesapeake Bay funding
Monocacy River Board Stream Cleanup – Atlee Ridge Park, Dickenson Run	Carroll Co. Monocacy River Board hosted a stream clean-up on Dickenson Run through Atlee Ridge Park in New Windsor, MD.	11/5/2022 10 am - 12 pm	5	8	1.5	2	N/A	Staff time; Alliance for the Chesapeake Bay materials

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
Carroll County Environmental Symposium	Carroll Community College; Student Recycled Art Contest; Water Resource Booth; Environmental Group networking event	11/12/2022 9 am – 12 pm	10	150	100	3	\$1,821	Staff time; Handouts; Incentives; Prizes
America Recycles Day	Carroll Co Recycling Office; Recycling materials and direct discussion with attendees.	11/15/2022	1	Unknown	Unknown	Unknown	N/A	Staff time; Handouts
Monocacy River Board Tree Planting Maintenance-Bollinger Park	Carroll Co. Monocacy River Board hosted a tree planting maintenance of a 13-acre planting at Bollinger Park, part of the City of Taneytown's park system.	11/19/2022 9 am - 12 pm	4	19	1.5	3	N/A	Staff time
Mount Airy Elementary School Outreach Bookmarks	Sent stormwater outreach bookmarks to students who participated in a recycled art project	11/25/2022	2	30	1	N/A	N/A	Staff time; printed materials
Carroll Arts Council Festival of Wreaths	Recycling materials and direct discussion with attendees.	11/26 – 12/3/2022 10 am – 7 pm	1	Unknown	Unknown	9	N/A	Staff time
EAC Presentation on NPDES MS4 Permit	Carroll Co Office Building; permit overview; meeting open to public	2/14/2023 6:30 pm	6	4	15	1	N/A	Staff time
Healthy Forests Healthy Waters	Wakefield Valley Park	3/7-9/2023	Unknown	17	8	3 days	\$115,000	Chesapeake & Coastal Bays Trust Fund
Rain Barrel and Compost Bin Sale	Carroll Co Office Building; Rain barrel and composting event hosted by Carroll Co. provides rain barrels and compost bins to residents at a reduced cost.	4/15/2023 8 am - 1 pm	3	50	16	5	N/A	Staff time

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
Sykesville Spring Park Clean-up and Bulk Pickup	Keep Sykesville Beautiful event to pick up litter and debris and provide a drop-off location for bulk items.	4/15/2023	Unknown	20	Unknown	Unknown	Unknown	Unknown
Trevanion Terrace Retrofit Cleanup	Carroll Co. Monocacy River Board hosted a stream clean-up along Trevanion Terrace, a tributary to Upper Monocacy River in Taneytown, MD	4/19/2023	4	7	2	1.5	N/A	Staff time
Household Hazardous Waste Event - Spring	Maintenance Center; Household hazardous waste collection and paper shredding event	4/21/2023 8 am - 12 pm	6	Unknown	Unknown	4	N/A	Staff time
Gerstell Academy Earth Day Event	McDaniel College Environmental Center; 18 stations that included water quality sampling, groundwater, restoration, riparian buffers, geology, soil conservation, watersheds, and nonpoint source pollution	4/21/2023 10 am – 2 pm	19	450	80	4	\$25	Leaf packs, visuals, maps, staff time
Westminster McDaniel Cleanup Day	Jeannie Bird Bakery, in Westminster, sponsored a McDaniel College Clean Up Day. During this event, students from the college cleaned up Dutterer Park and the sediment pond at that location.	4/21/2023 1-5 pm	2	12	Unknown	4	N/A	Staff time
Hampstead Tree Commission Tree Plantings	Panther Park, Brittany Lane, Wellesley Ct, and North Carroll Farms	11/29/2022, 4/22/2023, & 5/13/2023	4	20	Unknown	Unknown	Unknown	Staff time
Earth Day Event - Master Gardeners	Piney Run Park; Water Resource Booth provided outreach	4/22/2023 1-4 pm	6	60	24	3	N/A	Staff time

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
	information on stormwater and pollution prevention							
Taneytown Earth Day Cleanup	City of Taneytown various parks and main streets	4/22/2023 1-3 pm	7	35	Unknown	2	N/A	Staff time
Carroll County Envirothon	Partnership with Carroll Co. Soil Conservation District to provide hands-on environmental and natural resource management education to high school students.	3/1/2023 7:45 am – 3:15 pm 3/26/2023 7:45 am – 3:30 pm	1	Unknown	Unknown	14	N/A	Staff time; handouts; materials
County Commissioner Presentation on NPDES MS4 Permit	Carroll County Office Building; televised and publicly broadcast overview of the County MS4 Permit requirements	4/27/2023 11-11:20 am	6	Unknown	15	0.3	N/A	Staff time
City Nature Challenge	Sponsor of the Baltimore City Nature Challenge bioblitz event. Also provided support for identification.	4/28 - 5/1/2023	1	550	2	96	N/A	Staff time
Taneytown Spring Community Flea Market	City of Taneytown Memorial Park; provided pamphlets that addressed stormwater pollution	4/29/2023 9 am to 1 pm	1	200	1	4	N/A	Handouts
New Windsor Beautification Day	Town of New Windsor Fountain Park, Lion's Club Park & Main St. Park; Town cleanup event	4/29/2023	2	10	2	4	\$850	Flowers, mulch & bags
Earth Day Annual Middle School Outreach	Shiloh Middle School; Four stations related to watersheds, stormwater, water quality, riparian buffers	5/4/2023 9 am - 3:15 pm	10	65	12	6.25	N/A	Posters, staff time; trees; supplies

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
New Windsor Bulk Trash Event	Town of New Windsor, Geer Lane Public Works Facility	5/6/2023 8 am to 12 pm	2	2	4	4	\$750	Roll Off Containers
Westminster Flower and Jazz Festival	Festival in downtown Westminster. City booth with information on stormwater BMPs, rain gardens, and water and wastewater initiatives.	5/13/2023 11 am to 4 pm	1	10,000	1	5	N/A	Staff time; handouts
Monocacy River Board Tree Planting Maintenance-Memorial Park	Carroll Co. Monocacy River Board hosted a tree planting maintenance of a 3-acre planting at Memorial Park, part of the City of Taneytown’s park system.	5/16/23	1	5	1.5	1.5	N/A	Staff time
Hampstead - Hampstead Day	Downtown Hampstead; Town booth with handouts on homeowner BMPs, salt, tree plantings, etc.	5/20/2023	8	3,000	1	Unknown	N/A	Staff time; handouts
Maryland Municipal League Summer Conference	Town of Hampstead booth - materials and direct discussion with attendees.	6/26-27/2023	2	3	2	13	\$100	Staff time; handouts
Mount Airy Farmer’s Market	Railyard	Jul – Sep 2022 Jun 2023	3	700+	5	25	250	Staff time
Ongoing Outreach Initiatives and Programs								
Adopt-A-Road Program	Carroll Co. DPW Road Operations sponsors an Adopt-A-Road program for volunteer groups interested in litter and debris clean-up to keep local roadways and streams clean. Currently, more than 20 roads have been adopted.	Multiple/ Year-round	5	13 Groups	N/A	N/A	N/A	Staff time; trash bags; other materials




Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
BRM Newsletter	Produced quarterly. The e-newsletter sent to contact list and posted on County website. Print copies are provided in the County office building.	Quarterly	5	235	N/A	N/A	N/A	Staff time
Carroll Environment Facebook Page	Posts almost daily. Topics include restoration, stormwater, flooding, water resources, recycling, etc.	Multiple times per week	7	508	N/A	N/A	N/A	Staff time
Carroll Co. Farm Museum Environmental Site Design Educational Exhibits	Materials and discussion. On-site stormwater education including working bio-filtration ESD BMP with interpretive signs for visitors, school tours, etc. that explain stormwater management, pollution reduction, and water quality.	Multiple/ Seasonal	N/A	N/A	N/A	N/A	N/A	N/A
EAC Newsletter	Digital newsletter sent out periodically to update recipients regarding EAC activities and to provide outreach and education.	Multiple / Year-Round	1	N/A	15	N/A	N/A	Existing County platform for electronic communications
Helping Hands Keep Our Parks Clean Program	Carroll Co. Recreation and Parks campaign to encourage community involvement and to help keep parks clean. Promotes local stewardship and care of parks through litter pick-up, similar to the Adopt-A-Road program. Volunteers make a seasonal commitment to care for a specific park with litter prevention and regular pick-up events.	Multiple/ Year-Round (March through December)	N/A	N/A	N/A	N/A	N/A	N/A
Keep Sykesville Beautiful Campaign	Local partnerships use the Keep America Beautiful framework for community education and hands-	Multiple/ Year-Round	N/A	N/A	N/A	N/A	N/A	N/A

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
	on stewardship to reduce litter, encourage recycling, promote grassroots volunteerism, and make sustainable improvements possible for communities of all sizes.							
Manchester - Loose trash notification	Town of Manchester. Online, cable TV channel, Town Council meeting	Year-round	2	Unknown	3	Ongoing	N/A	Staff time
Mount Airy Social Media	Town Social Media – Facebook, Instagram, YouTube	Multiple/ Year-Round	2	12,000+	10	N/A	N/A	Staff time
Mount Airy Sustainability Commission Outreach	Town of Mount Airy hosted environmental educational outreach booth at Main Street Association and Town-sponsored Farmer’s Market through growing season.	Multiple/ Seasonal	N/A	N/A	N/A	N/A	N/A	Staff time
Municipal Newsletters	Typically produced quarterly. The newsletters are sent to municipal property owners and posted on County website. Print copies are provided in the municipal offices.	Quarterly	16	N/A	N/A	N/A	N/A	Staff time
Websites	County and all municipal websites post public outreach materials, links, and events	Multiple/ Year-Round	N/A	N/A	N/A	N/A	N/A	Staff time

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Media and Social Media

The County engages in regular outreach efforts through media resources, such as social media, press releases, and radio.

- Carroll Environment Facebook Page: The County hosts a Facebook page called “Carroll Environment” that is managed by PLM staff. Its purpose is to provide information to citizens on environmental topics, ranging from general education material to specific updates on BRM restoration projects and volunteer opportunities. Posts are made about four times per week, and the page currently has over 500 followers.
 <https://www.facebook.com/carrollenvironment/>
- Cable TV: The County actively utilizes cable TV resources to convey public service information. This may include upcoming events, presentations, good housekeeping BMPs, and other resources. In FY2018, PLM staff, in conjunction with Carroll’s Community Media Center (CMC), produced a video on BMPs for homeowners entitled “Stormwater Pollution Prevention for Homeowners – Stormwater and Homeowners.” The video introduces homeowners to stormwater and why it is important. The video continues to be available online and at the County’s social media sites, including the County’s YouTube channel.
 <youtu.be/jtjcuGhixL8?list=PLwx-zJZmRR9swwLZb0WMo2r-sJDQ5lZDa>
- Recycling News Release Series: From June 25 through July 22, 2019, a five-part series of news releases were sent out to help raise awareness for recycling. The series topics included Recycling 101; No Plastic Bags in Curb-side Recycling; Dos and Don’ts of Recycling... When in Doubt, Throw it Out; Recycling... Awkward Items; and Recycling... A Final Note. The news releases were also available on the County website.
- Lawn Clippings Outreach Video: In addition to their website public outreach information, Carroll County Road Operations has been posting public outreach videos on the County’s Facebook social media site entitled “*Keeping Lawn Clippings on Your Lawn*” for road safety and environmental protection. Roads Operations also periodically posts winter weather storm event preparation efforts and emergency snow plowing emergency operations information.
 facebook.com/CarrollCountyGovernmentMD/videos/1099263520258841/?_so_ =channel_tab&_rv_ =all_videos_card

Many of the municipalities also provide information on stormwater pollution prevention and other related topics through social media and cable television.

Appointed and Staff Groups

- Environmental Advisory Council (EAC): Carroll County continues to provide an open forum on environmental issues and concerns through the Carroll County EAC. This Commissioner-appointed citizen board holds monthly meetings that are open to the public. The EAC functions at the direction of the Carroll County Board of Commissioners, works

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cooperatively with County environmental staff to research environmental policy issues, advises the Board of County Commissioners on environmental issues, fosters environmental education, and acts in the best interest of County residents by promoting effective environmental protection and management principles.

 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/

- **Environmental Action Awards:** In its role to promote environmental awareness and outreach, every other year, the EAC accepts nominations for Environmental Action Awards. In 2019-2020, the EAC evaluated its awards process, including the awards categories, nomination criteria, and evaluation criteria. The goal was to increase participation and improve the process moving forward. Winners are recognized in a joint ceremony with one or more members of the Board of County Commissioners, in the press, and on the EAC's website, historically in conjunction with Earth Day and/or Arbor Day, or more recently as part of a larger event. The 2023 award winners were recognized in a presentation ceremony at the 2023 Annual Environmental Symposium with EAC members and the President of the Board of County Commissioners on October 28, 2023. Information about the award winners is available on the EAC webpage and was disseminated through a news release, social media, and newsletters (hardcopy and electronic). The next awards cycle will be held in 2025.

 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/environmental-awareness-awards/

- **Environmental Stewardship in Carroll County:** The EAC's booklet, which is updated every other year, is available on the website and is provided at various venues. The booklet describes efforts and initiatives undertaken by the County to demonstrate environmental stewardship and protection, including stormwater mitigation and management projects and progress. The booklet was updated and approved during the permit year and published in August 2023.

 www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council-eac/environmental-stewardship-in-carroll-county/


- **Carroll County Monocacy River Board:** The Carroll County Monocacy River Board serves to advocate for the Monocacy River, its watershed, and the varied resources contained within. The Board is charged with promoting best management practices, advocating for sustainable land uses, and encouraging the restoration and enhancement of the natural resources within the Monocacy River Watershed. This mission is accomplished through public education, voluntary participation, and fostering multi-jurisdictional partnerships that will maintain and improve the River's water quality and ecological health while respecting the property rights of landowners within the watershed.

 <https://www.carrollcountymd.gov/government/boards-commissions/carroll-county-monocacy-river-board/>

- **Solid Waste Advisory Council (SWAC):** The Carroll County SWAC was formed in 2014 by the Board of County Commissioners. The purpose of the SWAC is to assist County staff in

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advancing sustainable, responsible, and cost-effective practices of Solid Waste Management and Recycling. The SWAC researches and discusses issues related to solid waste and recycling and provides recommendations to the Board as requested. The group meets on an as-needed basis at this time, and all meetings are open to the public. A member of the EAC sits on both councils and reports the status of SWAC initiatives to the other EAC members.

- Maryland Recycling Network: In addition, the Carroll County Sustainability Manager sits on the Board of Directors for the Maryland Recycling Network, which provides an additional resource to the County for public education content and influence.
- Water Resource Coordination Council: The WRCC was formed in 2007 through a cooperative partnership between the County, the eight municipalities, and the Carroll County Health Department by a formal joint resolution to discuss and address issues related to water resources. The WRCC discusses and collaborates on pertinent issues related to water, wastewater, and stormwater management. The monthly meetings, which are open to the public, provide a valuable opportunity for members to coordinate on various current issues. NPDES technical and administrative issues are discussed on a regular basis, including monthly updates on co-permittee stormwater projects.
 www.carrollcountymd.gov/government/boards-commissions/water-resource-coordination-council/
- Mount Airy Water and Sewer Commission: This Commission was created to monitor all functions of the Town's water and sewer infrastructure and contribute useful research to improving system efficiency. This also includes detailed research and analysis into water and sewer operations, costs, and rates for the Town's citizens. These meetings are open to the public.
- Annual Clean-Up Days: Several municipalities hold an annual clean-up day to collect trash from streams, wetlands, floodplains, and/or stormwater facilities, as well as other activities that improve the watershed and reduce the amount of trash and other pollutants to streams and waterbodies. The Mount Airy Parks and Recreation Commission promotes ongoing clean-up efforts for the Rails to Trails right-of-way from the downtown area to Watkins Park.
- Municipal Councils and Planning Commissions: The town/city councils and the municipal planning commissions meet regularly. Discussions related to the expenditure of funds and approval of stormwater projects may take place at these meetings, which are open to the public. **Table 8** provides the regular meeting time for each of the co-permittee's public bodies.

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Table 8
Co-Permittee Elected Officials and Planning Commissions
Regular Meeting Schedule

Jurisdiction	Elected Body	Planning Commission
Board of County Commissioners	Every Thursday	3 rd Tuesday & 1 st Wednesday of month
Hampstead	2 nd Tuesday of month	4 th Wednesday of month
Manchester	2 nd Tuesday of month	3 rd Tuesday of month
Mount Airy	1 st Monday of month	Last Monday of month
New Windsor	1 st Wednesday of month	4 th Monday of month
Sykesville	2 nd & 4 th Monday of month	1 st Monday of month
Taneytown	2 nd Monday of month	Last Monday of month
Union Bridge	4 th Monday of month	3 rd Thursday of month
Westminster	2 nd & 4 th Monday of month	2 nd Tuesday of month

Public Outreach Plan

The Public Outreach Plan was updated in December 2022 for the fifth-generation permit requirements. The primary goal of the *Carroll County and Municipalities NPDES MS4 Public Outreach Plan* is compliance with the permit. This plan provides a review of the public outreach opportunities currently available to residents and businesses in Carroll County and the municipalities regarding specific requirements of the permit and related stormwater program activities. As a result of this review, activities were suggested to round out those opportunities and improve outreach. The intent is to raise public awareness and encourage residents and businesses to take measures to reduce and prevent stormwater pollution. This is a dynamic, iterative plan, which will be revised on a regular basis as projects are completed and other needs arise. **Table 9** indicates the activities/programs under the Public Outreach Plan objectives that have been implemented thus far. The Public Outreach Plan is being submitted with the first annual report (FY2023) of the fifth-generation permit as **Appendix I**.

Table 9
Public Outreach Plan: Activities Implemented Under Plan Objectives

Objective	Activity/Program	Page	Implementation
7.1 Enhance comprehensive user-hub website to provide additional information and accessibility	Continue to add materials to website to address broader range of issues and needs	27	<ul style="list-style-type: none"> ▪ Ongoing effort. ▪ “Protecting Carroll County Waters” website was developed at the hub for NPDES information. Information continues to be added as available and needed. ▪ Maintained by BRM.
7.1 Continue to offer opportunities & materials for increased public awareness & access to permit-related water quality information	Continue to engage public through Carroll Environment Facebook page and expand the relevant content	27	<ul style="list-style-type: none"> ▪ Posts 3+ times per week. Topics include restoration, stormwater, flooding, water resources, litter, recycling, and more.
	Explore feasibility of expanding social media engagement to other social media platforms	27	<ul style="list-style-type: none"> ▪ Not yet implemented.
	Produce the next video in the Stormwater for Homeowners video series	27	<ul style="list-style-type: none"> ▪ Not yet implemented.

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Objective	Activity/Program	Page	Implementation
	Periodically present to municipal councils to educate and update, as requested	28	<ul style="list-style-type: none"> ▪ Ongoing effort, as needed.
	Prepare 1-page overview of new permit requirements to share w/ elected officials and public	28	<ul style="list-style-type: none"> ▪ PLM presented the NPDES MS4 permit program to the Board of County Commissioners in a public forum and streamed online, which included new permit requirements. ▪ The new MS4 permit is available to the public on the MDE website.
	Continue to participate in community activities that provide an opportunity to raise public awareness and increase volunteerism	28	<ul style="list-style-type: none"> ▪ Ongoing effort. ▪ The EAC worked on the biennial update of the <i>Environmental Stewardship in Carroll County</i> booklet. ▪ PLM, BRM, and municipal co-permittees are actively involved in offering public education outreach and volunteer involvement opportunities
7.1 Build connections and partnerships between PLM, local environmental groups, and citizens to increase awareness and provide mutual assistance	Plan and conduct an environmental symposium as opportunity for local environmental groups to network with each other, to find common threads where they can work together, and to educate and engage the public	28	<ul style="list-style-type: none"> ▪ The first annual Environmental Symposium was held on November 12, 2022. This event showcased Carroll County community groups focused on environmental stewardship. It was free and open to the public. Groups had the opportunity to network, to solicit volunteers, and to build a cooperative relationship with PLM. The event also featured a recycled art contest open to high school students. ▪ As a result of symposium, an information sharing network was developed among many of the local groups, including PLM. Sharing volunteers was a topic of collaboration meeting held on January 22, 2022. ▪ Planning occurred during this reporting year for the second annual symposium.
7.1 Attract and engage volunteers to assist with maintenance of environmental areas (i.e., tree plantings, stream clean-ups, etc.) and serve on environment-related boards and commissioners	Use Carroll Environmental Facebook as an avenue to engage volunteers	29	<ul style="list-style-type: none"> ▪ PLM has shared information regarding events held by local community grounds and their call for volunteers.
	Plan and conduct an environmental symposium as opportunity for PLM staff and local environmental groups to increase volunteer participation	29	<ul style="list-style-type: none"> ▪ The first annual Environmental Symposium was held on November 12, 2022. This event showcased Carroll County community groups focused on environmental stewardship. It was free and open to the public. Groups had the opportunity to network, to solicit volunteers, and to build a cooperative relationship with PLM. ▪ Planning occurred during this reporting year for the second annual symposium.
	Engage students at McDaniel College to learn about and participate in stormwater outreach activities and projects	29	<ul style="list-style-type: none"> ▪ Staff from the BRM hosted a field lecture with McDaniel College students from the Environmental Management class at the Willow Pond retrofit and stream restoration. ▪ Staff from the BRM hosted a field lecture with McDaniel College students from the Wetlands Ecology class at the Woodsyde and Brynwood stream restorations.
	Engage students at Carroll Community College to learn about and participate in stormwater outreach activities and projects	29	<ul style="list-style-type: none"> ▪ During the spring semester of 2023, staff from the BRM worked with the Carroll Community College STEM Scholars program in the classroom as well as in the field to establish a water quality monitoring study.

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Objective	Activity/Program	Page	Implementation
	Partner with local colleges and high schools to offer internships to students considering a career related to water quality	29	<ul style="list-style-type: none"> ▪ Ongoing effort. During the spring semester of 2023, on continuing through the end of 2023, BRM provided an internship in the Water Resource Division to a student from McDaniel.
7.1 Educate businesses about permit requirements, good housekeeping measures, and pollution prevention	Develop self-inspection checklist for businesses to identify additional measures they could take	30	<ul style="list-style-type: none"> ▪ Self-inspection evaluation and checklists developed under previous permit term available to interested businesses upon request.
	Update slide shows & associated handouts to be part of Department speakers' bureau	30	<ul style="list-style-type: none"> ▪ Ongoing effort. ▪ Custom presentations are made upon business industry need or upon request. ▪ Business handout materials are maintained and available to general public. Also used in IDDE program as educational tool to businesses.
	Update existing materials, as needed, to address good housekeeping measures for businesses in the target audience	30	<ul style="list-style-type: none"> ▪ Ongoing effort. ▪ Selected business handout materials developed and maintained for specific business industries, e.g. auto, food/restaurant, etc. in correlation to general trends observed in IDDE compliance program.
	Develop an outreach campaign to commercial property management companies w/ varied businesses and sources of pollutants	30	<ul style="list-style-type: none"> ▪ Not yet implemented.
7.2 Develop education materials related to best salt management practices.	...for homeowners	31	<ul style="list-style-type: none"> ▪ The EAC developed a Guide to Salt Management for Homeowners (deicing and water softeners), completed in October 2022. The publication is available on the EAC's website, has been shared via the Carroll Environment Facebook page, and has been available at various events. ▪ Graphics and other informational posts were developed and posted on the Facebook page.
	...for businesses	31	<ul style="list-style-type: none"> ▪ MDE is developing a statewide commercial salt applicators education and certification program expected to launch 2024.
7.3 Continue to deliver effective Reduce/Reuse/Recycle public outreach campaign	Take advantage of and share existing resources and initiatives available through Keep America Beautiful (KAB)	32	<ul style="list-style-type: none"> ▪ Ongoing effort.
7.3 Continue to provide educational materials related to litter	Develop additional materials to focus on reducing the amount of litter that reaches waterways	32	<ul style="list-style-type: none"> ▪ Separate materials for businesses and homeowners were developed and added to the following webpages: Stormwater Workshop for Businesses, Homeowner Workshop, Carroll Clean Water Partnership, Municipal Residents Workshop, Stormwater Public Outreach Publications. Educational materials are continuously provided by the Recycling Office and posted online or sent out by mail, social media, or news release.
	Update and refresh comprehensive guide to recycling in Carroll County	32	<ul style="list-style-type: none"> ▪ This guide is updated annually. In fall 2022, the guide was given a new look in fall 2022.

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Objective	Activity/Program	Page	Implementation
7.3 Continue to improve and foster the Adopt-a-Road campaign	Update the Adopt-a-Road video on the website	32	<ul style="list-style-type: none"> ▪ Not yet implemented. ▪ Adopt-a-Road Brochure: www.carrollcountymd.gov/media/1910/clean-car.pdf
7.4 Provide opportunities for public participation during the development of watershed assessments and restoration plans	Maintain list of interested parties for notification of TMDL development actions	33	<ul style="list-style-type: none"> ▪ The County has maintained a list of individuals and organizations who provided input during the initial restoration plan development public comment period, and any additional interested parties will be added to the list for notification as requested. ▪ Regular updates on restoration projects are provided through the BRM Quarterly Newsletter and Carroll Environment Facebook page, which individuals can subscribe to.
	Provide notice on County's webpage outlining how public may obtain information on development of TMDL stormwater implementation plans and opportunities for comment	33	<ul style="list-style-type: none"> ▪ Upon the approval or establishment of a new TMDL by EPA, Carroll County will notify the public through the County's webpage for opportunities to provide comment.
	Provide copies of TMDL stormwater implementation plans to interested parties upon request	33	<ul style="list-style-type: none"> ▪ The individual plan watershed restoration plans are available to view or download on the BRM website on the Watersheds page. One, combined countywide TMDL implementation plan will be developed, per permit requirements, and submitted with the Annual Report.
	Allow minimum 30-day comment period before finalizing TMDL stormwater implementation plans	34	<ul style="list-style-type: none"> ▪ Upon the approval or establishment of a new TMDL by EPA, Carroll County will notify the public and hold a 30-day public comment period prior to finalization of newly developed restoration plans.
	Document in final TMDL stormwater implementation plans how County provided public outreach and adequately address all relevant comments	34	<ul style="list-style-type: none"> ▪ Public outreach for all previously approved TMDL restoration plans is documented in the Countywide TMDL implementation plan. Upon the approval or establishment of a new TMDL by EPA, Carroll County will notify the public and hold a 30-day public comment period prior to finalization of newly developed restoration plans to incorporate any relevant public comments.
	Revise/update existing, approved restoration plans as needed and per MDE guidance	34	<ul style="list-style-type: none"> ▪ Each individual 8-digit watershed restoration plan will be updated once each permit term. Once Countywide TMDL implementation plan has been developed to document and summarize all completed BMPs, programmatic initiatives, alternative control practices, as well as an analysis of the net pollutant load reductions achieved annually for each TMDL stormwater WLA.
7.5 Continue to build or improve existing partnerships between the County and other entities to promote	County & Municipalities: WRCC	35	<ul style="list-style-type: none"> ▪ Ongoing effort. PLM continues to work with the municipalities, the Heath Department, and Carroll County DPW to coordinate and collaborate on water resources related projects. The WRCC meetings monthly.

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Objective	Activity/Program	Page	Implementation
action, awareness, and recognition	County & Municipalities: EAC	35	<ul style="list-style-type: none"> ▪ Ongoing effort. PLM continues to work with the EAC to coordinate and collaborate on public outreach efforts and providing information and recommendations to the Board of County Commissioners regarding relevant environmental issues. The EAC meetings monthly.
	County & Municipalities: MOA	35	<ul style="list-style-type: none"> ▪ The WRCC drafted a Memorandum of Agreement (MOA) to address how this cost-share will take place and to delegate the administrative responsibilities of the Permit. The final MOA represents many hours of WRCC discussion, review and input by all jurisdictions' attorneys and discussion and approval by each set of elected officials. Originally signed by the Board and the Mayors on October 23, 2014, the Board and the Mayors of all Carroll County municipalities met jointly to discuss the MOA and officially sign the MOA. Prior to the issuance of the next generation permit on December 30, 2022, the WRCC reviewed the MOA. It was revised to become a perpetual agreement that would not have to be resigned at the end of each permit term. The MOA then was reaffirmed and resigned on October 7, 2021.
	PLM staff & Economic Development staff	36	<ul style="list-style-type: none"> ▪ Ongoing effort. PLM continues to monitor Economic Development projects to identify partnering opportunities to provide more than the minimum water quality requirements for projects to the mutual benefit of developers and the County.
	PLM staff & DPW staff	36	<ul style="list-style-type: none"> ▪ Ongoing effort. PLM regularly coordinates with DPW regarding the follow related activities: <ul style="list-style-type: none"> • Illicit Discharge Detection and Elimination • Storm drain mapping • A-StoRM efforts • Litter/trash collection • Street sweeping • Inlet cleaning • Maintenance of facilities • Stormwater restoration
	Public Engagement – Volunteer Opportunities: Individuals / Groups	36	<ul style="list-style-type: none"> ▪ Ongoing effort. Events such as the Environmental Symposium bring various community organizations together and connect individuals with groups. Events such as stream cleanups and tree planting maintenance provide opportunities for involvement.

Community Partnership

- Carroll Clean Water Partnership (CCWP): This program was initiated in January 2016, with its kickoff at the January 5, 2016, workshop, “Carroll County Businesses for Clean Water.” The CCWP is a cooperative effort of PLM staff, the EAC, and the WRCC. The sponsors of the CCWP hope to foster a business-friendly environment for local businesses to identify and address potential pollutants and good housekeeping measures, and, as a result, gain community recognition as “Partners” for their contribution to achieving clean water. The program aims to encourage Partners to voluntarily implement stormwater pollution prevention good housekeeping best management practices (BMPs). A webpage was developed and provides informational materials, the self-inspection checklist, event

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information, the list of Partners (as they are designated), and other relevant information. This page can be found on the Protecting Carroll County Waters (NPDES) website hub. The program is scheduled to be comprehensively reviewed in the next permit year.

 www.carrollcountymd.gov/government/directory/planning-land-management/protecting-carroll-county-waters-npdes/carroll-clean-water-partnership/

- **Stormwater Pollution Prevention Self-Inspection Checklist:** Businesses start by assessing their current activities and identifying any specific actions needed to prevent pollution and improve water quality stewardship. For this assessment, a self-inspection checklist, titled “Completing Your Stormwater Pollution Prevention Self-Inspection Checklist and Action Plan,” is available to guide business owners in identifying good housekeeping measures that could be implemented. This checklist can then be used as an internal action plan for the business to assist in planning. A copy of the checklist is available online. County staff are available to assist in this process if desired.

 www.carrollcountymd.gov/media/5611/selfinspectionchecklist.pdf

Other Outreach Activities

In Carroll County, staff are continuously involved in environmental education efforts. PLM staff regularly volunteer to speak at schools, community organizations, club meetings, and other venues to help provide effective and timely environmental information to the community.

- **CCPS Outdoor School Program:** Each year, staff partner with the CCPS Outdoor School Program to educate and engage sixth grade students on issues related to water quality that coincide with the curriculum. Sessions are provided on topics such as biological stream health, stormwater, and the importance and benefits of tree planting.
- **Helping Hands Keep Parks Green:** Carroll County Department of Recreation and Parks launched a campaign to encourage additional community involvement to help keep County parks clean. The Helping Hands Keep Parks Green initiative is modeled after similar efforts, such as Adopt-A-Road, and is designed to invest community members in the care of parks. While volunteer recreation councils already perform countless hours of maintenance related to athletic fields, the Helping Hands campaign is focused more on general park cleanliness, trash pickup, and trail maintenance. It focuses on soliciting volunteers from organizations, such as service clubs, scout troops, churches, homeowner associations, and local businesses.
- **Carroll County Farm Museum BMPs Showcased:** In addition to the education events for school-aged youth included in **Table 7**, the Carroll County Farm Museum showcases several different types of structural and non-structural stormwater BMPs onsite. Five stormwater management practices onsite at the Carroll County Farm Museum serve as educational exhibits for visitors to learn about the importance and function of stormwater pollution mitigation practices, including a rain garden, landscape infiltration, rain barrel, drywell, and bioretention facility. Each practice features detailed signage to explain the practice and how it works. These exhibits are included in tours or in educational events for school-aged youth.

E. Stormwater Restoration

The MS4 permit requires Carroll County to restore impervious acres that have not been treated to the MEP by implementing stormwater BMPs, programmatic initiatives, or alternative control practices. Carroll County continues to implement an aggressive program of watershed restoration projects. **Table 10** indicates the restoration efforts that have been completed for the third-, fourth-, and fifth-generation permit requirements, as well as planned projects through the next six years. Projects listed in blue indicate restoration efforts that addressed the initial 10% restoration requirement of the third-generation permit, providing 688 acres of impervious treatment. The County's restoration achievements under the fourth-generation permit, which ended in December 2019, are listed in green and provided treatment of 1,629 impervious acres. Projects shown in orange have been completed since the end of the fourth-generation permit, between January 1, 2020, and June 30, 2023, and provide 883 acres of treatment as part of the County's current fifth-generation permit.

Projects planned or in design that are scheduled for completion between 2024 and 2029 are shown in red and will address impervious acre and nutrient reduction requirements in the fifth-generation permit and beyond. To date, these projects reflect approximately 496 acres of restoration. These acres keep the County moving in a positive direction for addressing both untreated impervious acreage and local and Chesapeake Bay nutrient reduction requirements.

Figure 2 depicts the number of acres restored (blue) and acres in planning and design phases (red) for projects to restore impervious surfaces to the mitigation projects. This graph provides an excellent representation of the level of true watershed restoration accomplished through the County's restoration efforts.

Cumulative Impervious Area Treated

July 2023

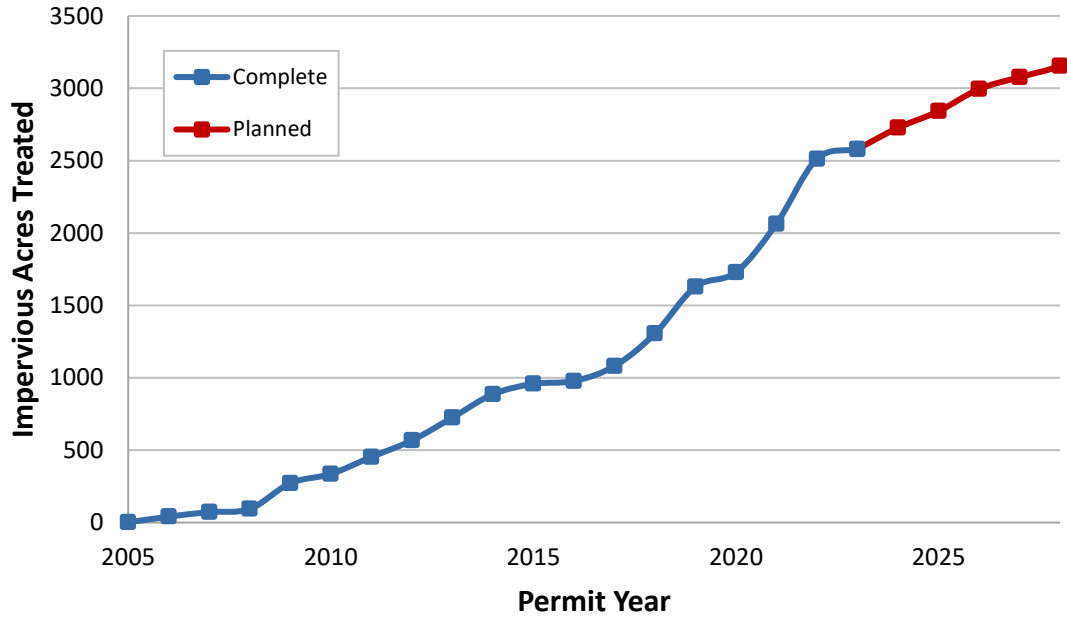


Figure 2: Impervious Surface Acres Treated: Projects Completed and Planned

Table 10
Listing of NPDES Watershed Restoration Efforts
July 2023

Carroll County First Permit Requirements					
Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
1997	Longwell County Park	600 LF Stream Restoration	Completed	142.80	Liberty Reservoir
1998	Carroll County Times	200 LF Stream Restoration	Completed	0.50	Liberty Reservoir
1999	Piney Run	936 LF Stream Restoration	Completed	258.07	Loch Raven Reservoir
1993-2005	Forest Buffer Easements	Forest Buffer	Completed	147.47	
1993-2005	Grass Buffer Easements	Grass Buffer	Completed	139.43	
Completes 1st permit term requirement of 10% treatment				688.27	

Carroll County Second Permit Requirements - Completed December 31, 2019					
Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2005	Eldersburg Elementary School	Retrofit	Complete	1.40	Liberty Reservoir
2006	Chung	Outfall Restoration	Complete	10.00	S Branch Patapsco River
2007	Marriott Wood I Facility #1	Retrofit	Complete	0.60	Liberty Reservoir
2007	Winfield Fire Department Addition	New Construction	Complete	0.20	S Branch Patapsco River
2009	Bateman SWM Pond	New Construction	Complete	6.20	Liberty Reservoir
2009	Collins Estate	Retrofit	Complete	3.90	Liberty Reservoir
2009	Hickory Ridge	Retrofit	Complete	6.60	Liberty Reservoir
2009	Marriott Wood I Facility #2	Retrofit	Complete	2.80	Liberty Reservoir
2009	Marriott Wood II	Retrofit	Complete	1.90	Liberty Reservoir
2009	South Carroll High School	New Construction	Complete	12.90	S Branch Patapsco River
2009	Westminster Airport Pond	Retrofit	Complete	93.50	Liberty Reservoir
2010	Brimfield	Retrofit	Complete	12.60	S Branch Patapsco River
2010	Elderwood Village	Retrofit	Complete	3.40	Liberty Reservoir
2010	High Point	Retrofit	Complete	0.90	Liberty Reservoir
2010	Oklahoma II Foothills	Retrofit	Complete	8.10	Liberty Reservoir
2010	Upper Patapsco Phase I - Naganna Pond	New Construction	Complete	13.90	Liberty Reservoir
2010	Upper Patapsco Phase II - Hoff Pond	New Construction	Complete	4.10	Liberty Reservoir

Carroll County Second Permit Requirements - Completed December 31, 2019

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2011	Arthur Ridge	Retrofit	Complete	6.60	S Branch Patapsco River
2011	Edgewood	Retrofit	Complete	16.70	Liberty Reservoir
2011	Heritage Heights	Retrofit	Complete	4.10	Liberty Reservoir
2011	Oklahoma Phase I	Retrofit	Complete	10.00	Liberty Reservoir
2011	Quail Meadows	Retrofit	Complete	23.25	Liberty Reservoir
2012	Hampstead Impervious Area Removal	Impervious Removal	Complete	0.13	Prettyboy Reservoir
2012	Clipper Hills - Gardenia	Retrofit	Complete	15.24	S Branch Patapsco River
2012	Clipper Hills - Hilltop	Retrofit	Complete	25.49	S Branch Patapsco River
2012	Harvest Farms 1A	Retrofit	Complete	15.47	S Branch Patapsco River
2012	Parrish Park	Retrofit	Complete	18.20	S Branch Patapsco River
2012	Sunnyside Farms	New Construction	Complete	3.30	Double Pipe Creek
2012	Wilda Drive	New Construction	Complete	1.63	Liberty Reservoir
2013	Westminster Community Pond	New Construction	Complete	87.85	Liberty Reservoir
2013	Westminster High School	New Construction	Complete	44.81	Liberty Reservoir
2013	Tree plantings	Tree plantings	Complete	7.13	
2014	Benjamin's Claim	Retrofit	Complete	20.55	S Branch Patapsco River
2014	Carrolltowne 2A Gemini Drive	Retrofit	Complete	47.26	S Branch Patapsco River
2014	Carrolltowne 2B	Retrofit	Complete	14.27	S Branch Patapsco River
2014	Diamond Hills Section 5	Retrofit	Complete	16.27	Liberty Reservoir
2014	Friendship Overlook/Diamond Hills Section 2	Retrofit	Complete	18.58	Double Pipe Creek
2014	Tree plantings	Tree plantings	Complete	9.64	
2006-2014	Forest Buffer Easements	Forest Buffer	Complete	177.59	
2006-2014	Grass Buffer Easements	Grass Buffer	Complete	119.48	
2015	Benjamin's Claim Basin B	Retrofit	Complete	0.56	S Branch Patapsco River
2015	Braddock Manor West	Retrofit	Complete	10.52	S Branch Patapsco River
2015	Eldersburg Estates 3-5	Retrofit	Complete	11.22	S Branch Patapsco River
2015	Tree plantings	Tree plantings	Complete	20.25	
2016	Tree plantings	Tree plantings	Complete	11.97	
2017	Carroll County Maintenance Center	Retrofit	Complete	34.44	Double Pipe Creek
2017	Farm Museum - Bioretention A	New Construction	Complete	0.50	Double Pipe Creek

Carroll County Second Permit Requirements - Completed December 31, 2019

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2017	Farm Museum - Bioretention B	New Construction	Complete	2.55	Double Pipe Creek
2017	Farm Museum - Drywell	New Construction	Complete	0.03	Double Pipe Creek
2017	Farm Museum - Landscape Infiltration	New Construction	Complete	0.06	Double Pipe Creek
2017	Farm Museum - Rain Barrel	New Construction	Complete	0.01	Double Pipe Creek
2017	Farm Museum - Rain Garden	New Construction	Complete	0.05	Double Pipe Creek
2017	Finksburg Industrial Park	Retrofit	Complete	22.34	Liberty Reservoir
2017	Jenna Estates	Outfall Restoration	Complete	0.50	S Branch Patapsco River
2017	Miller/Watts	Retrofit	Complete	35.24	Liberty Reservoir
2018	Blue Ridge Manor	Retrofit	Complete	11.25	Double Pipe Creek
2018	Central Maryland (Wet Facility)	Retrofit	Complete	35.51	Liberty Reservoir
2018	Eldersburg Business	Retrofit	Complete	70.36	Liberty Reservoir
2018	Exceptional Center	Retrofit	Complete	16.57	Double Pipe Creek
2018	Feeser Property	New Construction	Complete	1.72	Liberty Reservoir
2018	Hawks Ridge	Retrofit	Complete	25.10	S Branch Patapsco River
2018	Randomhouse	Retrofit	Complete	22.52	Liberty Reservoir
2018	Small Crossings Bioretention	New Construction	Complete	0.53	Prettyboy Reservoir
2018	Small Crossings Sand Filter	Retrofit	Complete	11.02	Prettyboy Reservoir
2018	Tree plantings	Tree plantings	Complete	7.13	
2019	Aspen Run	Retrofit	Complete	1.86	Liberty Reservoir
2019	Central Maryland (Dry Facility)	Retrofit	Complete	31.86	Liberty Reservoir
2019	Elderwood Village Parcel B	Retrofit	Complete	61.00	Liberty Reservoir
2019	Elmer Wolfe	Retrofit	Complete	4.85	Double Pipe Creek
2019	Merridale Gardens	Retrofit	Complete	28.39	S Branch Patapsco River
2019	Oklahoma 4	Retrofit	Complete	19.96	Liberty Reservoir
2019	Shannon Run	Retrofit	Complete	46.89	S Branch Patapsco River
2019	Whispering Valley Phase 4	Retrofit	Complete	26.75	Prettyboy Reservoir
2019	Tree plantings	Tree plantings	Complete	5.40	
2015-2019	Forest Buffer Easements	Forest Buffer	Complete	59.46	
2015-2019	Grass Buffer Easements	Grass Buffer	Complete	30.14	
2019	Inlet Cleaning	Inlet Cleaning	Complete	16.00	

Carroll County Second Permit Requirements - Completed December 31, 2019

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2019	Septic Upgrades to 2019	Retrofit	Complete	57.20	
2019	Street Sweeping (updated yearly)	Street Sweeping	Complete	1.00	
Completed toward 20% goal				1629.25	

Listing of Watershed Restoration Efforts January 1, 2020 to July 1, 2023

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
	Offset Previous Permit Annual Practices			-17	
2020	Benjamins Claim - Jacobs	Retrofit	Complete	2.05	S Branch Patapsco River
2020	Manchester Impervious Removal	Impervious Removal	Complete	0.22	Double Pipe Creek
2020	Roberts Mill	Retrofit	Complete	91.80	Upper Monocacy River
2020	Shiloh Middle	Retrofit	Complete	19.61	Liberty Reservoir
2021	Greens of Westminster	Retrofit	Complete	22.15	Double Pipe Creek
2021	Langdon (Jantz)	New Construction	Complete	93.64	Double Pipe Creek
2021	Willow Pond Retrofit	Retrofit	Complete	106.09	Liberty Reservoir
2021	Willow Pond SR	Stream Restoration	Complete	28.20	Liberty Reservoir
2022	Mayberry SR	Stream Restoration	Complete	279.31	Double Pipe Creek
2022	Trevanion Terrace Retrofit	Retrofit	Complete	47.78	Upper Monocacy River
2022	Woodsyde One Retrofit	Retrofit	Complete	28.39	S Branch Patapsco River
2022	Woodsyde SR	Stream Restoration	Complete	59.57	S Branch Patapsco River
2022	Woodsyde Two Retrofit	Retrofit	Complete	1.58	S Branch Patapsco River
2023	Locust Wetland	New Construction	Complete	17.42	Double Pipe Creek
2023	North Carroll Library	New Construction	Complete	0.19	Prettyboy Reservoir
2023	Patapsco Valley Overlook	Retrofit	Complete	5.58	S Branch Patapsco River
2023	Stone Manor Retrofit	Retrofit	Complete	11.40	Liberty Reservoir
2020-2022	Tree Plantings	Tree Plantings	Complete	105.23	
2020-2022	Forest Conservation Buffer	Protections	Complete	21.07	
2020-2022	Riparian Conservation Landscaping	Protections	Complete	8.98	
2020-2022	Non-Riparian Conservation Landscaping	Protections	Complete	8.36	
2020-2022	Septic Upgrades	Retrofit	Complete	9.44	
2021-2022	Inlet Cleaning (Increase over last permit)	Inlet Cleaning	Complete	6.01	

Listing of Watershed Restoration Efforts January 1, 2020 to July 1, 2023

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2021-2022	Street Sweeping (Increase over last permit)	Street Sweeping	Complete	11.64	
Completed toward fifth-generation permit				968.71	

Carroll County Projects in Planning

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2024	Brynwood SR	Stream Restoration	Under Construction	65.75	Liberty Reservoir
2024	Century High School Retrofit	Retrofit	Design	30.41	Liberty Reservoir
2024	Oklahoma Sediment	Outfall Stabilization	Design	20.00	Liberty Reservoir
2024	St George's Gate Retrofit	Retrofit	Design	10.13	Liberty Reservoir
2024	Sun Valley II Retrofit	Retrofit	Under Construction	7.99	Double Pipe Creek
2024	Tree Plantings 2024	Tree Planting	Planned	12.50	
2025	Hampstead Valley 1 Retrofit	Retrofit	Design	17.09	Loch Raven Reservoir
2025	Melstone Valley Retrofit	Retrofit	Design	3.11	S Branch Patapsco River
2025	Public Safety Training Center	Retrofit	Design	19.27	Liberty Reservoir
2025	Roberts Field Wet Pond Retrofit	Retrofit	Design	32.52	Loch Raven Reservoir
2025	Roberts Field Wet Pond SR	Stream Restoration	Design	17.50	Loch Raven Reservoir
2025	Windemere	Retrofit	Design	12.43	Liberty Reservoir
2025	Tree Plantings 2025	Tree Planting	Planned	12.50	
2026	Hampstead Valley 2 & 3 SR	Stream Restoration	Planned	13.50	Loch Raven Reservoir
2026	Hampstead Valley 4	New Construction	Design	28.03	Loch Raven Reservoir
2026	Hampstead Valley 4 SR	Stream Restoration	Design	7.18	Loch Raven Reservoir
2026	Manchester East	New Construction	Design	49.41	Prettyboy Reservoir
2026	Meadow Ridge (2)	Retrofit	Planned	7.74	Double Pipe Creek
2026	New Windsor Wetland	New Construction	Design	23.45	Double Pipe Creek
2026	Piney Ridge Village	Retrofit	Planned	11.21	S Branch Patapsco River
2026	Tree Plantings 2026	Tree Planting	Planned	12.50	
2027	Fields of Nottingham	Retrofit	Planned	25.31	S Branch Patapsco River
2027	Rt 97 Restoration	New Construction	Planned	7.65	Liberty Reservoir
2027	Winters Street	Retrofit	Planned	36.63	Liberty Reservoir
2027	Tree Plantings 2027	Tree Planting	Planned	12.50	

Carroll County Projects in Planning					
Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2028	BTR (Black and Decker)	New Construction	Planned	46.35	Liberty Reservoir
2028	North Carroll Farms 4	Retrofit	Planned	6.89	Prettyboy Reservoir
2028	Windsong Estates	New Construction	Planned	11.76	Lower Monocacy River
2028	Tree Plantings 2028	Tree Planting	Planned	12.50	
2029	Hampstead Regional	Retrofit	Planned	95.66	Liberty Reservoir
2029	Valley Vista	New Construction	Planned	6.39	Prettyboy Reservoir
2029	Westminster Market	Retrofit	Planned	17.10	Liberty Reservoir
2029	Tree Plantings 2029	Tree Planting	Planned	12.50	
Anticipated impervious treatment				705.44	

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The fifth-generation permit requires treatment of 1,217 impervious acres by December 29, 2027, which equates to 14% of the established baseline untreated impervious acres. With a cumulative completion of 968 acres of impervious treatment for the current permit, the County has met 80% of this restoration requirement. The County is on track to meet the requirement, as demonstrated in the planned projects of **Table 10** above. The BMP Portfolio for Year 2 (FY2024) is provided in **Table 11**. Next year, the County anticipates treating an additional 147 impervious acres, which will result in completion of 92% of the restoration requirement for the permit term.

Table 11
Year 2 BMP Portfolio – FY2024

BMP ID	BMP Name	BMP Type	# BMPs	Length Restored (ft), Lane miles (miles), or Mass Loading (lbs)	Impervious Acre Credits
CR21ALN000001	Brynwood SR	STRE	1	1726	65.75
CR22ALN000002	Oklahoma Sediment	STRE	1	1000	20.00
CR21RST000004	St George's Gate Retrofit	FSND	1	N/A	10.13
CR22RST000001	Century High School Retrofit	FSND	1	N/A	30.41
CR22RST000004	Sun Valley II Retrofit	FSND	1	N/A	7.99
Multiple	Tree Plantings 2024	FPU	1	N/A	12.50
Total Planned IA Credit:					146.77

During the fourth-generation permit term, Carroll County utilized annual alternative control practices to meet the permit restoration requirements, which provided 17 acres of impervious acre credit. The County has replaced this annual crediting with a new permanent structural stormwater facility (CR16RST000015), which provides treatment for 17.42 impervious acres. This facility is provided in the GDB and indicated for crediting on the fourth-generation permit through the PRMT_ISSUANCE_YR_CREDIT field.

F. Countywide TMDL Stormwater Implementation Plan

For all approved SW-WLA TMDLs, a TMDL Stormwater Implementation Plan has been developed by Carroll County to document annually updated progress toward meeting all currently approved TMDL WLAs. The Countywide TMDL Implementation Plan includes a summary of all completed BMPs, alternative control practices, programmatic initiatives, as well as analysis and table summary of the net pollutant load reduction achieved for each TMDL stormwater WLA. The *Carroll County TMDL Stormwater Implementation Plan* is provided with this annual report as a separate document, as requested by MDE.

G. Assessment of Controls

1. BMP Effectiveness Monitoring

Introduction

Purpose

Carroll County is required to conduct a discharge characterization as part of its NPDES permit conditions for the purpose of evaluating the efficacy of stormwater management. This component consists of monitoring the discharge from a stormwater management facility, as well as assessing impacts to the receiving water body, as described below. The State of Maryland has developed a database of discharge data collected by several permit holders in order to characterize stormwater runoff associated with various stormwater management efforts.

Study Area and Requirements

The discharge characterization is implemented through Part IV.G. of the permit, Assessment of Controls, which delineates specific data collection and analysis efforts to be undertaken. Carroll County has been collecting data in support of this program since August 2000. Up until the conclusion of the County's fourth-generation MS4 permit, monitoring was located downstream of the Air Business Center stormwater management facility, just north of Westminster. With the fifth-generation permit's changes in monitoring requirements and parameters, this was an opportune time to initiate a new long-term BMP effectiveness study at a new site. The Robert's Field stormwater management facility, within the Town of Hampstead, was selected as the monitoring location. This structural facility was constructed as an extended detention wet pond in 1994 and is currently in design for retrofit.

The facility discharges to a first-order tributary of Piney Run within the Loch Raven Reservoir watershed. The constructed outfall for this facility serves as the "outfall" monitoring station for this study. While the outfall monitoring station principally receives stormwater output from the Robert's Field wet pond, it does also receive some untreated stormwater from several roadway inlets. This first-order tributary merges with a second first-order tributary approximately 100 feet downstream. This second-order tributary then merges with a third first-order tributary an additional 700 feet downstream. Another small tributary merges with the second-order tributary approximately 1,000 feet farther downstream; this confluence is just upstream of the second long-term monitoring station (the "instream" station), which serves as the outlet for the study watershed.

The location of the watershed where monitoring is conducted is shown in **Figure 3**. The study area is located near the topographic divide separating the eastern and western piedmont physiographic provinces. As shown in the map, this is a headwater stream draining the uppermost extent of the watershed. The location of the monitoring stations and other watershed features are shown in **Figure 4**.

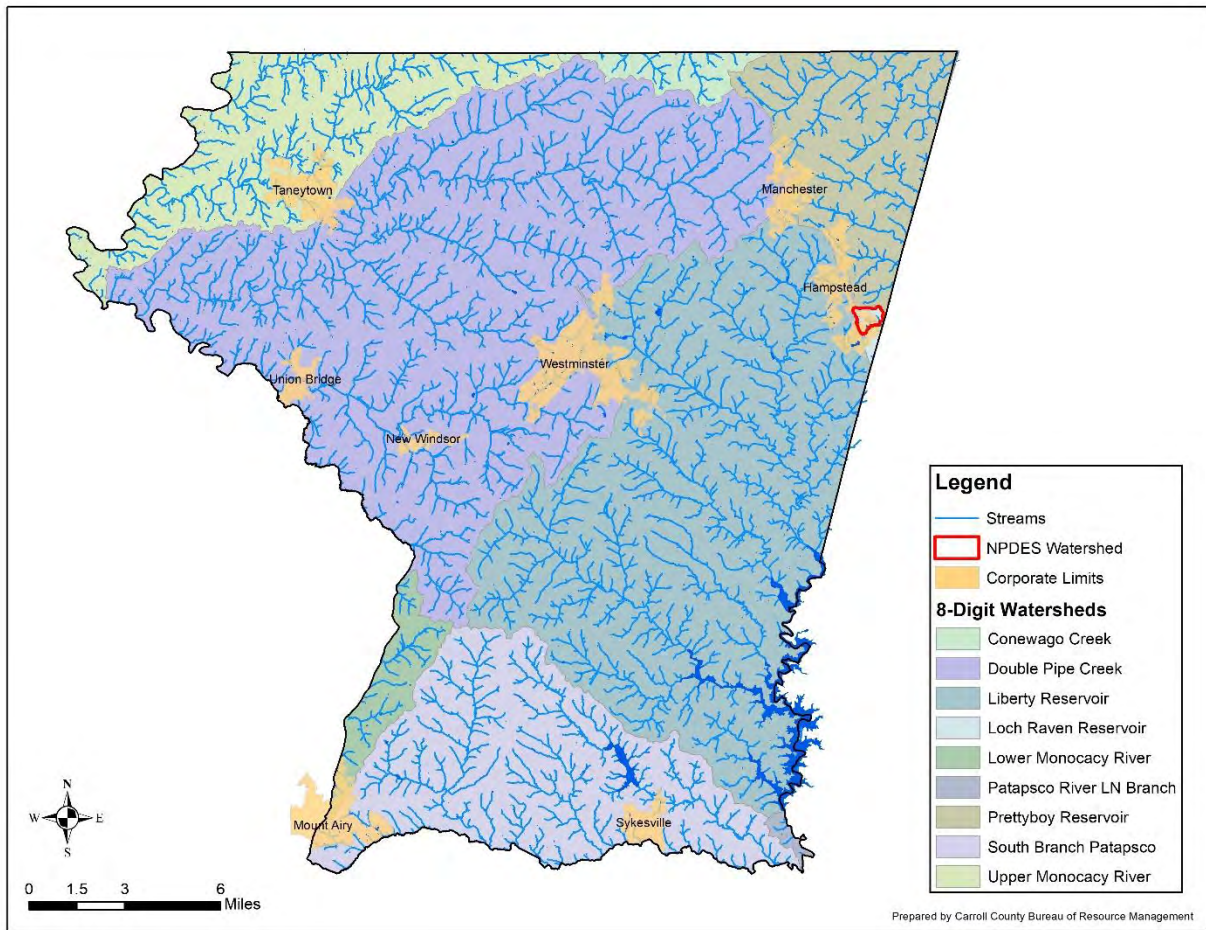


Figure 3: Carroll County NPDES Discharge Characterization Location

The overall study area contains 13 existing BMPs, including the Robert’s Field stormwater facility mentioned above: two infiltration basins, four infiltration trenches, two dry wells, one extended wet detention structure, one extended dry detention structure, and three dry pond structures. In addition to the retrofit of the Robert’s Field wet pond, there are also plans to complete a retrofit of one of the dry ponds, three stream restoration projects, and one new structural stormwater facility.

Program Elements

The discharge characterization consists of three primary data collection efforts to assess the effectiveness of the stormwater controls on stream health: physical monitoring, chemical monitoring, and biological monitoring. These data are collected at and between the two monitoring stations shown in **Figure 4**, where the cumulative effects of watershed restoration efforts can best be assessed.

Physical monitoring is conducted in the spring of each reporting year and consists of the following elements:

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- Geomorphic stream assessment, including an annual comparison of permanently monumented stream channel cross-sections and a stream profile to evaluate channel stability;
- A stream habitat assessment for assessing areas of aggradation and degradation; and
- Analysis of the effects of rainfall discharge rate, stage, and continuous flow on geometry (if needed).

Chemical monitoring is completed throughout the reporting year and consists of the following elements:

- Samples of eight storm events at each monitoring location, with at least two occurring each calendar year quarter and four collected as quarterly base-flow samples.
- Sampling is completed with automated equipment and each storm limb is characterized individually.
- Laboratory analysis is completed for various chemical constituents and Event Mean Concentrations (EMCs) are calculated and reported.
- Continuous physical water quality measurements for the required analytes – temperature, pH, and specific conductance.

Biological monitoring is completed in the spring of each reporting year above the instream station and consists of the following elements:

- Assessment of benthic macroinvertebrates to assess stream health; and
- Completion of a spring habitat assessment.



Figure 4: NPDES Discharge Characterization Watershed

Data Collection and Analysis Methods

Climatological

The climate of Carroll County is characterized as temperate and moderately humid (Meyer and Beall, 1958). Temperature and precipitation 30-year normal annual averages used in this report are based on data from the Millers 4 NE weather station, location approximately 8 miles northeast of the study site. This station is operated in accordance with National Weather Service Standards. The 30-year average temperature is 54° Fahrenheit (F), with monthly means ranging from 32°F in January to 75°F in July. The 30-year annual average precipitation at this location is 47.88 inches, with monthly means ranging from 2.94 inches in February to 5.11 inches in September. Precipitation data are collected at the Robert's Field pumphouse using a HOBO Rain Gauge Data Logger, which is operated and maintained by County staff. This rain gauge is located approximately one quarter of a mile to the south of the study location.

Hydrological

To characterize the hydrology of the study watershed, both monitoring stations (**Figure 4**) are equipped with instrumentation to collect continuous stream discharge data. This equipment is stored in protective boxes located near the station location and utilizes a 12-volt deep cycle marine battery for electric power. This hydrological equipment was installed at the end of December 2022; therefore, hydrological and chemical data are only reported for the winter and spring seasons of this reporting year (January 2023 through June 2023).

The outfall station is equipped with an ISCO model 4230 bubble flow meter which records hydrologic data by converting the hydrostatic pressure required to maintain the bubble rate to stream stage and then using Manning's equation to convert stage to discharge. The 4230 bubble flow meter uses a 1/8-inch vinyl bubble line that attaches to a sensor carrier on the outfall pipe's mounting ring. For the collection of stormwater samples, this station is equipped with an ISCO model 3700 portable sampler. A 3/8-inch vinyl suction line with strainer is used in conjunction with the model 3700 portable sampler.

The instream station is equipped with an ISCO model 730 bubbler flow module. The principle of operation for the model 730 is the same as the 4230 bubble flow meter. The model 730 bubbler flow module uses a 1/8-inch vinyl bubble line that attaches to a sensor carrier on a mounting plate embedded into the bottom of the instream station pipe. For the collection of stormwater samples, this station is equipped with an ISCO model 6712 portable sampler. Similar to the outfall station, a 3/8-inch vinyl suction line with strainer is used in conjunction with the model 6712 portable sampler.

At both stations, stage height is regularly checked at least twice weekly to verify that the instrumentation is functioning properly. Stage and discharge measurements are recorded at 10-minute intervals at both stations. Stormwater samples at both stations are collected, using the 3700 and 6712 samplers, as time-weighted discrete samples (uniform or non-uniform) before being manually composited into flow-weighted samples for each hydrograph limb. Flowlink Version 5.1 software by ISCO is used to complete hydrologic data analyses. Data collected at the

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monitoring stations are downloaded to a computer in the field. New hydrologic data is appended to the existing data record for each station. The stream characterization data are exported from Flowlink to Excel for most analyses.

Physical Geomorphological

The physical geomorphological assessment consists of evaluating nine flagged and GPS-located cross-sectional stations for stream physical character, shape, and slope. Distance between cross-sectional stations range between approximately 75 feet and 650 feet. Cross Section 1 is located approximately 300 feet downstream of the Robert's Field wet pond outfall (the "outfall" monitoring station), just before the confluence with a first-order tributary. Cross Section 2 is 350 feet further downstream after the confluence with the first-order tributary. Cross Sections 3, 4, and 5 are located on a 900-foot stream segment on a second first-order tributary that merges approximately 375 feet downstream of Cross Section 2. The final four cross-sectional stations (6 through 9) are located downstream of this confluence, with Cross Section 9 being located approximately 250 feet upstream of the "instream" monitoring station. Physical data collection stations are shown in **Figure 5**.

During the spring of 2023, Carroll County conducted a geomorphologic assessment for the study area, from the outfall of the Robert's Field stormwater management facility to the "instream" station. As required, survey data were again collected at the nine cross sections. At each location, the County survey crew collected data for bank slope, toe, stream edges, thalweg, edge of water, channel bottoms, and tops.

No previous geomorphological data had been collected at this study location prior to 2023. In future reporting years, a Level 1 geomorphologic stream assessment will be conducted on the entire stream segment to assess potential geomorphologic changes to the stream. This assessment includes a physical evaluation of stream channel changes and an interpretation of those changes. The physical evaluation involves determining channel segment characteristics and assessing dimensional changes. The results of the physical evaluation are then translated into a channel response by comparing changes in channel geometry (e.g. cross-sectional dimensions) in the context of the physical setting.



Figure 5: Physical Data Collection Stations

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Chemical

Chemical assessments take place throughout the year at the outfall and instream monitoring stations (**Figure 4**). Carroll County staff collect all storm and baseflow chemical samples and contract with Martel Laboratories, Inc. in Baltimore, Maryland, for laboratory analyses. The sampling program consists of a first flush component for bacteriological constituents and physical parameters, as well as chemical parameters collected during each of the three storm limbs. For the continuous monitoring of temperature, pH, and specific conductance, a YSI EXO1 sonde is located within a run just upstream from the instream monitoring station. **Table 12** lists the required parameters for laboratory analysis, the laboratory method, and the corresponding method reporting limit. The method listed for temperature, pH, and specific conductance are all *in situ* methods.

Table 12
Laboratory Methods and Detection Limits for Parameters Tested

Parameter Tested	Method	Reporting Limit
<i>First Flush Samples</i>		
pH	EPA 150.1	-
Temperature	EPA 170.1	-
Specific Conductance	EPA 120.1	1.0 µmhos/cm
Escherichia Coli	SM 9221 E	1.0 organisms/ 100mL
<i>Limb Samples</i>		
Biological Oxygen Demand	SM 5210 B	2.0 mg/L
Total Suspended Solids	SM 2540 D	1.0 mg/L
Orthophosphate Phosphorus	SM 4500 PE	0.01 mg/L
Total Phosphorus	SM 4500 P	0.01 mg/L
Ammonia Nitrogen	SM 4500 NH3	0.2 mg/L
Nitrate/Nitrite Nitrogen	EPA 353.2	0.05 mg/L
Total Kjeldahl Nitrogen	SM 4500 NH3	0.5 mg/L
Total Nitrogen	Calculation	-
Chloride	SM 4500 CL E97	1.0 mg/L

The County uses storm event monitoring equipment manufactured by ISCO, Inc. to comply with this component of the County’s NPDES permit, as described above in the Hydrological section. The flow monitoring and event mean concentration (EMC) calculation methods are the same as those used in the previous permit reporting years. Martel Labs sends results via e-mail to the County, where the new records are appended to the existing database. Data are provided in the GDB on the **Appendix B CD**.

Event dates for this reporting year are shown in **Table 13**. Please note that six total sampling events are reported, four of which were storm events. As mentioned above in the Hydrological section, the hydrological equipment was installed at the end of December 2022, therefore hydrological and chemical data are only reported for the winter and spring seasons of this reporting year (January 2023 through June 2023). No flow was observed for the two outfall baseflow events. Dashes are populated in the table below for these occurrences. Temperature and pH measurements were not recorded for several events due to equipment malfunction and have been populated with “N/A” in the table below.

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Table 13
NPDES Discharge Characterization Sampling Events

Event	Date	Event Type	Outfall Physical Water Data		Instream Physical Water Data	
			pH	Water Temp (F)	pH	Water Temp (F)
2023-01	1/12/23	Storm	N/A	N/A	N/A	N/A
2023-02	2/16/23	Storm	N/A	N/A	N/A	N/A
2023-03	3/16/23	Base Flow	-	-	7.32	50.5
2023-04	5/09/23	Base Flow	-	-	7.34	60.4
2023-05	6/14/23	Storm	7.85	66.8	7.30	58.7
2023-06	6/16/23	Storm	7.93	63.5	7.35	58.8

Biological

One monitoring reach, located directly upstream of the “instream” station, was characterized during the Spring Index Period (March 1 to April 30). This biological sampling and characterization will occur annually during the Spring Index Period. Data collection, macroinvertebrate identification, and analytical methods were in accordance with the Maryland Biological Stream Survey (MBSS) guidance manual (Sampling Manual Field Protocols, 2019, <https://dnr.maryland.gov/streams/Publications/R4Manual.pdf>). The 75-meter sampling site, shown in **Figure 6**, was not randomly selected. The County contracts with EcoAnalysts, Inc, to identify and enumerate all benthic macroinvertebrate samples. An Index of Biotic Integrity (IBI) score was calculated using the six component metrics listed in **Table 14**. Each metric is rated a one, three, or five depending on the taxa present. The average of the component metric scores is considered the overall IBI score. Narrative ratings can be found in **Table 15**.

Habitat assessments were also conducted in accordance with MBSS Sampling Manual Field Protocols (2019) during the summer season, when shading can be properly assessed. The assessment uses scoring criteria that measure eight parameters, as shown in **Table 16**. Each parameter can score a maximum of 20 points, for a total maximum score of 160 points. Each parameter is subdivided into narrative ratings of poor, marginal, sub-optimal, and optimal. It should be noted that the habitat assessment is entirely qualitative, and results can be impacted by the subjectivity of assessor scoring and other factors. Additionally, data from this and the other assessments reflect the cumulative impacts of not only the regional stormwater management facility, but of the entire upstream contributing watershed to each study point as well.

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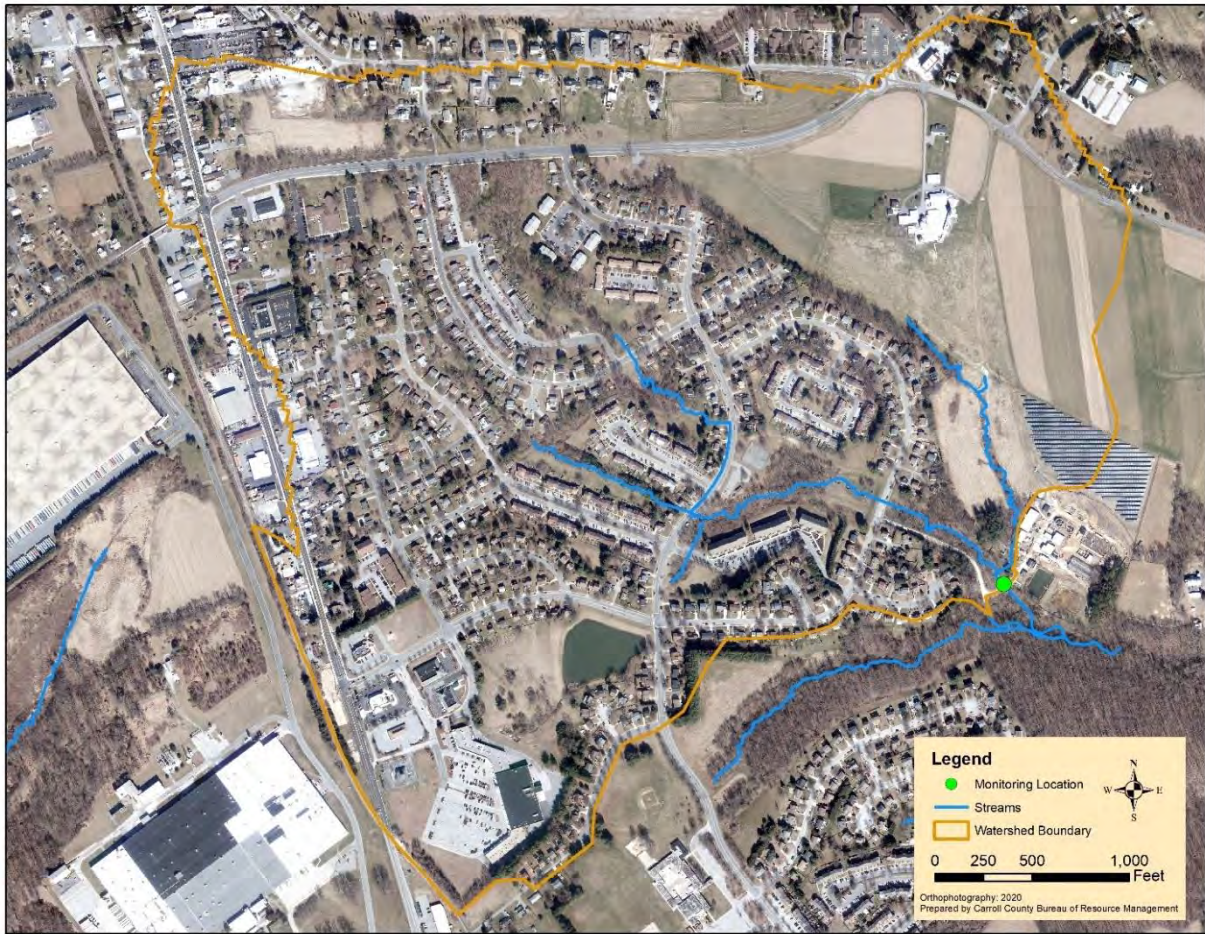


Figure 6: Biological Monitoring Station Locations

Table 14

MBSS IBI Metrics and Scoring Criteria for the Piedmont Region

Metric	IBI Score		
	5	3	1
Number of Taxa	≥25	15 – 24	<15
Number of EPT	≥11	5 – 10	<5
Number of Ephemeroptera	≥4	2 – 3	<2
% Intolerant Urban (Tolerance Values 0-3)	≥51	12 – 50	<12
% Chironomidae	≤4.6	4.7 – 63	>63
% Clingers	≥74	31 – 73	<31

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Table 15
IBI Score Ranges and Corresponding Narrative Ratings

IBI Score Range	Narrative Rating	Interpretation
4.0-5.0	Good	Comparable to reference streams considered to be minimally impacted.
3.0-3.9	Fair	Comparable to reference conditions, but some aspects of biological integrity may not resemble the qualities of these minimally impacted streams.
2.0-2.9	Poor	Significant deviation from reference conditions, with many aspects of biological integrity, not resembling the qualities of these minimally impacted streams, indicating some degradation.
1.0-1.9	Very Poor	Strong deviation from reference conditions, with most aspects of biological integrity, not resembling the qualities of these minimally impacted streams, indicating severe degradation.

Table 16
MBSS Habitat Assessment Criteria (MBSS Sampling Manual Field Protocols, 2014)

MBSS Stream Habitat Assessment Guidance Criteria Sheet				
Habitat Parameter	Optimal 16-20	Sub-Optimal 11-15	Marginal 6-10	Poor 0-5
1. Instream Habitat	>50% of a variety of cobble, boulder, submerged logs, undercut banks, snags, root wads, aquatic plants, or other stable habitat	30-50% of stable habitat. Adequate habitat	10-30% mix of stable habitat. Habitat availability less than desirable	Less than 10% stable habitat. Lack of habitat is obvious
2. Epifaunal Substrate	Preferred substrate abundant, stable, and at full colonization potential (riffles well developed and dominated by cobble; and/or woody debris prevalent, not new, and not transient)	Abund. of cobble & gravel/boulders common; or woody debris, aquatic veg., undercut banks, or other productive surfaces common but not prevalent/suited for full colonization	Large boulders and/or bedrock prevalent; cobble, woody debris, or other preferred surfaces uncommon	Stable substrate lacking; or particles are over 75% surrounded by fine sediment or flocculent material
3. Velocity and Depth Diversity	Slow (<0.3 m/s), deep (>0.5 m); slow, shallow (<0.5m); fast (>0.3 m/s), deep; fast, shallow habitats all present	Only 3 of the 4 habitat categories present	Only 2 of the 4 habitat categories present	Dominated by 1 velocity/depth category (usually pools)
4. Pool, Glide, and Eddy Quality	Complex cover/&/or depth > 1.5m; both deep (>.5 m)/shallows (<.2 m) present	Deep (>0.5 m) areas present; but only moderate cover	Shallows (<0.2 m) prevalent in pool/glide/eddy habitat; little cover	Max depth <0.2 m in pool/glide/eddy habitat; or absent completely
5. Riffle/Run Quality	Riffle/run depth generally >10 cm, with maximum depth greater than 50 cm (maximum score); substrate stable (e.g. cobble, boulder) & variety of current velocities	Riffle/run depth generally 5-10 cm, variety of current velocities	Riffle/run depth generally 1-5 cm; primarily a single current velocity	Riffle/run depth < 1cm; or riffle/run substrates concreted
6. Embeddedness	Percentage of gravel, cobble, and boulder particles that are surrounded by fine sediment or flocculent material			
7. Shading	Percentage of segment that is shaded (duration is considered in scoring). 0% = fully exposed to sunlight all day in summer; 100% = fully and densely shaded all day in summer			
8. Trash Rating	Little or no human refuse visible from stream channel or riparian zone	Refuse present in minor amounts	Refuse present in moderate amounts	Refuse abundant and unsightly

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Results and Discussion

Climatological

Monthly precipitation data for the 2023 reporting year are summarized in **Figure 7**. The 30-year monthly precipitation average and high/low extremes are also included. The total precipitation for the reporting period was 37.86 inches, a 10.02-inch deficit from the mean yearly total. Relative to mean monthly precipitation totals, December 2022 was the wettest month, with a surplus of 0.72 inches, while May 2023 was the driest month, with a deficit of 3.35 inches. Relative to the 30-year record (1991 – 2020), this reporting year was the fourth-driest year for total precipitation.

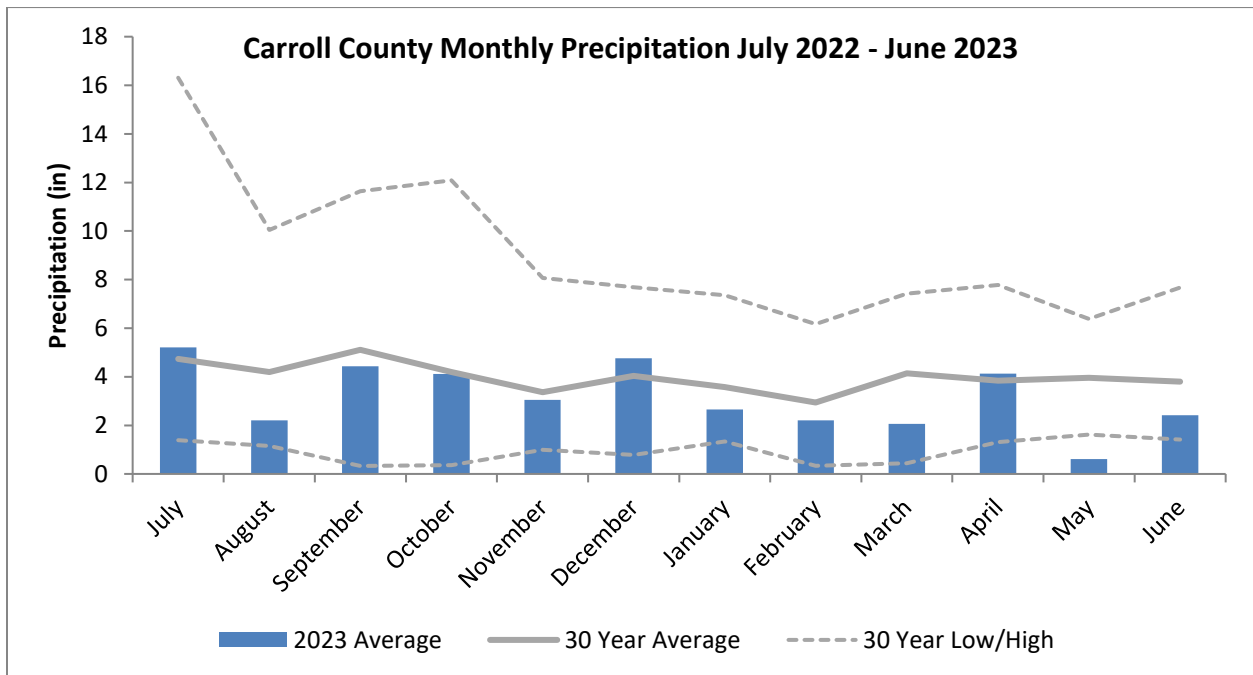


Figure 7: Monthly Precipitation Summary for the 2023 Reporting Period

Monthly temperature data for the 2023 reporting year are summarized in **Figure 8**. The 30-year monthly average temperatures and high/low temperature extremes are included for reference. Overall, the reporting period experienced an annual average temperature of 55.0°F, which was 1.3°F warmer than the 30-year annual average. Five months were cooler than average, which ranged from 1.0°F to 2.8°F cooler than normal. Seven months were warmer than or equal to average temperatures, with a mean of 3.8°F warmer than normal. January 2023 and February 2023 were the warmest relative to each month’s respective average temperatures, with an 8.5°F and 7.1°F increase above normal temperatures, respectively. Relative to the 30-year record (1991 – 2020), this reporting year was the fifth-warmest year.

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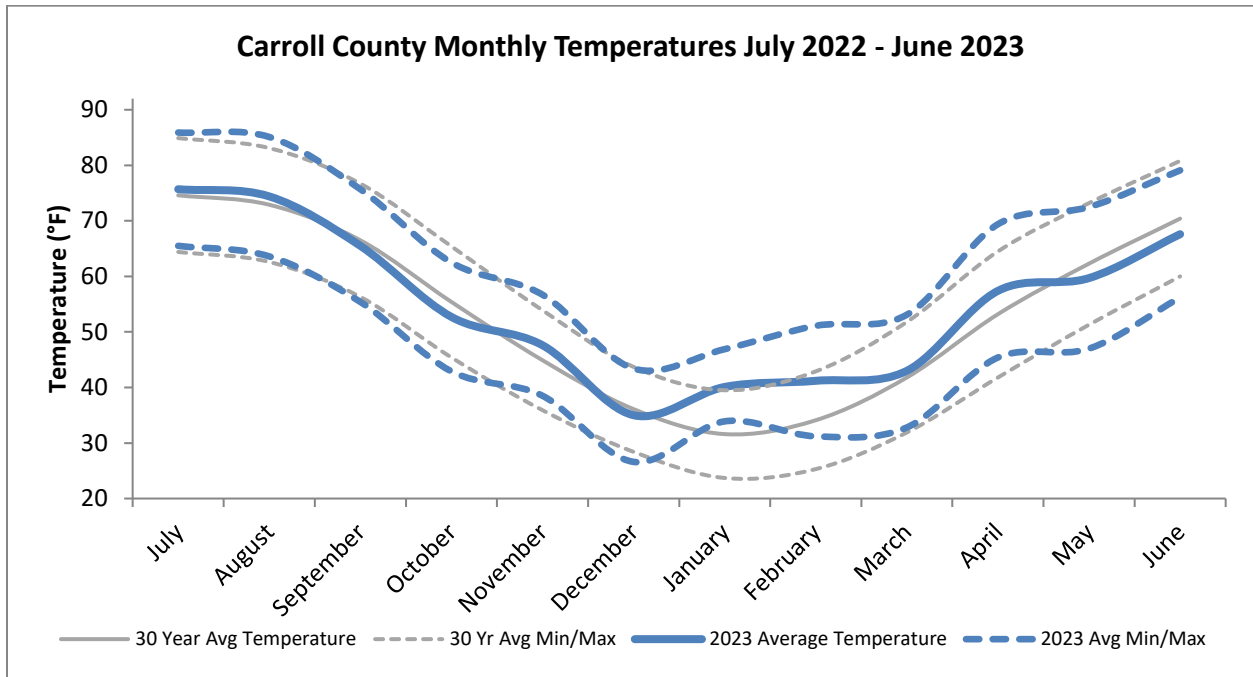


Figure 8: Monthly Temperature Summary for the 2023 Reporting Period

Hydrological

Hydrographs have been prepared for stage height and discharge at each monitoring station for the reporting period. Outfall and instream stage heights and discharge measurements are shown in **Figures 9 and 10**, respectively. A deficit of 10.02 inches of precipitation was observed during this reporting period relative to the average year. While the period from July 2022 through December 2022 was only slightly below normal, most of the deficit occurred between January 2023 and June 2023, when hydrological data were recorded. The overall reporting period had a total of 107 individual storm events. The criteria for a storm event requires at least 0.01 inch of recorded precipitation that occurs a minimum of eight hours from the next recorded precipitation. The typical/median storm event during this reporting period had 0.2 inches of observed precipitation over approximately five hours. This resulted in a typical rainfall intensity of 0.04 inches per hour. While there were numerous small events, there were only 26 events with greater than 0.5 inches of recorded precipitation, and only seven of those were events greater than 1 inch. It should be noted that only one event with greater than 1 inch of observed precipitation occurred from January 2023 through June 2023, the time period with recorded hydrological data. During this reporting year, the maximum recorded rainfall intensity was 2.2 inches per hour.

Typical stage heights at the outfall monitoring station were approximately 0.08 inches, or 0.05 gpm; the outfall station was dry the majority of reporting period due to the precipitation deficit. Peak discharge occurred on June 30, 2023, when a stage height of 5.6 inches was recorded. The resulting discharge was 2,182 gpm. During this storm event 1.07 inches of precipitation fell over 1.32 hours. Only one other storm event with a discharge greater than 1,000 gpm occurred during

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the reporting period. This occurred on March 2, 2023, when a peak discharge of 1,120 gpm was observed.

Typical stage heights observed for the instream monitoring station were approximately 1.72 inches, or 227 gpm. Peak discharge at this monitoring station occurred during the storm event on June 30, 2023. During this storm, 1.07 inches of precipitation fell over 1.32 hours. Peak observed stage height was 13.8 inches, and peak discharge was 19,204 gpm. Peak observed discharge for most storm events at the instream station were less than 10,000 gpm; only two other storm events had peak discharge measurements greater than 4,000 gpm. The storm event on March 3, 2023 had a peak discharge of 13,870 gpm, and the storm event on April 22, 2023 had a peak discharge of 10,794 gpm.

Total, seasonal, and categorical discharges for each monitoring station can be found in **Table 17**. Stormwater contribution from the outfall pond was only 4% of the total instream discharge for this reporting period. During baseflow, only 1% of the total instream discharge was contributed by the outfall, while this increased to 13% during storm events. During sustained periods with normal conditions or a precipitation surplus, the outfall would likely contribute a large percentage of total discharge.

Using manual baseflow separation, only 30% of the total flow volume at the instream station was observed during storm events. This station had consistent baseflow, even during the dry periods of the reporting year. Conversely, the outfall station did not maintain consistent baseflow during the drier periods. Many smaller storm events were too small to raise the pond above its spillway elevation, so only a small amount of the untreated runoff was observed at the station during storm events. The station was otherwise dry during these times, and 85% of the total flow volume during the reporting period was measured during these storm events.

Please note that hydrological data were not collected prior to January 1, 2023. Equipment for recording these data was installed at the end of 2022, and a short amount of time was also required for proper calibration of the recording equipment.

Table 17
Categorical Discharges and Stage Heights

	Outfall	Instream	Difference	Outfall Contribution (%)
Total (gal)	2,925,019	66,255,213	63,330,194	4%
Avg Stage (in.)	0.26	1.83	1.57	-
Median Stage (in.)	0.08	1.72	1.64	-
Avg Q (gpm)	13	290	277	-
Median Q (gpm)	0.05	227	227	-
Summer Q (gal)	N/A	N/A	N/A	N/A
Autumn Q (gal)	N/A	N/A	N/A	N/A
Winter Q (gal)	1,869,793	33,981,001	32,111,208	6%
Spring Q (gal)	1,102,373	32,274,211	31,171,838	3%
Baseflow	458,155	46,698,937	46,240,782	1%
Storm Events	2,466,864	19,556,276	17,089,411	13%

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To assess the impact of a future retrofit on hydrology, cumulative discharge frequencies at the outfall station will be compared for the pre-retrofit and post-retrofit years. **Figure 11** shows the cumulative discharge frequencies for the first pre-retrofit reporting year. As discussed above, the maximum discharge at the outfall monitoring station was 2,182 gpm on June 30, 2023. A total of 23,728 stage/discharge measurements were recorded during this reporting period. Of these measurements, 97% were below 100 gpm. Many of the stage/discharge measurements were also 0 gpm during this period, as a 10.02-inch deficit was observed, particularly from January 2023 through June 2023. Approximately half of all stage/discharge measurements during this reporting period were 0 gpm.

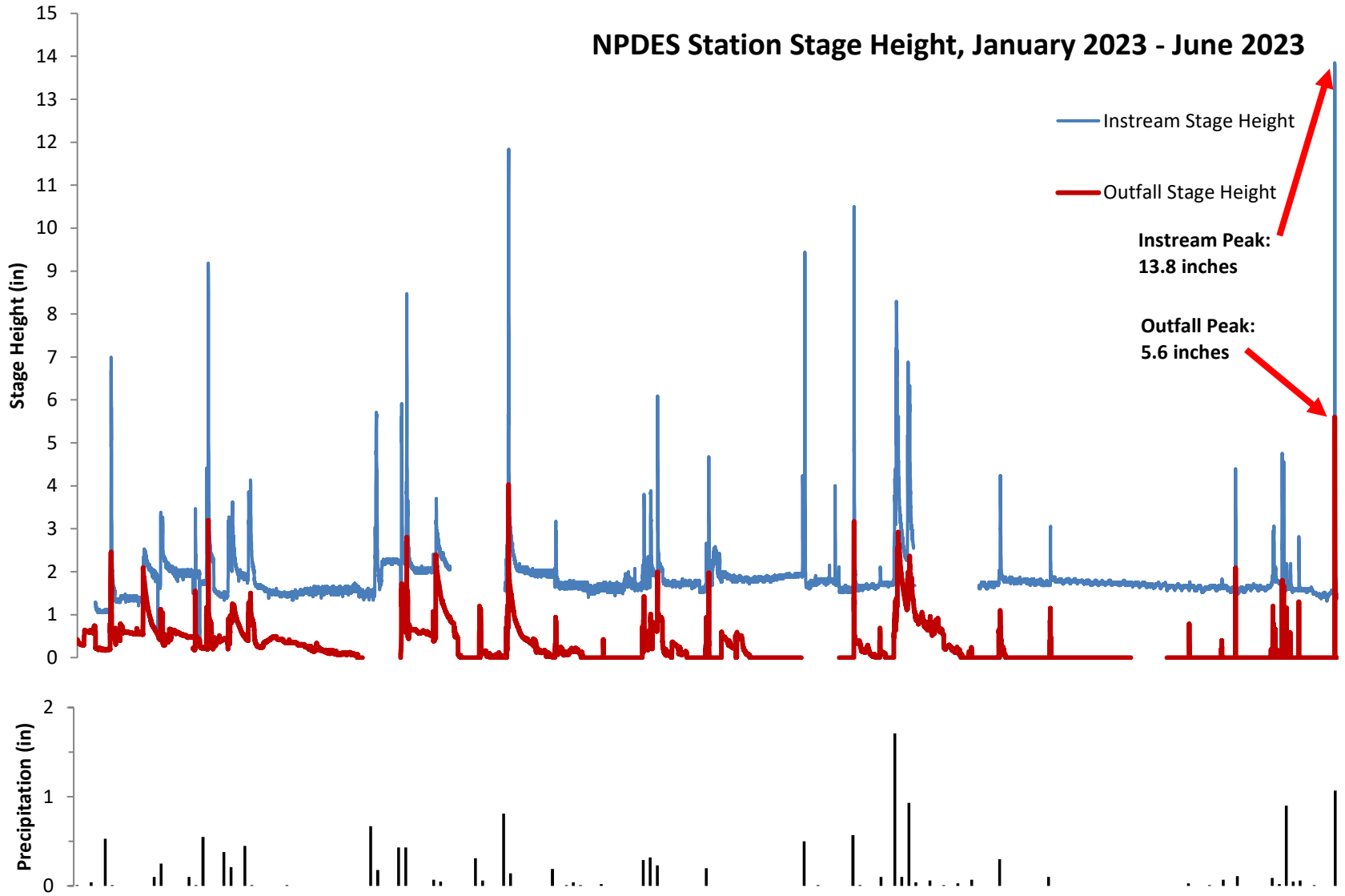


Figure 9: Stage Heights and Daily Precipitation for NPDES Monitoring Stations for the 2023 Reporting Year

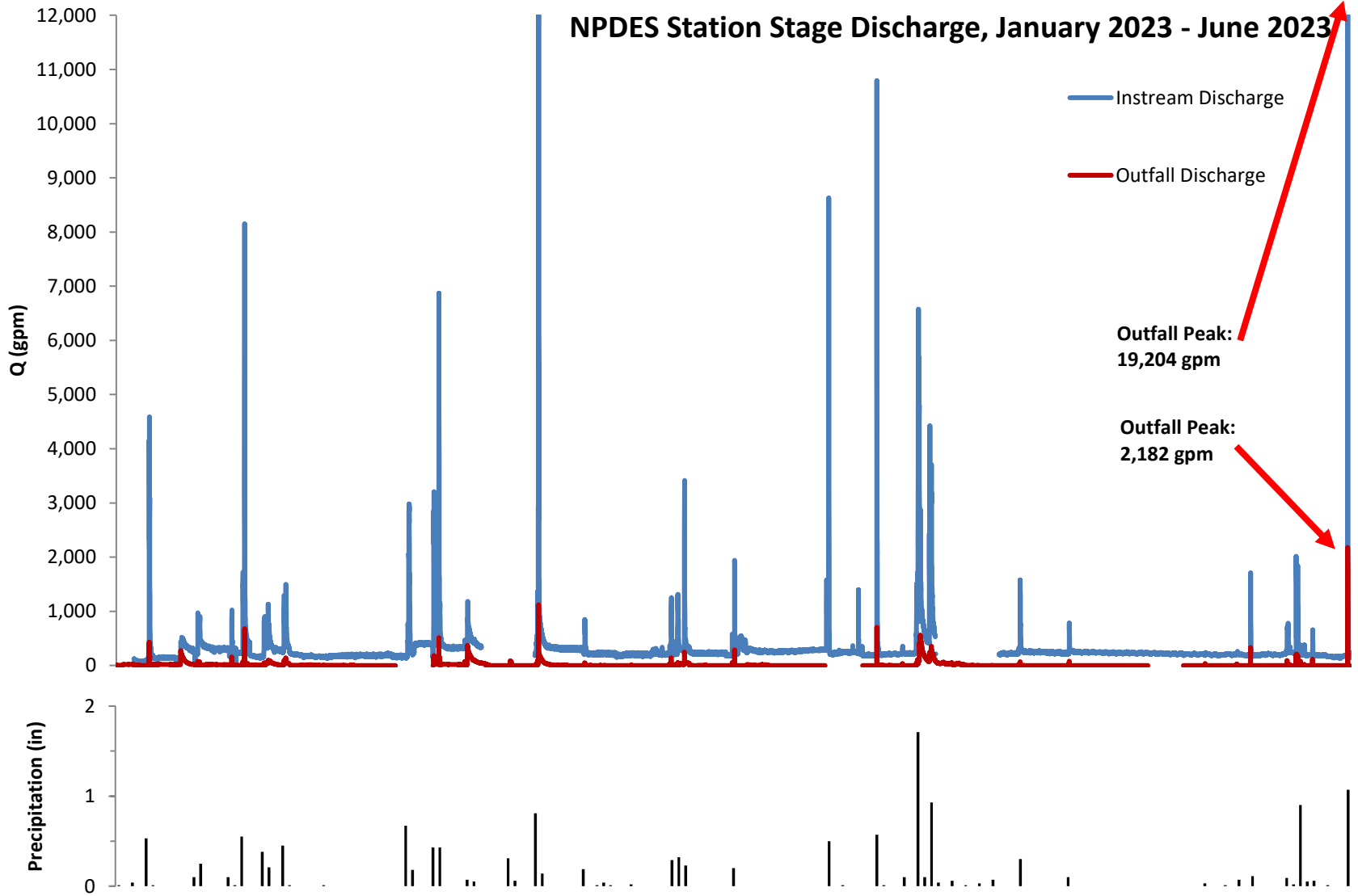


Figure 10: Discharge and Daily Precipitation for NPDES Monitoring Stations for the 2023 Reporting Year

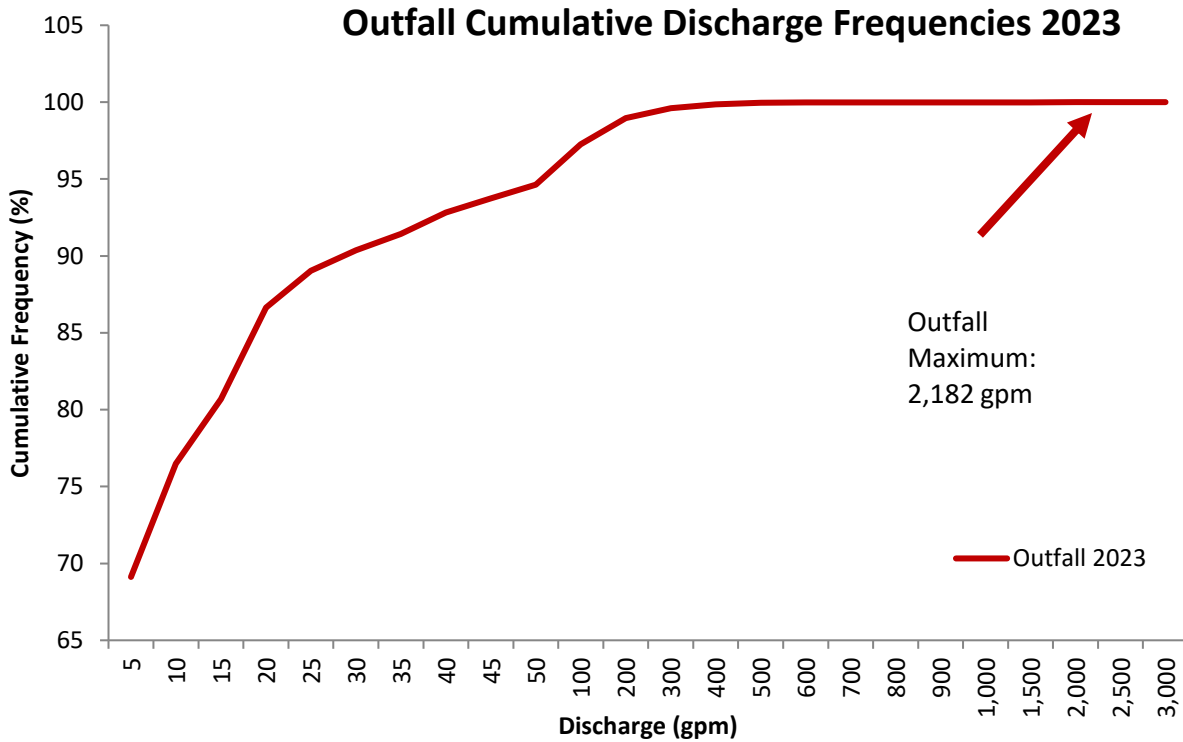


Figure 11: Outfall Discharge Frequencies for 2023 Reporting Year

An examination of individual events on the hydrograph demonstrates the distinct mechanisms driving changes in cumulative frequencies. As this is the initial reporting year for the long-term monitoring component at this study location, there is no before-after or year-year data to compare as in previous years. **Figure 12** represents a fairly typical hydrograph for a moderate storm event on April 22, 2023. For this storm event, 0.54 inches of precipitation was observed over two hours (0.27 in/hr), 80% of which was observed over the first hour. Peak discharge occurred at the outfall station 10 to 15 minutes before the peak at the instream station. Both stations – but particularly the outfall station – have relatively sharp ascending and descending limbs. For many storm events during dry periods, the Robert’s Field wet pond elevation does not rise above the spillway, and the outfall monitoring station only receives untreated runoff from the stormwater inlets along Boxwood Drive. This results in a flashy hydrograph.

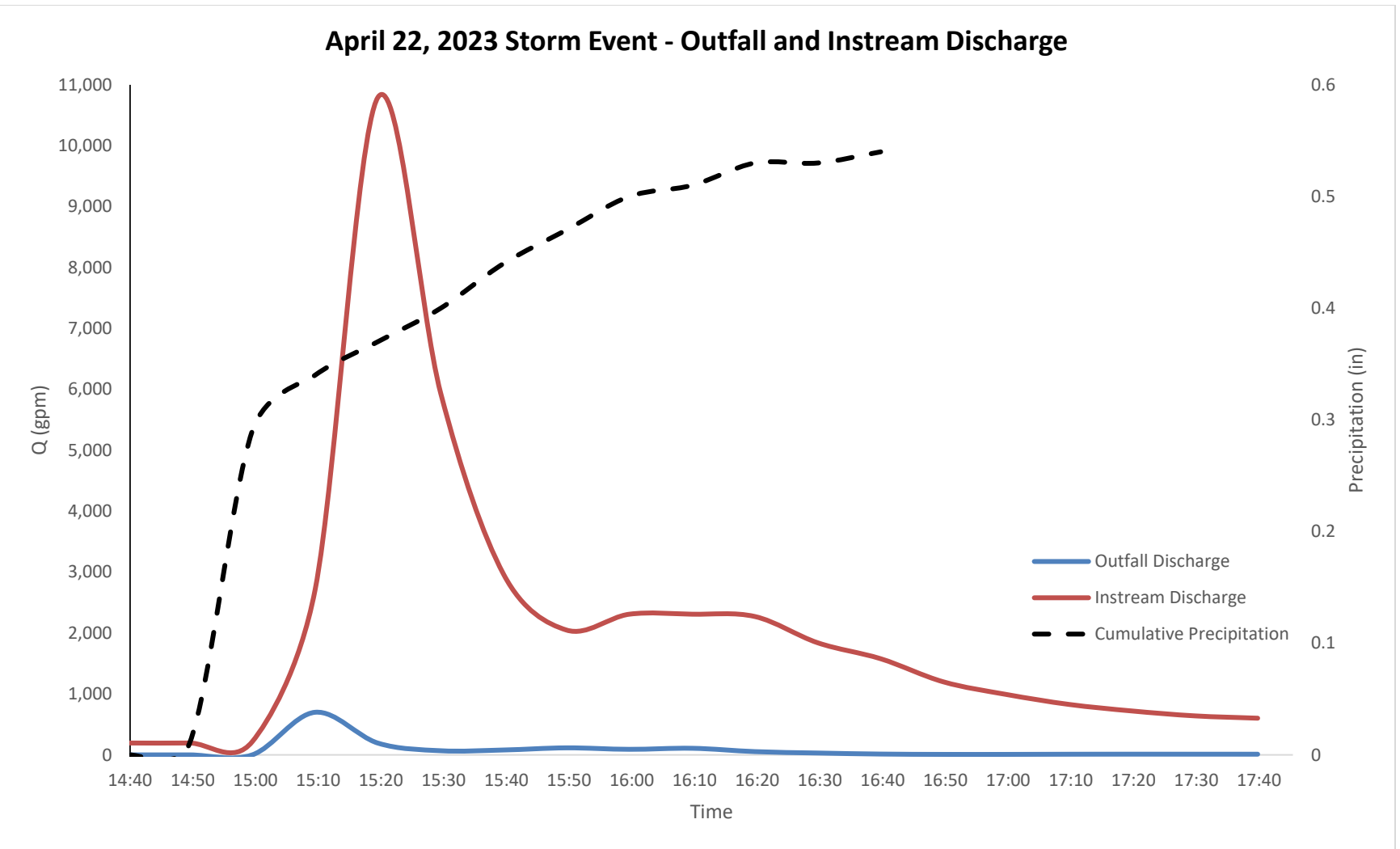


Figure 12: Individual Storm Event Hydrograph (4/22/2023, 0.54")

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Geomorphological

Results from this year's surveyed cross-section data collection are provided in **Appendix D**. This reporting year is the baseline year, meaning that this was the first year that the geomorphology of the study site stream has been assessed. Because this monitoring effort is designed to detect changes to the stream system over time, staff will compare the results at the nine flagged cross sections in future years to the results from 2023, the baseline year.

The nine flagged cross sections within the study site can be viewed in **Figure 5**. The study site contains multiple first-order streams that merge to create a second-order stream. To assess the effect of the multiple planned BMP projects within the watershed, cross sections were placed on multiple stream segments. An instream segment and an outfall segment will be used for assessments.

The outfall segment consists of the outfall monitoring station, XS1, XS2, and XS6. XS1 is located approximately 300 feet downstream from the Robert's Field outfall, just before the confluence with another first-order stream. XS2 is located downstream halfway between XS1 and the confluence with another first-order stream. XS6 is located just downstream of this confluence after a large bend.

The instream segment begins on the upstream section of the second first-order stream and includes XS3, XS4, XS5, XS6, XS7, XS8, XS9, and the instream monitoring station as the end point. This segment flows southeast. XS3 and XS4 are northwest of Boxwood Drive. The stream is piped under Boxwood Drive until a point approximately 300 feet upstream of the confluence with the outfall segment. XS5 is located between the pipe outfall and the confluence. XS6 and XS7 are after this confluence on a series of bends and just upstream from an extended dry detention stormwater facility. The stream is once again piped under North Woods Trail. XS8 and XS9 are located in this final section of the segment before the instream monitoring station.

Thalweg elevation and section gradient for 2023 are shown in **Table 18**. One notable observation from the table is the relatively high gradient between the outfall monitoring station and XS1. While there is some fluctuation through the stream system, the section between XS7 and the instream monitoring station is relatively constant around 2%. **Figure 13** displays these stream gradients for the 2023 reporting year for each stream segment. **Figure 14** displays the longitudinal stream profile for elevation at each of the nine cross sections and the outfall and instream monitoring stations along each stream segment. The locations of these points are also shown on this figure along the profile for each segment. In future reporting years, a comparison will be used to assess the depth of deposition or incision at each of the flagged cross sections.

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Table 18
Cross Section Station Results for 2023

Instream Segment				Outfall Segment			
Station	Distance (ft)	Elev	Slope	Station	Distance (ft)	Elev	Slope
XS3	0	775.56	-	OF	0	773.80	-
XS4	411	770.16	1.31%	XS1	321	763.35	3.26%
XS5	654	753.45	2.56%	XS2	488	754.89	1.73%
XS6	299	745.04	2.81%	XS6	483	745.04	2.04%
XS7	72	743.88	1.61%				
XS8	373	736.43	2.00%				
XS9	419	727.53	2.12%				
IS	261	722.07	2.09%				

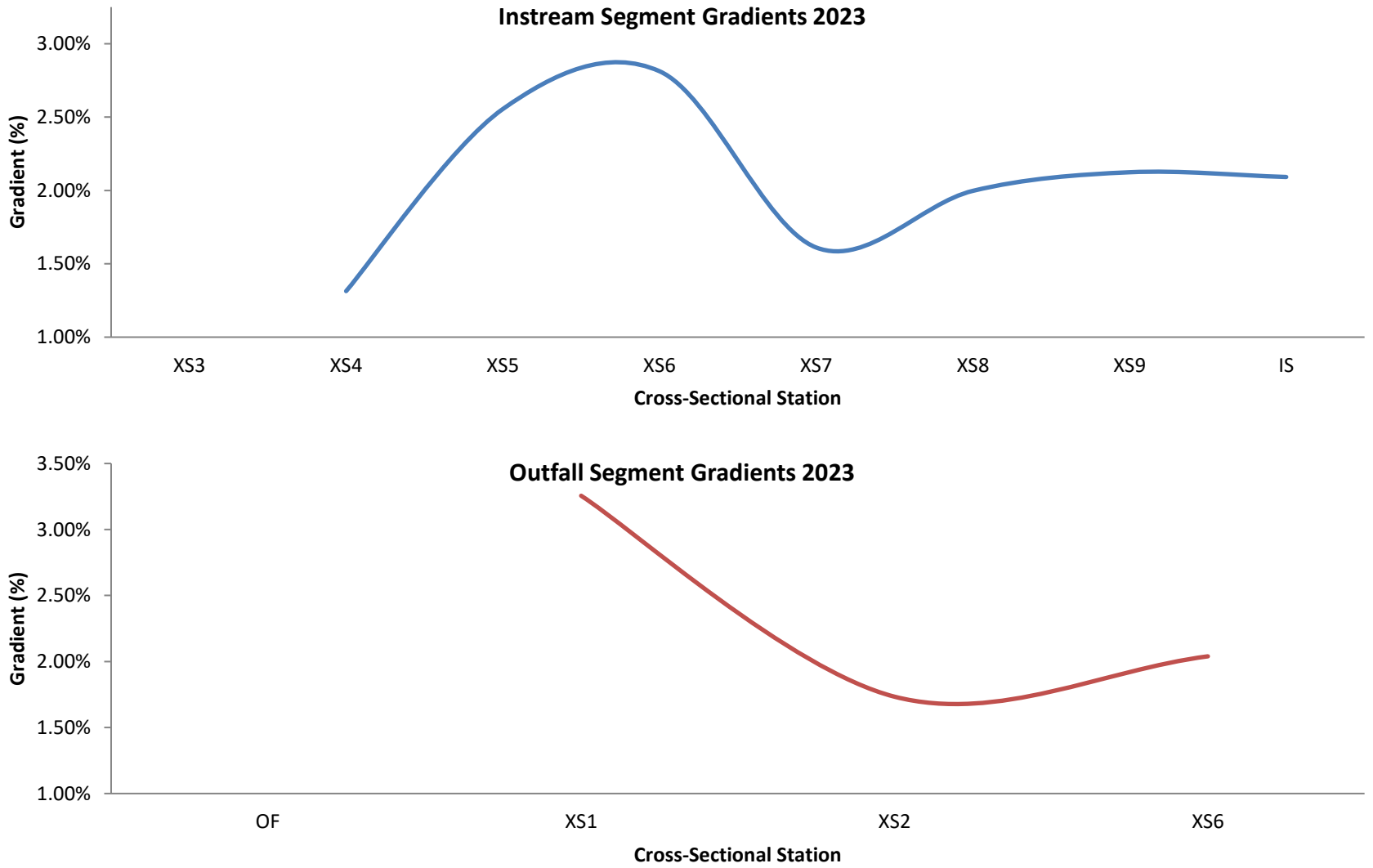


Figure 13: Instream and Outfall Stream Segment Gradients 2023

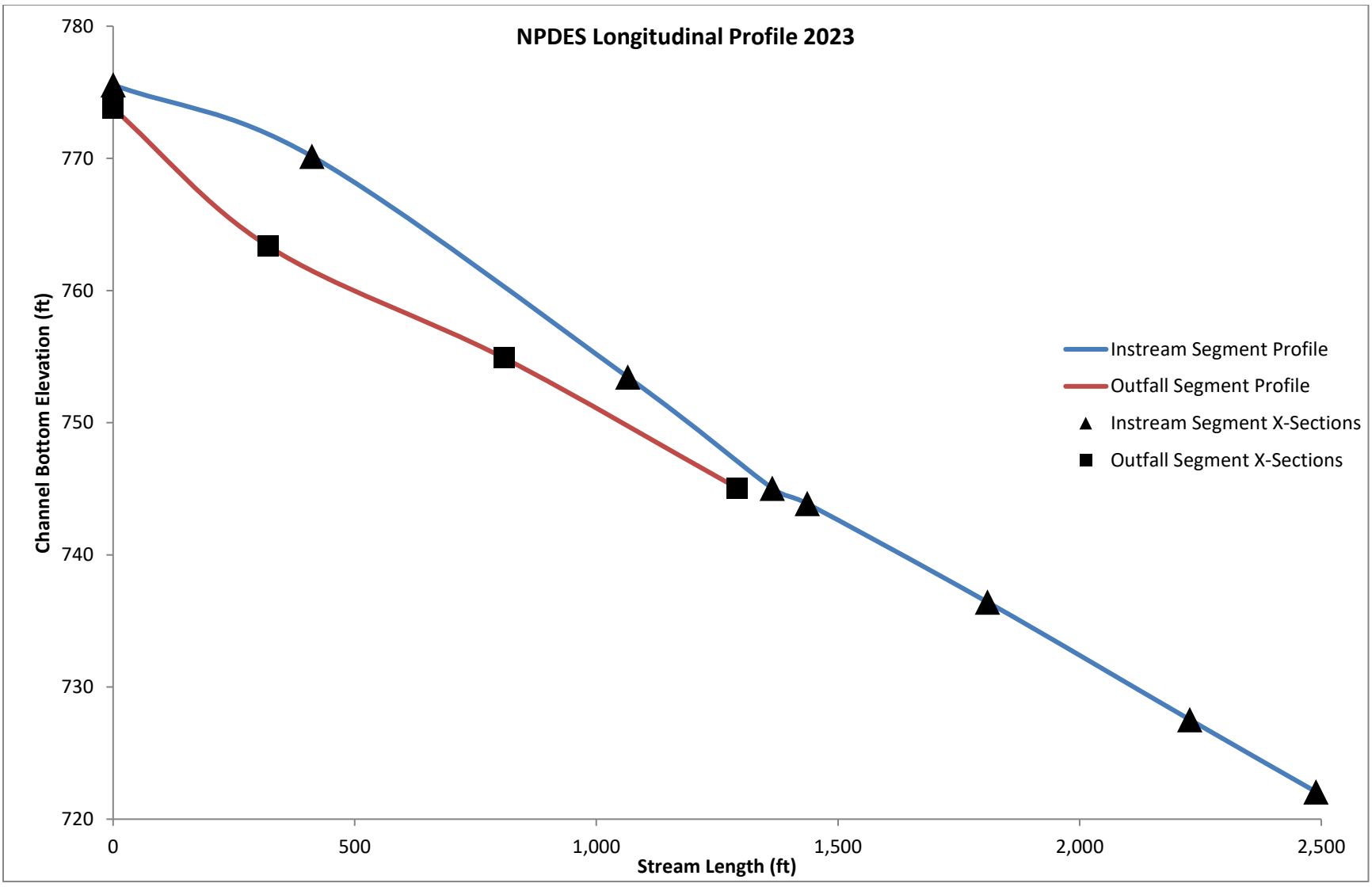


Figure 14: Longitudinal Profile for Instream and Outfall Stream Segments 2023

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Chemical

Physical Water Data

Physical water analysis results for both monitoring stations are displayed in **Table 19**. These *in situ* measurements were taken at the onset of any sampling events. Data are limited, as sampling only began in January 2023. Additionally, due to equipment malfunction and the outfall station having no flow during baseflow events, no comparison can be made between the two stations.

Table 19
Physical Water Data

Event	Date	Event Type	Outfall Physical Water Data		Instream Physical Water Data	
			pH	Water Temp (F)	pH	Water Temp (F)
2023-01	1/12/23	Storm	N/A	N/A	N/A	N/A
2023-02	2/16/23	Storm	N/A	N/A	N/A	N/A
2023-03	3/16/23	Base Flow	-	-	7.32	50.5
2023-04	5/9/23	Base Flow	-	-	7.34	60.4
2023-05	6/14/23	Storm	7.85	66.8	7.30	58.7
2023-06	6/16/23	Storm	7.93	63.5	7.35	58.8

In March 2023, a YSI EXO1 sonde was deployed upstream of the instream station to record the required continuous parameters. Due to supply chain issues with equipment suppliers, the continuous monitoring equipment could not be deployed before this date. At 15-minute intervals, temperature, pH, and specific conductance are recorded *in situ*. The measurements are displayed in **Figure 15** below.

The overall temperature trend increased between March and June, as expected. Typical day-night cycles were also observed. Stormwater runoff during this time period generally increased the water temperature within the stream. For example, during the storm on April 22, 2023 (exemplified in the Hydrological section above), the stream water temperature increased by 2.7 degrees, coinciding with the hydrologic peak at the outfall station.

There was no overall significant trend for pH during this time period, though expected day-night cycles were observed. Typically, pH values within streams are lower at night, as aquatic plants or algae respire, and higher during the day. Fluctuations in this diurnal cycle were generally greater during the late winter and early spring seasons. Like temperature, an increase in pH was also observed to coincide with the instream station hydrologic peak. During the storm event on April 22, 2023, pH increased from 7.3 to 7.52.

There was also no overall trend for specific conductivity during this time period, though expected diurnal cycles were present. The 2022-2023 winter was relatively warm, so less road salt than normal was applied to roadways. Conductance was higher at night and lower during the day, the inverse of pH. Specific conductance displayed an inverse relationship to stormwater

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volume relative to temperature and pH. As stormwater dilutes the ions present, electrical conductance drops. During storm event on April 22, 2023, specific conductance dropped from 655 $\mu\text{S}/\text{cm}$ to 126 $\mu\text{S}/\text{cm}$. The trough of this drop coincides with the hydrologic peak at the instream station, similar to temperature and pH.

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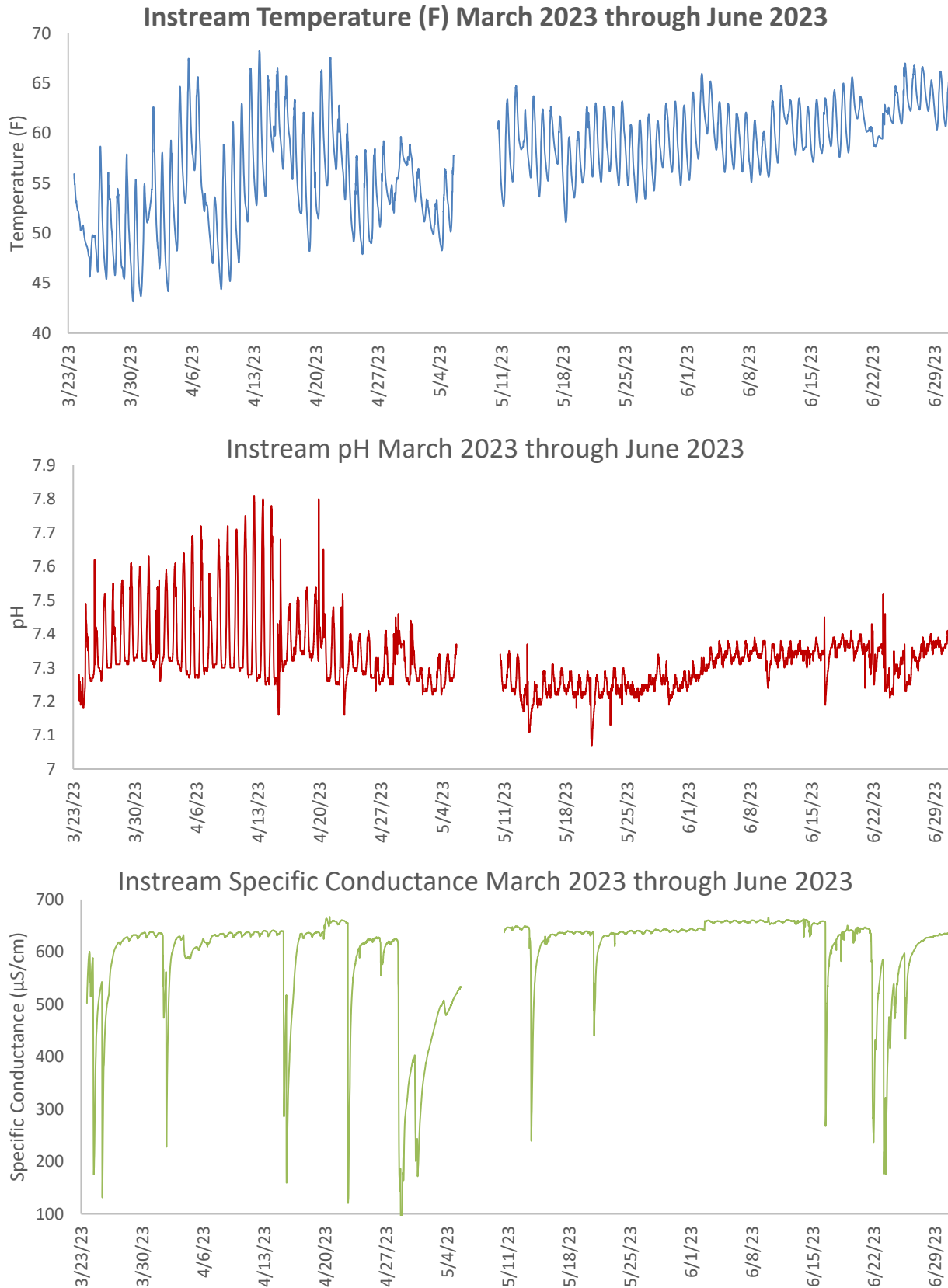


Figure 15: 2023 Instream Temperature, pH, and Specific Conductance Measurements

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Event Mean Concentrations

The event mean concentration (EMC) values and ranges for the six storm flow and baseflow events for this reporting year are displayed in **Table 20**. Of the observed analytes, nitrate/nitrite was the only one to show a significant difference between the two stations for this reporting year. In this case, nitrate/nitrite was significantly greater at the instream station. The minimum EMC for each analyte at the outfall station was zero because the Robert’s Field outfall was dry during both baseflow samples during this reporting year. For many analytes at the instream station, the reporting limit is used as the minimum EMC value, which represent samples below detection.

Table 20
EMC Values

Event Mean Concentration		Outfall Station			Instream Station			Significance
Analyte	Units	Mean	Min	Max	Mean	Min	Max	p-value
BOD	mg/L	9.5	0	30.42	6.7	2	29.36	0.266
TSS	mg/L	43.1	0	124.3	44.2	1	212.2	0.979
Ortho-P	mg/L	0.04	0	0.14	0.02	0.01	0.05	0.309
Total P	mg/L	0.16	0	0.43	0.14	0.01	0.56	0.655
Ammonia	mg/L	0.45	0	1.36	0.30	0.2	0.5	0.195
NO₂/NO₃	µg/L	0.62	0	2.05	5.06	2.51	7.8	0.005
TKN	µg/L	0.35	0	0.78	0.57	0.5	0.77	0.741
TN	µg/L	0.85	0	0.98	3.47	3.28	3.66	0.182
Chloride	mg/L	22.5	0	53.94	101.9	54.31	145.1	0.125

Annual Pollutant Loads

A discharge hydrograph was created for this reporting period for each monitoring station. Manual baseflow separation was used to determine storm flow and baseflow at each station throughout the reporting year. Estimations for baseflow, storm flow, and total annual loading based on EMC values and discharge data are located in **Table 21**. Please note that baseflow loadings could not be estimated for the outfall station because the Robert’s Field outfall was dry during baseflow sampling. The majority of stormwater volume at the outfall station was from storm events; only about 16% of the total flow was from baseflow, so baseflow would likely contribute only a marginal added mass of each analyte.

As expected, greater analyte loads were observed at the instream station. Annual loading is typically reported and analyzed in this report as a measure of outfall contribution to the instream station. As described above, many analytes, particularly TKN, TP, and OP, are often left-censored. Therefore, loadings for these analytes will be overestimated as the reporting limit value will be used for any calculations for left-censored data.

As flow was zero during baseflow sampling at the outfall monitoring station, baseflow loadings could not be estimated. Only storm loadings will be compared for the 2023 report. Contributions of nitrate/nitrite and chloride were much lower than other analytes. Only 3% of estimated loading at the instream station was contributed by the outfall station. The

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nitrate/nitrite EMC was the only analyte that was significantly different between stations. The baseflow loading for nitrate/nitrite at the instream station was much higher than for storm flow. On a wetter year, the baseflow and storm flow loading would likely be more comparable. The outfall station only contributed 5% of the total loading at the instream station. It would be expected that this contribution would increase during years with winter seasons with numerous snow or ice events. Other analyte contributions ranged from 12% to 26% during storm events, with ammonia and ortho-phosphate being the analytes with the greatest contribution from the outfall monitoring station.

Table 21
Annual Pollutant Loads

Annual Pollutant Loading (lbs/yr)										
Loc.	Type	BOD	TKN	NO ₂ /NO ₃	Am	TN	TP	OP	TSS	Cl
Outfall	Base	-	-	-	-	-	-	-	-	-
	Storm	293	7	19	14	26	5	1	1,332	694
	<i>Total</i>	>293	>7	>19	>14	>26	>5	>1	>1,332	>694
Instream	Base	779	195	2,806	97	3,001	6	4	390	50,663
	Storm	1,471	52	652	53	704	32	4	10,728	14,339
	<i>Total</i>	2,250	247	3,458	150	3,705	38	8	11,118	65,002

Seasonal Pollutant Loads

Seasonal discharge for each monitoring station is provided in **Figure 16**. The instream station expectedly displayed greater discharges for each season compared to the outfall station. Therefore, it is not unexpected to have greater loadings there as well. The spring season had a greater stormwater volume than the winter season. The winter season had a much larger precipitation deficit. Seasonal loadings based on the EMC values and seasonal discharges from **Figure 16** are located in **Table 22**. As previously noted, monitoring and sampling equipment was not installed until the end of the 2022 calendar year. Hydrological and chemical data are only available for the winter and spring seasons for this reporting period. Due to lab error, TKN was not analyzed for some spring samples, primarily for the outfall station.

For the outfall monitoring station, loading was much greater for all analytes except chloride during the spring season, despite having lower precipitation. Chloride loading was much greater during the winter season, likely due to road deicers applied near the outfall monitoring station. Conversely, loading at the instream monitoring station was split between winter and spring. Total phosphorous, ortho-phosphate, and suspended solids were much greater during the spring season, while TKN and nitrate/nitrite were greater during the winter season. Unlike the outfall station, the instream station did not have much seasonality for chloride. Approximately 3,000 more pounds of chloride was estimated in the spring than winter. Baseflow loading was relatively even for spring and winter, but storm event EMC values were much greater during the spring than the winter season.

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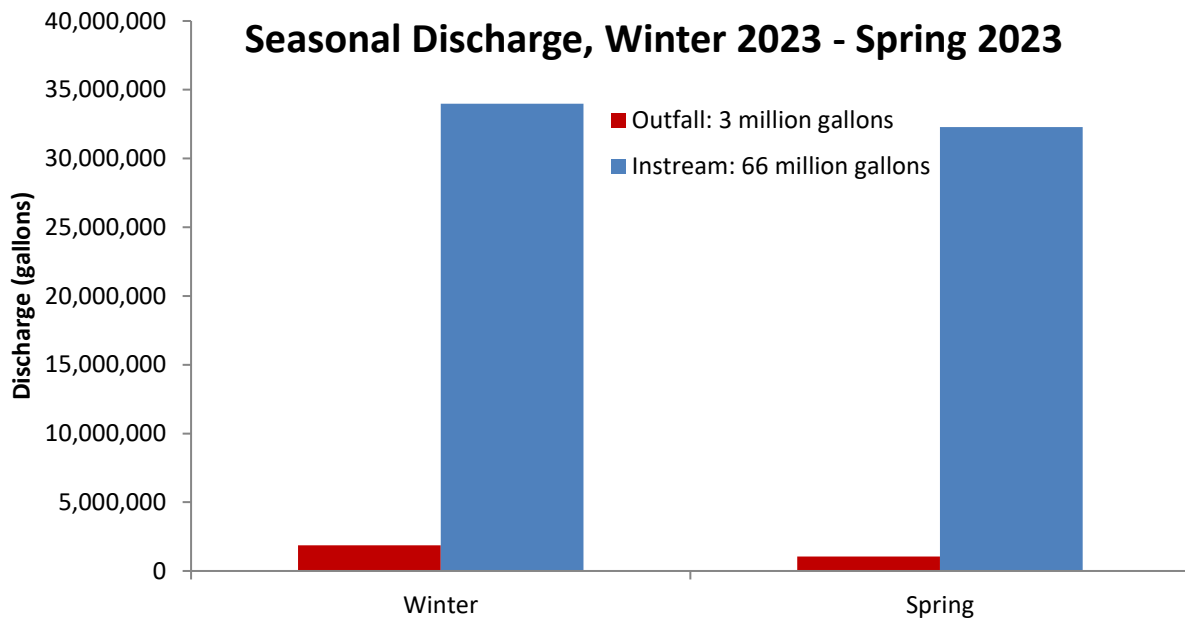


Figure 16: Seasonal Discharge for the 2023 Reporting Year

**Table 22
Seasonal Pollutant Loads for the 2023 Reporting Year**

Seasonal Pollutant Loading (lbs)										
Loc.	Season	BOD	TKN	NO ₂ /NO ₃	Am	TN	TP	OP	TSS	Cl
Outfall	Summer	-	-	-	-	-	-	-	-	-
	Autumn	-	-	-	-	-	-	-	-	-
	Winter	62	11	2.3	4.0	13.3	1.2	0.2	351	796
	Spring	225	-	16	10	>16	3.7	0.8	984	151
	Total	287	>11	18.3	14	>29.3	4.9	1.0	1,335	947
Instream	Summer	-	-	-	-	-	-	-	-	-
	Autumn	-	-	-	-	-	-	-	-	-
	Winter	601	155	1,724	61	1,879	8.2	3.8	2,633	30,285
	Spring	1,426	102	1,684	87	1,786	25.5	4.0	7,119	33,888
	Total	2,027	257	3,408	148	3,665	33.7	7.8	9,752	64,173

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Biological

A complete list of taxa found, and the frequency of their occurrence, can be found in **Appendix E**. MBSS scoring criteria for the genus-level benthic macroinvertebrate IBI for the Eastern Piedmont region of Maryland is shown in **Table 14**. An IBI score was calculated by calculating the mean of the six component metric scores, thus deriving an average IBI score. Corresponding narrative ratings were also determined in accordance with MBSS Standards. The narrative rating guidelines can be found in **Table 15**.

The biological health of the stream reach upstream of the instream monitoring station is summarized by **Table 23**. For the 2023 reporting year, the stream reach received a stream health rating of poor and an IBI score of 2.00. No category was scored a 5 for this reporting year, but the total number of taxa observed (24) is at the threshold between a score of 3 and 5 for that category. The stream reach scored very poorly for the quantity of Ephemeroptera, Plecoptera, and Trichoptera taxa, with only five unique taxa observed. This is particularly true for the quantity of Ephemeroptera taxa; only four individuals from the taxon *Baetis*, a moderately tolerant taxon, were found. Only eight of 134 total individuals in the sample were found to be intolerant. All eight individuals were from the *Glossosomatidae* family of the order Trichoptera (Caddisfly).

Table 23
IBI Score for the 2023 Reporting Year

Metric	Result	Score
Number of Taxa	24	3
Number of EPT	5	3
Number Ephemeroptera	1	1
% Intolerant Urban	5.9	1
% Chironomidae	66.7	1
% Clingers	36.4	3
Total Score		12
IBI Score		2.00
Narrative Rating		Poor

The habitat scoring for the baseline reporting year (2023) was conducted on July 18, 2023, just upstream from the instream monitoring station. This occurred at the same location as the biological sampling that was conducted in Spring 2023. The habitat assessment results for the instream station are summarized in **Table 24**. The scores are out of a maximum 160 points, based on the eight parameters in **Table 16**. For the 2023 reporting year, the instream station had an overall score of 81 out of a total possible 160. The majority of parameters fell within the higher end of the Marginal category. The weakest parameter for the instream station was for the site’s trash rating, which was “6 – Marginal,” due to the abundant presence of trash throughout the stream. Pool/glide/eddy quality and embeddedness were also two of the lowest-rated categories of habitat parameters. Gravel/cobble particles within the stream section were surrounded by approximately 55% by fine sediments. The parameter with the highest observed rating was for shading, as approximately 80% of the length of the stream channel was shaded; this resulted in an Optimal rating for this category.

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Table 24
Spring 2023 Habitat Assessment Results

Parameter	In-stream	Category
Instream Habitat	10	Marginal
Epifaunal Substrate	11	Sub-Optimal
Velocity/Depth Diversity	10	Marginal
Pool/Glide/Eddy Quality	9	Marginal
Riffle/Run Quality	10	Marginal
Embeddedness	9	Marginal
Shading	16	Optimal
Trash Rating	6	Marginal
<i>Total Score (max. of 160)</i>	81	
<i>Score (percent)</i>	51%	

2. Watershed Assessment Monitoring

The County is currently developing a Watershed Assessment Monitoring Plan, which is due to MDE by April 30, 2024. The Watershed Assessment Monitoring will include requirements and parameters for collecting and assessing stream biology and habitat, bacteria, and chlorides. The Watershed Assessment Monitoring will commence once the County has received plan approval from MDE.

3. PCB Source Tracking

The permit instructs PCB monitoring to be done for all applicable TMDL WLAs. Carroll County provided feedback to MDE during the permit renewal process regarding the absence of PCB TMDLs within the County. MDE confirmed in the “Phase I Medium Response to Comments” (MDE, 2022) that permittees without a PCB TMDL are not required to perform this activity. Carroll County has no applicable TMDL for PCBs, therefore no monitoring plan or source tracking for PCBs is required.

H. Program Funding

1. Operational Expenses

Table 25 relates to the operating budget expenses that support compliance needs for the County’s NPDES MS4 permit requirements. Operating expenditures in this program are principally associated with administration of the permit, monitoring, maintenance of BMPs, debt service, and other responsibilities associated with the daily operations of the PLM and BRM.

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Table 25
Operating Expenses

Operating Program Elements	Expenditures
Administration - Salaries and Benefits	\$1,411,109.19
Operation and Maintenance - Mowing, Gasoline, Repairs/Parts	\$150,105.39
Public Education and Outreach	\$6,068.72
Lab Testing/Supplies, Contract Services, Small Equipment, Conferences	\$14,393.28
Debt Service Interest	\$587,933.19
Total Operating Expenditures for FY2023	\$2,169,609.77

2. Capital Expenses

A capital budget was established early in the program to support compliance needs for the County’s NPDES MS4 permit responsibilities. Capital expenditures (**Table 26**) in this program are principally associated with the permit’s Watershed Assessment and Restoration requirements.

Table 26
Capital Expenses

Capital Programs	Expenditures
Watershed Assessment and Improvement (NPDES)	\$1,378,838.74
Stormwater Facility Renovations	\$701,112.79
Total Capital Expenditures for FY2023	\$2,079,951.53

Cumulative capital expenditures for the program since 2005 can be found in **Table 27**. The approved FY2024-2029 CIP estimates of program funds can be found in **Tables 28 and 29**. It is important to note that the funding beyond FY2024 is subject to future budget review and approval processes. Therefore, no guarantee is made to future appropriations beyond FY2024.

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Approved Community Investment Plan 2024 – 2029

Table 27
Total NPDES MS4 Capital Expenditures
Carroll County, Maryland
July 15, 2005 through June 30, 2023

Permit Year	Capital Expenditures
7/15/05 to 6/30/06	\$36,040.19
7/1/06 to 6/30/07	\$53,593.00
7/1/07 to 6/30/08	\$1,978,829.14
7/1/08 to 5/30/09	\$816,823.30
7/1/09 to 5/30/10	\$1,744,986.91
7/1/10 to 6/30/11	\$672,479.04
7/1/10 to 6/30/11	\$23,269.00
7/1/11 to 6/30/12	\$1,635,671.32
7/1/12 to 6/30/13	\$1,012,067.26
7/1/13 to 6/30/14	\$2,147,337.51
7/1/14 to 6/30/15	\$2,964,442.44
7/1/15 to 6/30/16	\$2,297,193.78
7/1/16 to 6/30/17	\$4,576,024.22
7/1/17 to 6/30/18	\$2,458,250.84
7/1/18 to 6/30/19	\$4,911,221.68
7/1/19 to 6/30/20	\$10,167,596.72
7/1/20 to 6/30/21	\$6,973,924.29
7/1/21 to 6/30/22	\$4,189,183.91
7/1/22 to 6/30/23	\$2,079,951.53
Total permit expenditures, to date	\$50,738,886.08
Grants received	\$16,752,204.10
Actual County expenditures	\$33,986,681.98

Table 28
Watershed Assessment and Improvement (NPDES)

Program Elements	FY24	FY25	FY26	FY27	FY28	FY29	Prior Allocation	Total Cost
Engineering & Design	550,000	550,000	600,000	300,000	175,000	225,000		2,400,000
Land Acquisition								0
Site Work								0
Construction	2,100,000	3,007,010	3,090,010	3,524,500	3,785,720	3,900,000	11,178,688	30,585,928
Equipment & Furnishings								0
Other								0
Total	2,650,000	3,557,010	3,690,010	3,824,500	3,960,720	4,125,000	11,178,688	32,985,928

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The Stormwater Management Facility Renovation Program CIP (**Table 29**) has renovated 57 of the 235 existing County-owned structural stormwater management facilities back to as-built condition. Renovation work has involved removal of woody vegetation, replacement of corrugated metal pipes, repair of eroded areas at the outfall or inflow points of the facility, and removal of accumulated sediment. Another important factor taken into consideration when evaluating the facilities prior to renovation is the accessibility to the facility and ease of maintenance. Priority of projects is based on triennial inspection reports and the age of the facility. To date, close to \$1,940,000 has been spent on this renovation effort.

Table 29
Stormwater Management Facility Renovations

Program Elements	FY24	FY25	FY26	FY27	FY28	FY29	Prior Allocation	Total Cost
Engineering & Design			10,000	10,000		10,000		30,000
Land Acquisition								0
Site Work								0
Construction	300,000	300,000	290,000	290,000	300,000	290,000		1,770,000
Equipment & Furnishings								0
Other								0
<i>Total</i>	300,000	300,000	300,000	300,000	300,000	300,000	0	1,800,000

Table 30 provides a project list and the status of the individual projects in the approved capital budget for the Stormwater Management Facility Renovation Program.

Table 30
Stormwater Management Facility Renovation Program
2016-2029

<i>Completed Projects</i>		
Year	Project Name	MDE 8-Digit Watershed
2016	Carroll Highlands	Liberty Reservoir
2016	Grand Valley Farms Sec. 2	Double Pipe Creek
2016	Jenna Estates Sec. 2 Ph. 1 Pond 1	South Branch Patapsco
2016	Oklahoma Phase 1 Pond #2	Liberty Reservoir
2016	Poole Meadows	Liberty Reservoir
2016	Washington Square	Liberty Reservoir
2017	Carmae Acres	South Branch Patapsco
2017	Carrollyn Manor Section 6	Double Pipe Creek
2017	Eldersburg Estates Sec. 1	South Branch Patapsco
2017	Grand View Resub. Lot 38	South Branch Patapsco
2017	Kalten Acres Sec. 1	Double Pipe Creek
2017	O'Brecht Estates	South Branch Patapsco
2017	Oklahoma Sweetwater	Liberty Reservoir

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Year	Project Name	MDE 8-Digit Watershed
2017	Sun Valley Waterloo Section	Liberty Reservoir
2018	C. C. Commerce Center	Liberty Reservoir
2018	Carroll Woods Est. Sec. 7	Lower Monocacy River
2018	Exceptional Center	Double Pipe Creek
2018	Larash Manor	Liberty Reservoir
2018	Matthews Meadows Sec. 2	Liberty Reservoir
2018	Piney Ridge Village 7	South Branch Patapsco
2018	Squires Subdivision	Liberty Reservoir
2018	Stafford Estates	Liberty Reservoir
2018	Wilmot Manor	Liberty Reservoir
2019	Aspen Run	Liberty Reservoir
2019	Eldersburg 3-5	South Branch Patapsco
2019	Hoff Pond	Liberty Reservoir
2019	Hunters Crossing #2	South Branch Patapsco
2020	Benjamins Claim – Jacobs	South Branch Patapsco
2020	Bluebird Hills	Prettyboy Reservoir
2020	Sumners Hollow Pond 2	Liberty Reservoir
2020	Tydings Acres	South Branch Patapsco
2021	Carrollyn Manor Section 7	Double Pipe Creek
2021	Clipper Hills Gardenia	South Branch Patapsco
2021	Ralph Street Extension	Liberty Reservoir
2021	Sumners Hollow Pond 1	Liberty Reservoir
2021	Wilmot	Liberty Reservoir
2022	Bark Hill Park	Double Pipe Creek
2022	Maintenance Center Iron	Double Pipe Creek
2022	Meadow Ridge ED Pond 1	Double Pipe Creek
2022	Meadow Ridge ED Pond 2	Double Pipe Creek
2022	Underground Facilities (8)	Multiple
2023	North Carroll Library	Prettyboy Reservoir
2023	Patapsco Valley Overlook	South Branch Patapsco
2023	Friendship Overlook	Double Pipe Creek
2023	County Park Wetland	Double Pipe Creek
2023	Freedom Hills Farm	South Branch Patapsco
2023	Piney Ridge Village 5/6	South Branch Patapsco
2023	Finksburg Industrial Park	Liberty Reservoir
2023	Elderwood Village/Oklahoma Ph IV	Liberty Reservoir
2023	Pine Brook Farms Sect. 1	South Branch Patapsco

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<i>Planned Projects</i>		
Year	Project Name	MDE 8-Digit Watershed
2024	Flower Valley	South Branch Patapsco
2024	Fox Ridge Hunt	Liberty Reservoir
2024	Golden Pond Overlook	South Branch Patapsco
2024	Piney Ridge Village 5/6	South Branch Patapsco
2024	Safe Haven	Double Pipe Creek
2025	Farm Museum Pond	Double Pipe Creek
2025	Stone Manor 2 #1	Liberty Reservoir
2025	Stone Manor 2 #2	Liberty Reservoir
2025	Stone Manor 2 #3	Liberty Reservoir
2025	Stone Manor 2 #5	Liberty Reservoir
2025	Stone Manor 2 #6	Liberty Reservoir
2025	The Farms Spencers Choice #1	Prettyboy Reservoir
2025	The Farms Spencers Choice #2	Prettyboy Reservoir
2026	Bradford Knoll	Liberty Reservoir
2026	Carroll Co. Multi. Parking	Liberty Reservoir
2026	Kirkner Estates	Liberty Reservoir
2026	Sherlock Holmes Sec. 3B	Liberty Reservoir
2026	Squire Village	Liberty Reservoir
2026	Windemere Estates #1	Liberty Reservoir
2027	Hoods Mill Borrow Area	South Branch Patapsco
2027	Jenna Estates Sec. 2 Ph. 2 #1	South Branch Patapsco
2027	Jenna Estates Sec. 2 Ph. 2 #2	South Branch Patapsco
2027	Jenna Estates Sec. 2 Ph. 3 #1	South Branch Patapsco
2027	Jenna Estates Sec. 2 Ph. 3 #2	South Branch Patapsco
2027	Sun Valley Waterloo Section	Liberty Reservoir
2028	Avonshire Woods #1	South Branch Patapsco
2028	Avonshire Woods #2	South Branch Patapsco
2028	Avonshire Woods #3	South Branch Patapsco
2028	Eldersburg Library	South Branch Patapsco
2028	Pine Brook Farms Sec. 2 "A"	South Branch Patapsco
2028	Pine Brook Farms Sec. 2 "B"	South Branch Patapsco
2028	Stoney Valley	Double Pipe Creek
2029	Ronsdale Road	Liberty Reservoir
2029	Luther Gardens	Liberty Reservoir
2029	Chinquapin Hill	Liberty Reservoir
2029	Hollenberry Road	South Branch Patapsco
2029	Westminster Highlands	Double Pipe Creek
2029	Spruce Meadows Pond #2	Liberty Reservoir

Part VI. Special Programmatic Conditions

Carroll County and its municipal co-permittees meet monthly, as the formally adopted Water Resource Coordination Council (WRCC), to comprehensively address permit planning and implementation. The WRCC continues to serve as the County's local WIP team. This group has been meeting since its inception in 2008, which has allowed permit compliance, stormwater mitigation, and the Chesapeake Bay clean-up effort to remain as top priorities.

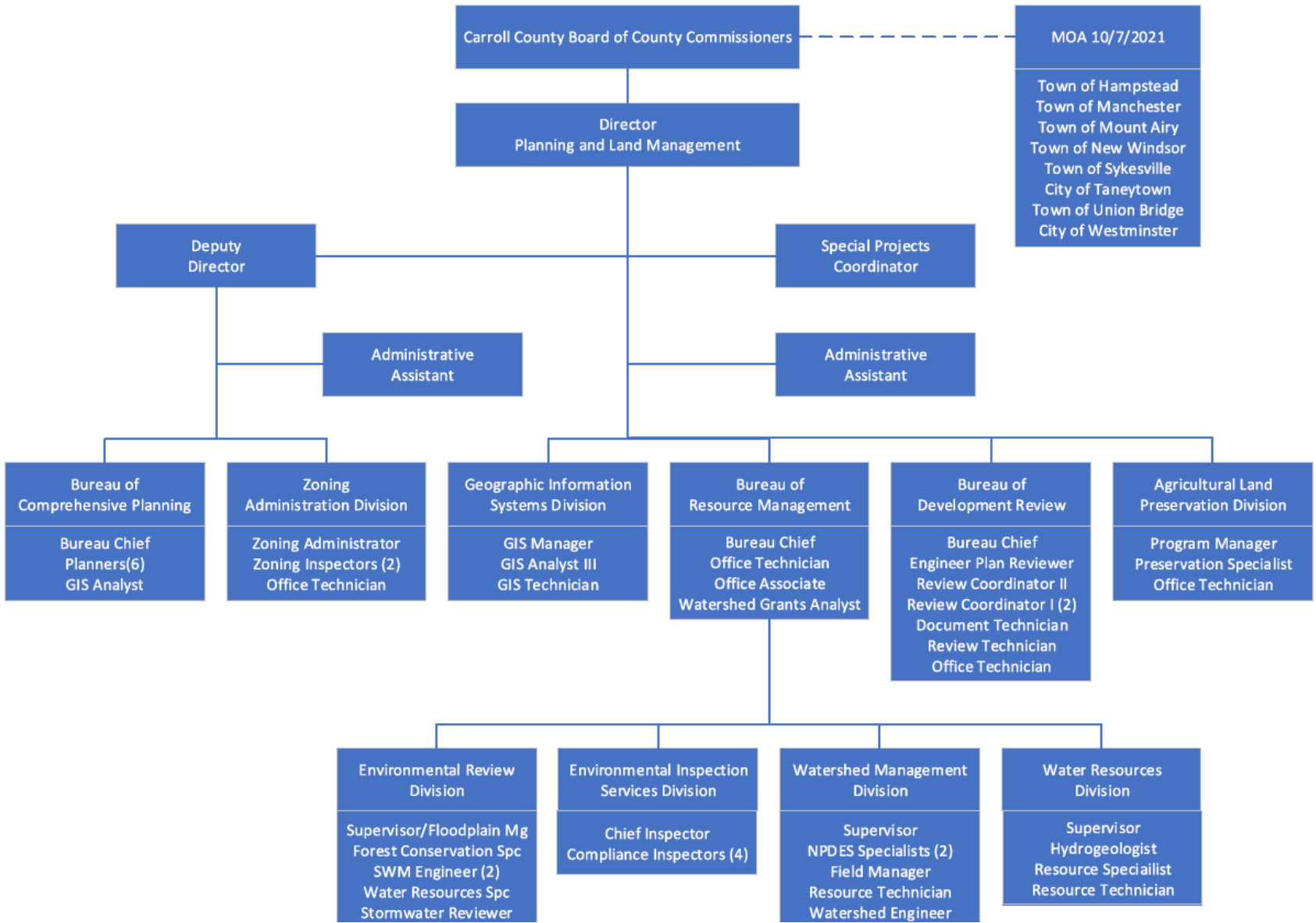
Maryland State legislative requirements for land use and planning are reviewed and managed by the Bureau of Comprehensive Planning. Requirements are incorporated into the County Master Plan and County code as appropriate to ensure compliance with State guidelines.

Appendix A

Organizational Chart: Department of Planning and Land Management

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Appendix A



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Appendix B

Carroll County 2023 MS4 Annual Report Appendix B CD (Available Upon Request)

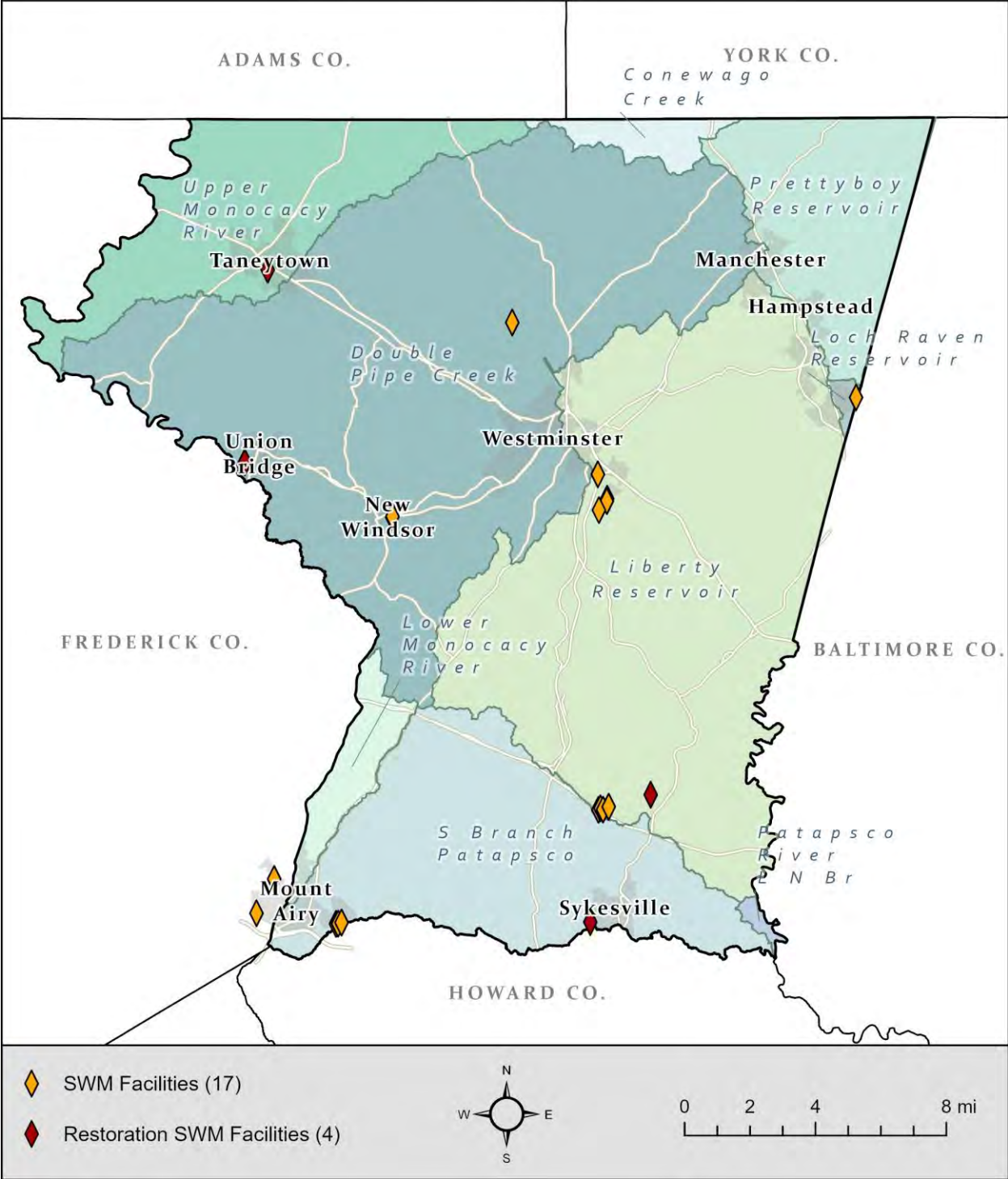
- **Carroll County MS4 Geodatabase**
- **Carroll County Storm Drain System Geodatabase**
- **Carroll County Industrial and Commercial Geodatabase**
- **Mount Airy Phase II MS4 Guidance Documents**

Carroll County, Maryland 2023 As-Built Approved SWM Facilities Map

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As-Built Approved Structural SWM Facilities

Carroll County, MD | FY 2023



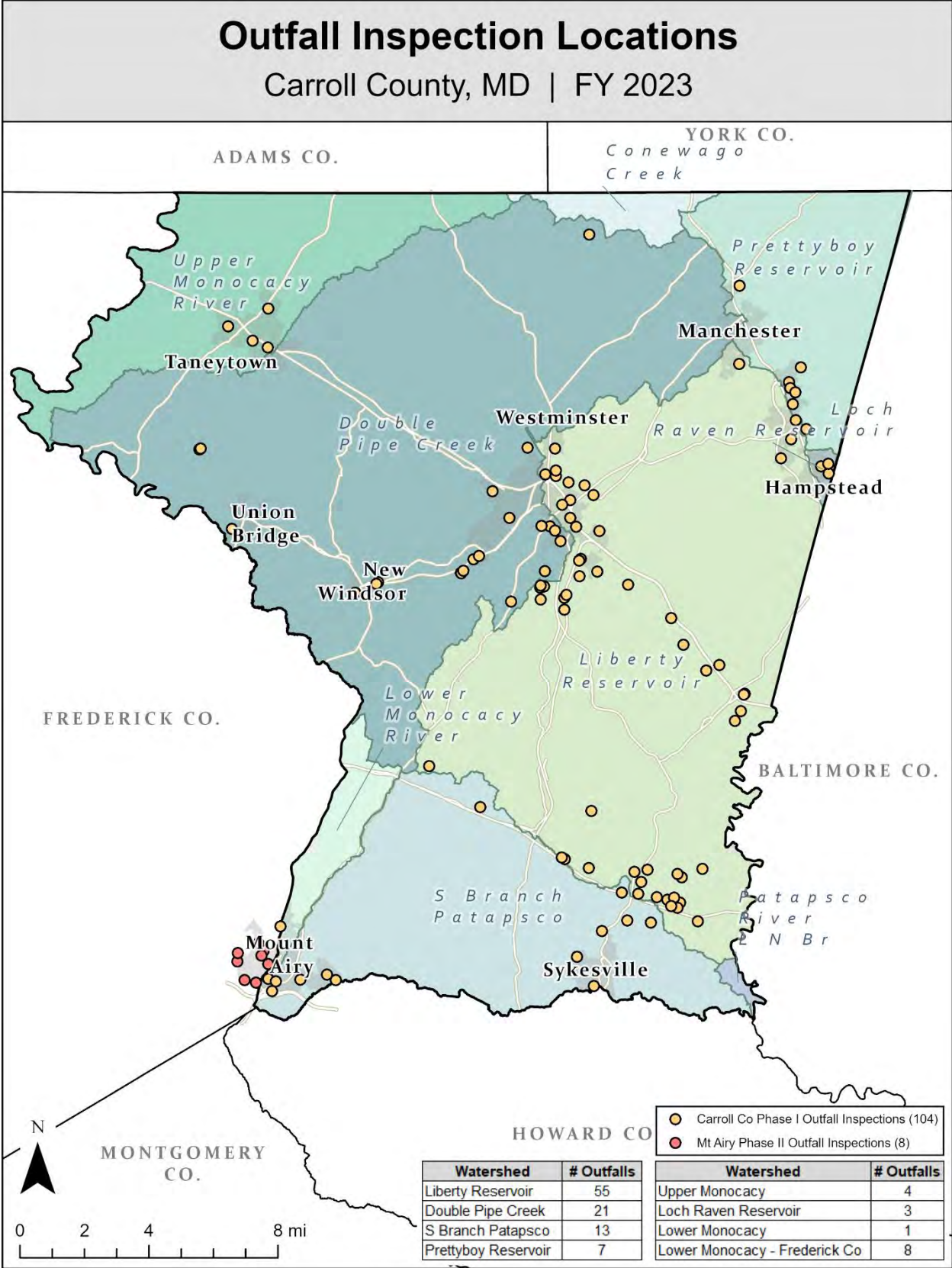
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Appendix C

Illicit Discharge Detection and Elimination (IDDE)

- **2023 Outfall Location Map**
- **2023 Illicit Discharge Outfall Screening Actions Taken**
- **2023 Commercial/Industrial Visual Survey Location Map**
- **2023 Commercial/Industrial Visual Survey Summary**
- **2023 Illicit Discharge Incident Report Summary**
- **2023 NPDES Annual Manager/Supervisory Level Stormwater Pollution Prevention Training Agenda**

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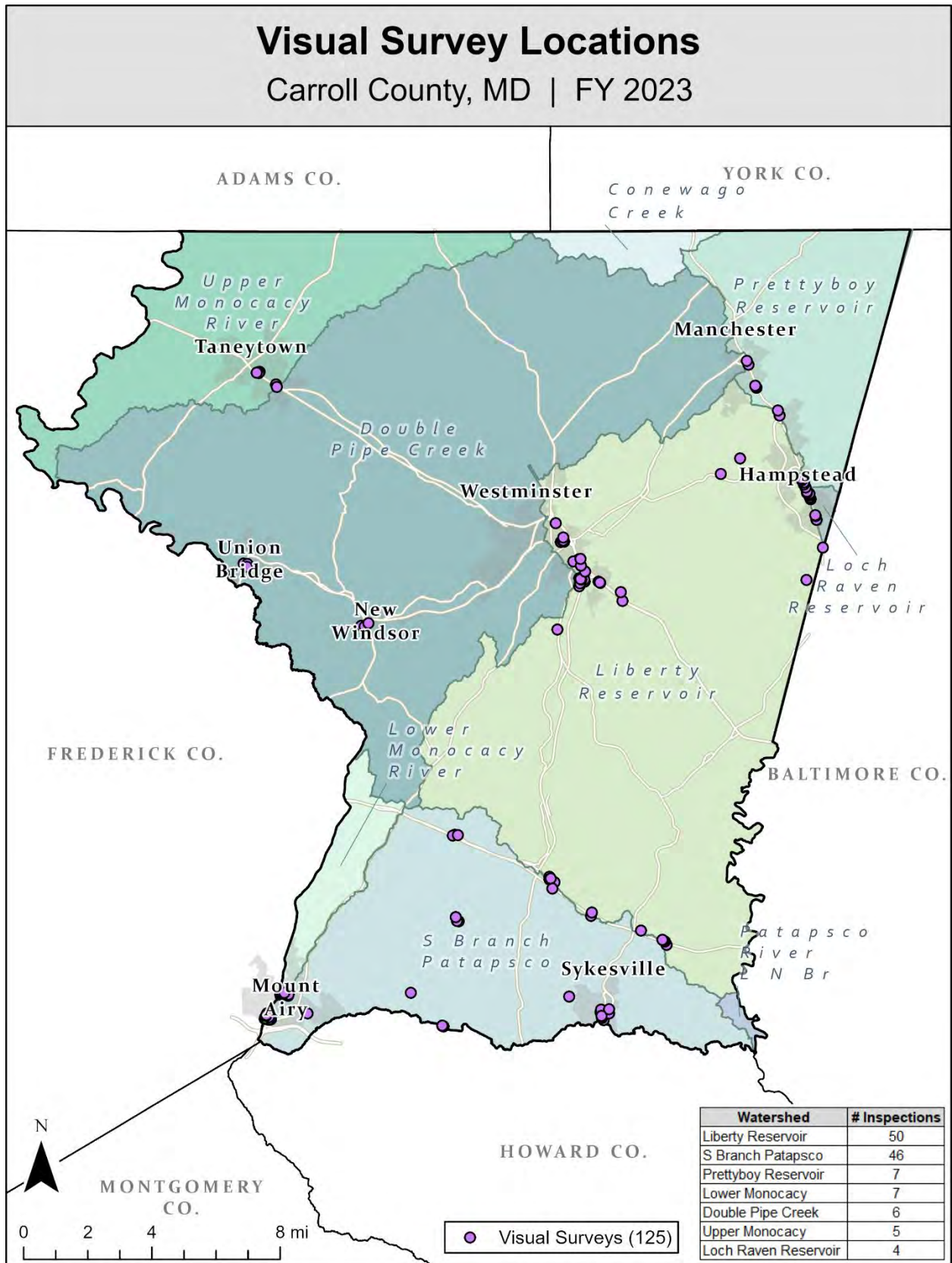


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2023 Illicit Discharge Outfall Screening Actions Taken July 1, 2022 – June 30, 2023

Outfall/NPDES Study Point	Action Taken
N/A	No Illicit Discharges/ No Actions Necessary This Permit Year

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2023 Commercial Industrial Visual Survey Summary Visual Survey Areas Requiring Follow-up Actions Processed from July 1, 2022 – June 30, 2023

This table presents the **8** of **125** Commercial/Industrial Visual Surveys recommended for follow-up*.
No Illicit Discharges Observed / Potential Pollutant Sources / Activity

Visual Survey Action # / Unique Site ID #	Date	Land Use	Activity/ Location/ Watershed	Potential Significant Pollutant Source	Follow-Up Action/Status
<u>VS-23-0001</u> 0714004343	01/18/23	C	Old Liberty Road Sykesville, MD	Skid steer loader and outdoor equipment sales, rentals, and service. Limited view for visual survey with general concern regarding potential spills, sediment from equipment cleaning from aerial photography. No Illicit Discharge	Flagged SWM BMP maintenance inspection file regarding concerns for scheduled April inspection. BMP inspection found activities and conditions such that MDE Compliance was contacted, resulting in the facility being required to take corrective actions and apply for an MDE 20SW Industrial Stormwater permit to prevent potential stormwater runoff pollution.
<u>VS-23-0002</u> 0714039872	01/18/23	I	Enterprise Street, Sykesville, MD	Paving and construction equipment storage yard and shop. Limited view for visual survey. Potential from equipment cleaning, loading/unloading, etc. No Illicit Discharge	Sent MS4 Educational Letter w/ General Good Housekeeping Best Management Practice Information
<u>VS-23-0003</u> 0714040080	01/18/23	I	Enterprise Street, Sykesville, MD	Paving and construction equipment storage yard and shop. Limited view for visual survey. Potential from equipment cleaning, loading/unloading, etc. No Illicit Discharge	Sent MS4 Educational Letter w/ General Good Housekeeping Best Management Practice Information (combined w/item VS-23-0002 above)

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Visual Survey Action # / Unique Site ID #	Date	Land Use	Activity/ Location/ Watershed	Potential Significant Pollutant Source	Follow-Up Action/Status
<u>VS-23-0004A</u> 0714015744 (Multi-Parcel)	01/18/23	C	Woodbine Road, Sykesville, MD	Lawn, Landscape, Tree Care Equipment Sales & Service. Partial view of rear lot from road and aerial photography shows lawn equipment salvage yard near stream buffer and floodplain area. No Illicit Discharge	Sent MS4 Educational Letter w/ General Good Housekeeping Best Management Practice Information
<u>VS-23-0004B</u> 0714004785 (Multi-Parcel)	01/18/23	C	Woodbine Road, Sykesville, MD	Adjoining parcel to 0714015744 property above. Landscape materials, vehicle storage, loading/unloading areas near stream buffer and floodplain. No Illicit Discharge	Sent MS4 Educational Letter w/ General Good Housekeeping Best Management Practice Information (combined with item above)
<u>VS-23-0005</u>	02/06/23	C	Cranberry Road, Westminster, MD	Pavement damp/stained. Possible auto fluids or rinse off on pavement outside of work bay, 30 feet from inlet. Also observed on past aerial photography. No Illicit Discharge	Sent MS4 Educational Letter w/ Auto-Industry Good Housekeeping Best Management Practice Information
<u>VS-23-0006</u>	03/07/23	C	Elger Street, Union Bridge, MD	Small reseller/recycler of various used items. No liquid storage containers observed. No Illicit Discharge	Sent MS4 Educational Letter w/ General Good Housekeeping Best Management Practice Information

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Visual Survey Action # / Unique Site ID #	Date	Land Use	Activity/ Location/ Watershed	Potential Significant Pollutant Source	Follow-Up Action/Status
<u>VS-23-0007</u>	06/10/23	C	Hanover Pike, Hampstead, MD	Rear of multiple restaurants at shopping center. Some kitchen equipment outside. Some staining on pavement. Fats/Grease receptacle okay. Past 'Hotspot'. No Illicit Discharge	Continue to monitor. 8/16/2024: No Illicit Discharge but fats and grease receptacle maintenance needs improvement. Small puddle outside and staining on pavement toward inlet showing possible outdoor equipment cleaning activity. Sent MS4 Educational Letter w/ Food- Industry Good Housekeeping BMP Information. Continue to monitor.

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2023 Illicit Discharge Incident Report Summary Illicit Discharge Complaints Processed from July 1, 2022 – June 30, 2023

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-22-0001	<p>Citizen reported to CC DPW an observation of brown foam and stream discoloration with concern for potential upstream sanitary sewer issue.</p> <p>Reported: 02/15/22</p>	<p>Potential WWTP outfall discharge source was cleared. On-going investigation and monitoring noted intermittent white foam flow from a separate private storm drain pipe outfall discharge from a pond of an industrial land use property on Hanover Pike. Analytical chem tests identified elevated levels of phosphorous and ortho-phosphates. Investigation determined an apparent structural issue at the pond's riser structure, allowing sediment and flow to enter the storm drain to the outfall. Also determined water fire suppression lines flushed out with potable water to the pond.</p> <p>MDE Compliance staff was involved in the investigation. CC EISD enforcement letter issued requiring facility owner at 500 Hanover Pike to apply for 17HT permit for fire line discharges and a video inspection assessment of the riser structure by a civil engineer with recommendations for repairs, etc. to be reported to the County by 8/25/2023.</p>	<p>Illicit Discharge</p> <p>Case Closed: 02/23/22</p> <p>Re-Opened: 06/01/22</p> <p>On-going Enforcement In-Progress</p> <p>LU: Industrial</p>	Hanover Pke. Hampstead, MD (Municipal)
PD-22-0007	<p>Citizen reported to Town of Hampstead DPW gray water coming from residential property on west side of railroad tracks through the railroad culvert, leaving puddles with septic odor in low swale of agricultural field.</p> <p>Reported: 04/29/22</p>	<p>CC EISD investigated with Town of Hampstead DPW staff and confirmed gray water with septic odor in agricultural drainage swale. PVC pipe at rear residential property that discharges along ditch on west side of RR track to culvert had no flow at time of site visit. Referral to CCHD, who noted no failing septic observed on yard surface and no flow at PVC pipe at time of investigation. Noted significant amount stormwater flowing in ditch along RR tracks from rear of adjoining automotive business into the RR culvert to the agricultural swale. MDE Compliance notified. CCBRM follow-up monitoring with analytical chemical testing.</p> <p>10/2022 MDE Groundwater visited automotive business with owner deciding to terminate outdoor vehicle washing. CC BRM and CC Zoning site visit at auto business required property owner to remove gravel parking lot and meet original site plan approval limits. CC BRM required soil stabilization and seeding. Completed 5/2023.</p> <p>4/2023 CCHD determined septic failure at residential property (primary source for gray water) and will provide oversight working with owner to replace system going forward.</p>	<p>Illicit Discharge Eliminated</p> <p>On-Going Enforcement</p> <p>Case Closed: 6/30/2023</p> <p>LU: Residential</p>	Hanover Pike. Hampstead, MD (County)

2023 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-22-0010	CC Roads staff reported flow with septic odor running overland toward storm drain inlet. Reported: 06/10/22	CC EISD inspection noted no septic odor in inlet or connected outfall. Flow likely to be from spring in lower yard to inlet. Stormwater from residential properties settles in low area 30' downslope of inlet. Septic odor was noted. Low area is distance from residential septic areas. No evidence of failing septic in yards. Observed downspouts from second-nearest residence in direction of septic tank area (green caps) area. BRM continued to monitor. 11/07/2022 Final Monitoring – No odor or surface discharges or in inlet.	Non-Illicit Discharge Case Closed: 11/07/2023	Sean Circle, Woodbine, MD (County)
PD-22-0013	CC BRM staff reported surface discharge with foul odor from cleanout in parking lot. Reported: 07/06/2022	CC EISD inspection noting odor and damp stain on pavement at sanitary clean out toward nearby inlet. Inlet was clear. Down gradient stormwater system and SWM BMP was clear with no odor. Met with restaurant day manager who confirmed sanitary system back-up and overflow that was cleared by sanitary contractor. Provided Food-Industry Good House Keeping BMP brochure to manager.	Potential Illicit Discharge Case Closed: 07/18/2022	Englar Road, Westminster, MD (Municipal)
PD-22-0014	Citizen reported an automotive oil spill onto apartment house parking lot around May 3 rd by his tenant changing oil. Reported: 07/19/2022	CC EISD reviewed w/ Town of Manchester. Municipal Police responded May 3 rd and could not verify individual responsible. Town of Manchester notified by Police, observed limit of stain in parking space on parking lot, determined not near storm drain inlet. County EISD performed site inspection per citizen report, confirming dry stain and no runoff capacity. NPDES Compliance staff worked with Town of Manchester to issue an MS4 educational letter to tenant regarding regulations and provided Homeowner BMP guidance regarding automotive oil change practices.	Potential Illicit Discharge Case Closed: 07/26/2023	Park Avenue, Manchester, MD (Municipal)
PD-22-0015	MDE reported significant fish kill in State regulated waterway bordering a municipality. Reported: 07/02/2022	MDE performed initial biological and compliance investigation determining apparent source (pesticide) from a private property/business storage and loading area fronting waterbody with private inlet and storm drain-pipe discharge outfall directly to waterway. MDE reviewed with local Municipal MS4 Permit Co-Permittee and County CCBRM staff. MDE Compliance and Enforcement processing for corrective measures that may include 20SW Industrial permit registration w/SWPPP, and other actions TBD.	Illicit Discharge Eliminated On-Going MDE Enforcement In-Progress LU: Commercial	Sykesville, MD (Municipal)

2023 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-22-0016	BRM staff reported sanitary sewer fats/grease overflow onto shopping center pavement and roadway where traffic was passing through. Reported: 08/09/2022	NPDES Compliance staff investigated the discharge with City of Westminster Streets Department staff behind shopping center. Source determined to be a sanitary-related clogged pipe causing backup from grocery store. Met with store managers who contacted licensed plumber for emergency service to clear the pipe. CC Health Department was notified who shut down part of the store operation to reduce the flow until the clog could be cleared eliminating the overflow. Westminster DPW crew contained discharge with dry absorbents. Traffic cones were placed to redirect traffic away from the flow until pipe cleared. Dry cleanup measures were used for cleanup of the area. CC EISD staff confirmed downgrade SWM facilities and structures were not affected. Sent notification letter and Food Industry Good Housekeeping BMP guidance on preventing the issue from reoccurring.	Illicit Discharge Eliminated 8/11/22 Case Closed: 8/30/22 LU: Commercial	WMC Drive W. Main St. Westminster, MD (Municipal)
PD-22-0017	Citizen reported through County's online "See Click Report" system of a leaking trash truck leaving trail of wastewater spraying onto public roadway with significant odor. Reported: 8/29/2022	EISD staff investigated confirmed strong waste odor and trail of stains on public roadway. Call to trash hauler on 8/31 by NPDES Compliance Specialist to review issue and verbally notified corrective actions must be taken regarding the specific vehicle on this route to eliminate the discharge. Two follow-up site visits after trash picked up confirmed leaking/spill trail and odor eliminated.	Illicit Discharge Eliminated Case Closed: 10/07/2022 LU: Residential	Lawrence Dr. Eldersburg, MD (County)
PD-22-0018	MDE reported a business dumping paint in an inlet. Reported: 9/24/2022	EISD staff inspected downgrade SWM facility with no evidence of paint or wastewater discharge. County NPDES Compliance Specialist and City of Westminster DPW staff inspected site with shift manager checking every inlet. There was a paint contractor crew working on the building. There was no evidence of paint or related wastewater in inlets or on grates. The contractor and manager were made aware that no dumping of paint or clean-up water was permitted. Unrelated, a wastewater grime residual was observed on one inlet grate and in the inlet box near the store's large door entrance and found that it was from an on-going indoor floor cleaning sweeper practice. Discussed with manager with instructions to immediately stop the practice noting only rain was to enter the drain and to have the wastewater from the cleaning operation placed in the sanitary sewer. Another inlet had dry-wall gypsum board dust on an inlet and in a basin where it was being temporarily stored. City of Westminster issued enforcement letter with corrective measures requiring both inlet grates and basins to be professionally cleaned. General Business Good Housekeeping BMP guidance brochure was provided.	Illicit Discharge Eliminated Case Closed: 10/03/2022 LU: Commercial	Market Street Westminster, MD (County)

2023 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-22-0019	CCBRM EISD Staff reported fat/grease receptacle spillage onto dumpster pad pavement and onto driveway along curb and gutter. Reported:11/09/2022	EISD staff contacted property management company followed by enforcement notification letter requiring corrective measures for fats/grease receptacle clean up or replacement, increased recycling company pickup schedule, review and employ food industry Good Housekeeping/BMPs guidance provided, monitoring of grease level by restaurants, and proper maintenance. Multiple follow up inspections until corrective measure completed, followed by on-going monitoring to ensure compliance.	Potential Illicit Discharge Eliminated Case Closed: 06/01/2023	Exchange Drive, Eldersburg, MD (County)
PD-22-0020	Town of Mount Airy Municipal Staff reported grading without a permit, separate storage yard area with oil/fluids on ground and multiple storage containers, and commercial vehicle washing onto ground. Reported: 11/18/2022	County NPDES Compliance Specialist coordinated with CC EISD for grading and IDDE initial inspection confirming all aspects of the complaint (grading and excavation without permit, extensive oil spillage on storage yard with large unlabeled storage totes holding dark fluid, and pump truck actively being washed on site). County notified MDE Compliance requesting coordination for site investigation w/ MDE, County, and Municipal staff, which was completed on 12/06/2022. MDE Compliance staff issued detailed investigation report citing violations and required corrective actions by property/business owner for oil/spillage and storage, and commercial vehicle washing, and to comply with Carroll County Erosion and Sediment Control and Building permits and Inspections. The Town of Mount Airy also issued MS4 enforcement notification letter citing violations of local codes with corrective actions to be met per MDE as well as planning/zoning requirements regarding unapproved plans and permits for construction.	Illicit Discharge Eliminated Case Closed: 01/13/2023 LU: Commercial	Rising Ridge, Mount Airy, MD Frederick County (MS4 Phase II) (Municipality)
PD-22-0021	Citizen reported via Carroll County's "See-Click-Report" program a van leaking fluid parked on public street. Reported: 12/16/2022	County NPDES Compliance Specialist and Town of Sykesville's Public Works Director investigated the complaint. No automotive fluids observed on pavement under vehicle, before or behind. Very small rust deposit from dripping rusted edge from precipitation and may have given impression of auto-fluid leak. Local law enforcement ran tags confirming the vehicle is properly registered and parked per municipal code.	Non-Illicit Discharge Case Closed: 12/21/2022	Willow Bottom Road, Sykesville, MD (Municipality)

2023 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0001	<p>County DPW Bureau Chief reported hydraulic line failure on one of their small truck salt spreader unit during a winter event application on County property driveway and parking lot.</p> <p>Reported: 01/23/2023</p>	<p>County NPDES Compliance Specialist and Chief of CC Bureau of Facilities investigated and reviewed with maintenance staff. The pressurized hydraulic line leak occurred only when the salting equipping was engaged leaving a light sheen of hydraulic fluid on wet pavement driveway and parking areas. Leak was not visible and discovered at end of salting operation. CC Facilities Bureau Chief contacted the MDE Oil Spill Hotline who provided guidance appropriate for the situation using speedy dry, clay litter, and absorbent socks and pads placed for inlet protection should precipitation restart. Materials bagged and sealed for disposal per MDE guidance. MDE Oil Spill Report Form submitted. Storm drain system discharge outfall discharge checked downstream, and SWM facility showed no evidence of oil sheen.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 1/25/2023</p> <p>LU: Institutional</p>	<p>South Center Street, Westminster, MD (Municipality)</p>
PD-23-0002	<p>Retail store assistant manager/citizen reported diesel fuel spill/leak from tractor trailer that hit a post and ruptured fuel tank hitting a bollard while traveling around service driveway and load dock area to 911. Hazmat and City of Westminster Police responded w/Westminster DPW reporting to County CCBRM NPDES Compliance Specialist.</p> <p>Reported: 02/22/2023</p>	<p>Hazmat responded with inlet protection booms and dry absorbent on pavement and at loading dock upon arrival. Hazmat contacted MDE emergency Oil Control Hotline. Retail store assistant manager contacted MDE for follow-instructions and contacted Safe Harbor environmental clean-up company to perform clean-up on pavement and in storm drain system, which fuel went into, as well as the wet stormwater management facility and outfall. No flow was discharging from the outfall. Safe Harbor contacted CCBRM after initial clean-up while still on-site. Clean-up also included absorbent booms on SWM facility forebay and pond. Flushing was completed on storm drain pipes, with residual placed in 55-gallon drums. Contractor estimated clean up efforts to take most of a week since the grass access road to SWM facility was frozen and wet where no mechanized vehicles could access. CCBRM in contact with MDE Compliance, inspected site and met with contractor until clean-up completed, requiring the plunge pool to be addressed with absorbent pads until clear. No dead aquatic life observed. Amphibians active and present in forebay with ducks active on pond, etc.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 3/16/2023</p> <p>LU: Commercial</p>	<p>Market Street, Westminster, MD (Municipality)</p>

2023 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0003	<p>A citizen (tenant) reported on-going unresolved private septic discharge overflow at adjacent rental cleanout. Discharge flows over driveway, downhill, toward public roadside ditch toward first order stream. CC Health Department was also contacted.</p> <p>Reported: 04/05/23</p>	<p>County NPDES Compliance staff performed site investigation confirming recent sanitary sewer overflow from private system. CCHD was contacted who confirmed their on-going and recent inspections noting repair delay due to need for a private resolution. CCHD able to coordinate with property owner/landlord to make the requisite corrective measures to clear system, pump out and make any other necessary repairs by licensed plumber. Corrective measures completed and CCHD verified.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 05/31/23</p> <p>LU: Residential</p>	<p>Gorsuch Road, Westminster, MD (County)</p>
PD-23-0004	<p>Town of Sykesville Dept of Public Works Director reported a sanitary sewer discharge from a bypass pump cap failure during sanitary sewer system improvement activity by a contractor for CC Bureau of Utilities. Utilities supervisor notified Sykesville DPW. The discharge sheet-flowed onto Oklahoma Avenue toward the municipal storm drain inlet.</p> <p>Reported: 04/19/2023</p>	<p>Contractor and CC Bureau of Utilities repaired the pump limiting the discharge to approximately 50 gallons. Guidance provided to contain flow on street by staff and contractor if possible. Sykesville DPW staff confirmed no flow reached inlet basin. NPDES Compliance Specialist recommended the CC Bureau of Utilities to use containment BMP practices at the hose connections, etc. for future preventive measures.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 04/19/2023</p> <p>LU: Institutional</p>	<p>Oklahoma Avenue, Sykesville, MD (Municipal)</p>
PD-23-0005	<p>Citizen reported neighbor pressure washing automotive pieces, engines, etc. in driveway discharging to public street and entering storm drain inlet. Staining on driveway.</p> <p>Reported: 4/19/23</p>	<p>County NPDES Compliance Specialist coordinated site investigation with City of Westminster DPW staff. No staining of driveway was observed. Parked SUV on street near driveway access w/ temporary tags with dry automotive stains above, under and below parked vehicle. No evidence of dumping into the inlet. The grate and inlet basin was clean with no staining or residual material or odor. Downgrade storm drain inlet manhole, inflow pipe discharge point in stormwater facility showed no evidence of any pollutant discharge. SWM facility discharge pipe outfall at stream was clear. City code enforcement officer reviewed complaint with the property owner and made aware of local ordinance and regulations pertaining to residential vs commercial automotive washing providing Homeowner Stormwater Pollution Prevention BMPs for guidance.</p>	<p>Potential Illicit Discharge</p> <p>Case Closed: 4/26/2023</p>	<p>Innisbrook Lane, Westminster, MD (Municipal)</p>

2023 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0006	<p>CC DPW Roads crew reported strong septic odor present in the area while working on a repair at road cross culvert end wall. No flows from roadside ditch. No signs of roadside spillage were noted.</p> <p>Reported: 5/01/23</p>	<p>County NPDES Compliance Specialist checked area including nearby SWM facility. Area monitored with no further odor detected.</p>	<p>Non-Illicit Discharge</p> <p>Case Closed: 05/3/23</p>	<p>Avondale and Medford Road Intersection, Westminster, MD (County)</p>
PD-23-0007	<p>Town of Sykesville DPW Director reported an active white wastewater discharge by contractor from private driveway onto Springfield Avenue and Main Street (also MD 851)</p> <p>Reported: 05/15/23</p>	<p>Sykesville DPW Director immediately stopped homeowner's contractor confirming white latex paint cleaning of paint equipment, brushes, etc. The wastewater runoff did not reach storm drain inlets that had inlet protection at the time due to road utility work in the area. No solvents were used. The contractor was notified of violation on-site by the DPW Director with property owner notification follow-up by Town Manager. Contractor instructed to take immediate corrective clean-up and BMP measures. MDSHA notified.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 05/22/2023</p> <p>LU: Residential</p>	<p>Springfield Ave. Sykesville, MD (Municipality)</p>
PD-23-0008	<p>County DPW Bureau of Utilities Superintendent reported a County sanitary sewer discharge from a working sub-contractor bypass equipment and clearing line at Springfield Avenue. (Also MD 851)</p> <p>Reported: 05/25/23</p>	<p>Contractor Equipment failure corrected equipment. Estimated 200 gallons sheet-flow onto street with it did not reach nearest inlet 400' downgrade that had inlet protection in place for utility work. DPW Utilities required contractor to report to MDE. MDHA notified.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 05/31/23</p> <p>LU: Institutional</p>	<p>Springfield Ave. Sykesville, MD (Municipality)</p>
PD-23-0009	<p>CC Roads Superintendent observed and reported gray water discharge from old plumbing flange located in exposed old concrete floor where old business building had been razed decades ago. Intermittent discharge flowing overland to nearby stream.</p> <p>Reported: 06/13/23</p>	<p>NPDES Compliance staff notified County Bureau of Utilities and City of Westminster Utilities staff and crews met on-site to coordinate repair. City of Westminster Utilities located and cleared blockage in sanitary sewer line and coordinated with County Bureau of Utilities to make permanent lateral line repair including removal of the old flange on County property. City of Westminster reported SSO to MDE and CCHD. CCHD performed site visit, inspected at stream and extensively downstream having the stream bank posted for notification to the public per state law, etc.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 06/15/23</p> <p>LU: Commercial</p>	<p>Gorsuch Road, Westminster, MD (Municipality)</p>

2023 NPDES MS4 Permit Annual Report



2022 NPDES MS4 Permit Annual Training *Stormwater Pollution Prevention Workshop* (Manager/Supervisory Level)

Carroll County and Incorporated Municipalities

Phase I Municipal Separate Storm Sewer System (MS4) Permit Co-Permittees,
Phase II Permittees, and 12-SW Industrial Stormwater General Permit Holders

Friday, October 14, 2022

Carroll County Public Safety Training Center – 50 Kate Wagner Road, Westminster, MD

AGENDA

9:00 – 9:15 am	Welcome and NPDES MS4 Permit Overview <ul style="list-style-type: none"> ▪ NPDES and MS4 Permit Overview ▪ Proposed 5th Generation MS4 Permit Update 	Christopher Heyn Director Dept. Land & Resource Management Carroll County Government
9:15 – 9:50 am	Key Changes in Next Generation MS4 Permit and Good Housekeeping Best Management Practices (BMPs) <ul style="list-style-type: none"> ▪ Property Management & Maintenance: Good Housekeeping Plans ▪ Litter, Public Education ▪ RAINcheck: Good Housekeeping BMPs (Video Pt. 1) 	Claire Hirt NPDES Compliance Specialist Bureau of Resource Management Carroll County Government
Break (10)		
10:00 – 10:25 am	General Permit for Discharges of Stormwater Associated with Industrial Activity (12SW) <ul style="list-style-type: none"> ▪ MS4 Permit/Property Management and Maintenance Requirement ▪ 12SW Permit Overview and 20SW Update ▪ RAINcheck: Good Housekeeping BMPs (Video Pt. 2) ▪ Q&A with MDE 	Glenn Edwards NPDES Compliance Specialist Bureau of Resource Management Carroll County Government Kevin Bull MDE Compliance Inspector Water and Science Administration MD Dept. of the Environment
10:25 – 10:50 am	Winter Salt Management (Challenges & Solutions) <ul style="list-style-type: none"> ▪ Protecting Water Quality...What Everyone Can Do ▪ Carroll County Roads Operations Salt Management Plan Overview ▪ Carroll County Winter Weather Coordination Meeting 	Glenn Edwards NPDES Compliance Specialist Doug Brown Deputy Director Department of Public Works Carroll County Government
Break (10)		
11:00 – 11:25 am	Staff Reported Illicit Discharge Investigation Procedures <ul style="list-style-type: none"> ▪ IDDE: A Grate Concern (Video) ▪ Recognizing and Reporting Illicit Discharges and Connections ▪ IDDE Investigations (Examples) 	Claire Hirt & Glenn Edwards NPDES Compliance Specialist Bureau of Resource Management Carroll County Government
11:25 – 11:30 am	Employee Training Resources & Wrap Up <ul style="list-style-type: none"> ▪ Training Requirements, Resources, and Q&A 	Christopher Heyn Director Dept. Land & Resource Management Carroll County Government

Notes:

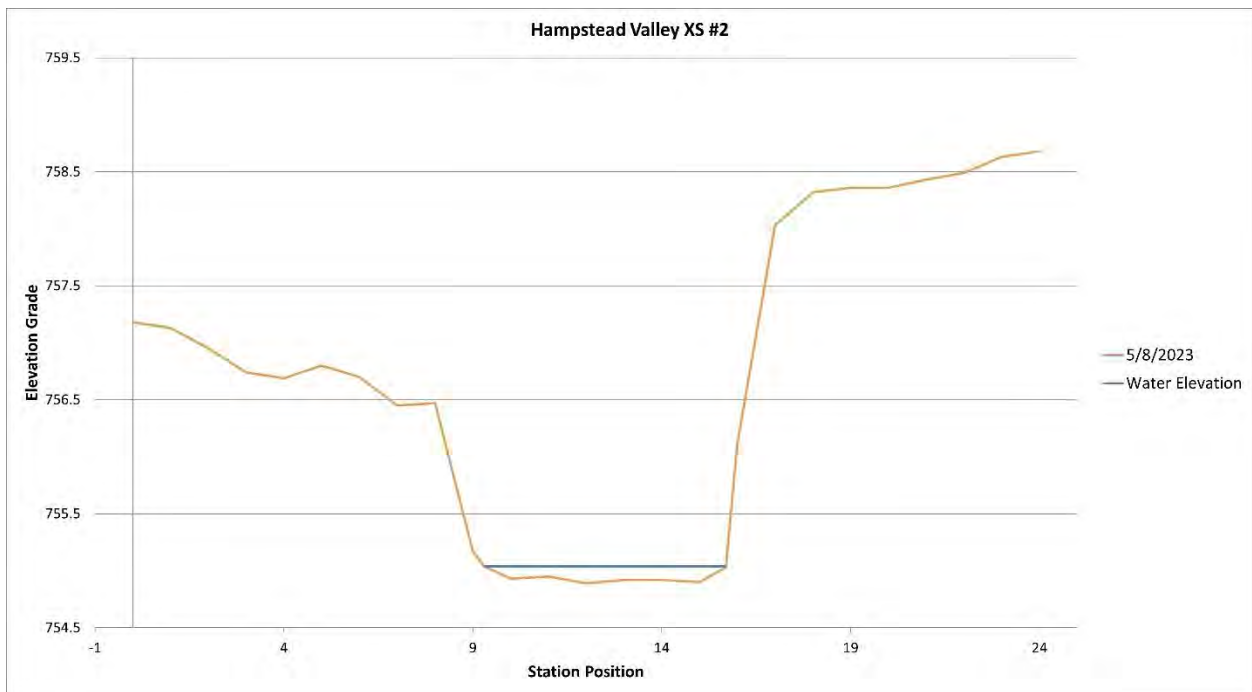
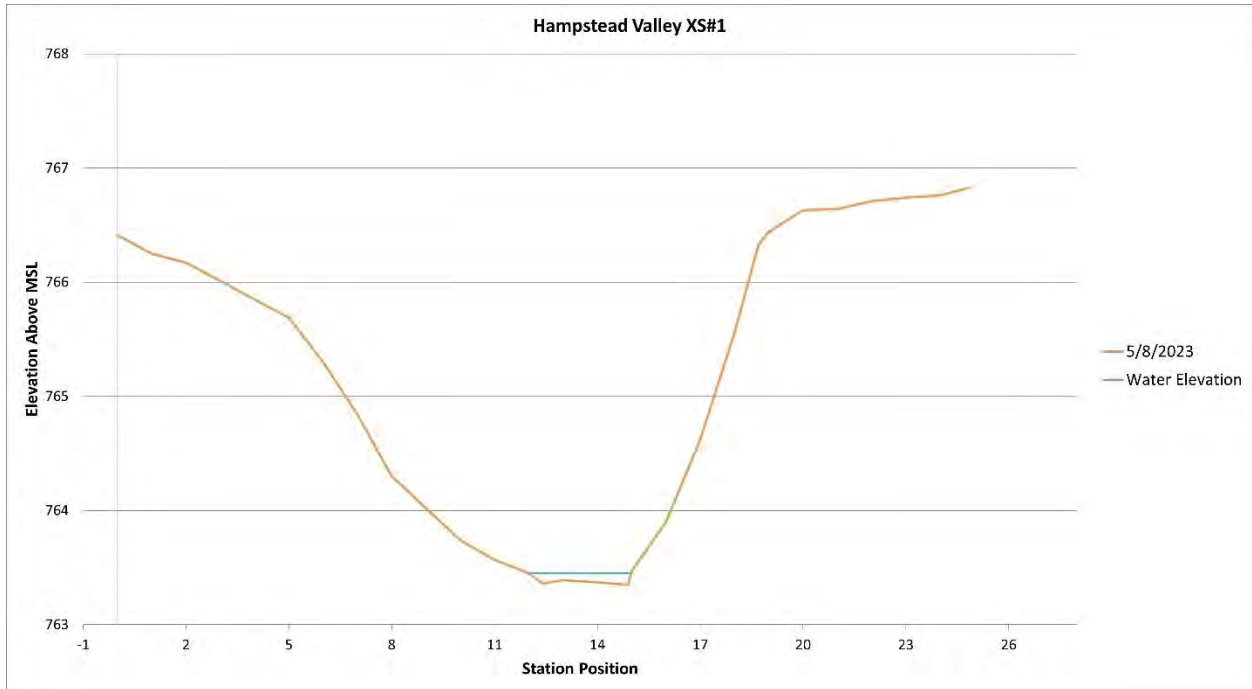
Appendix D

Monumented Cross Sections

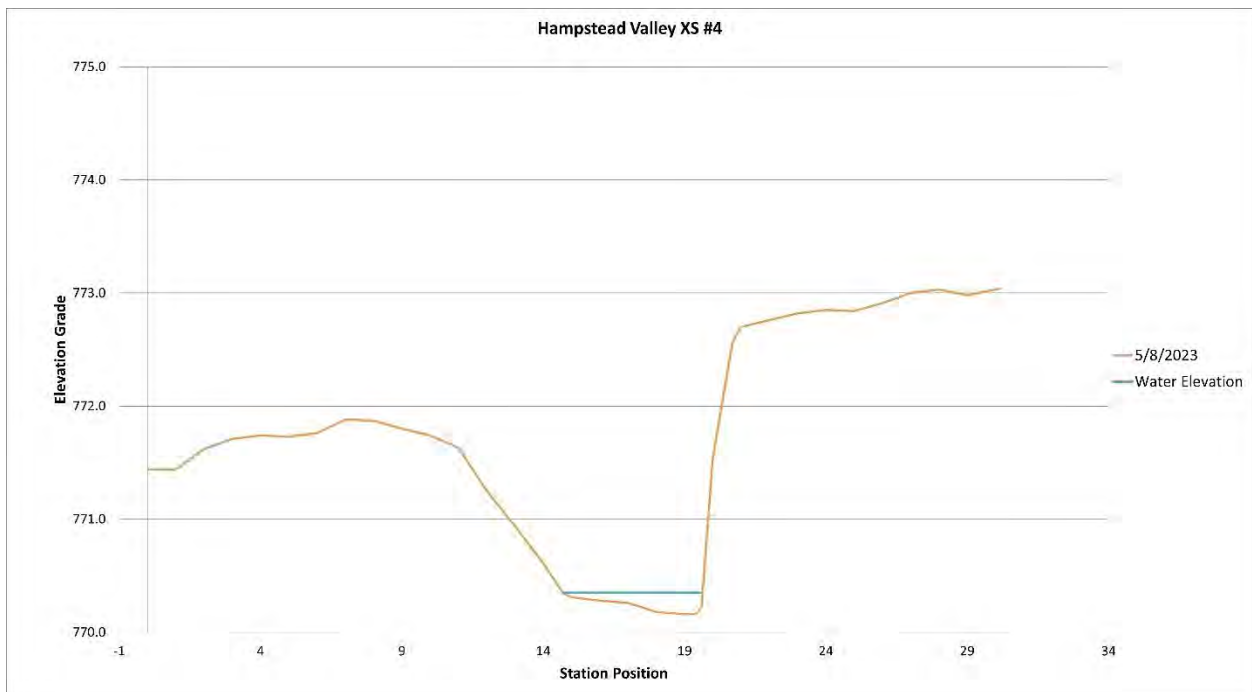
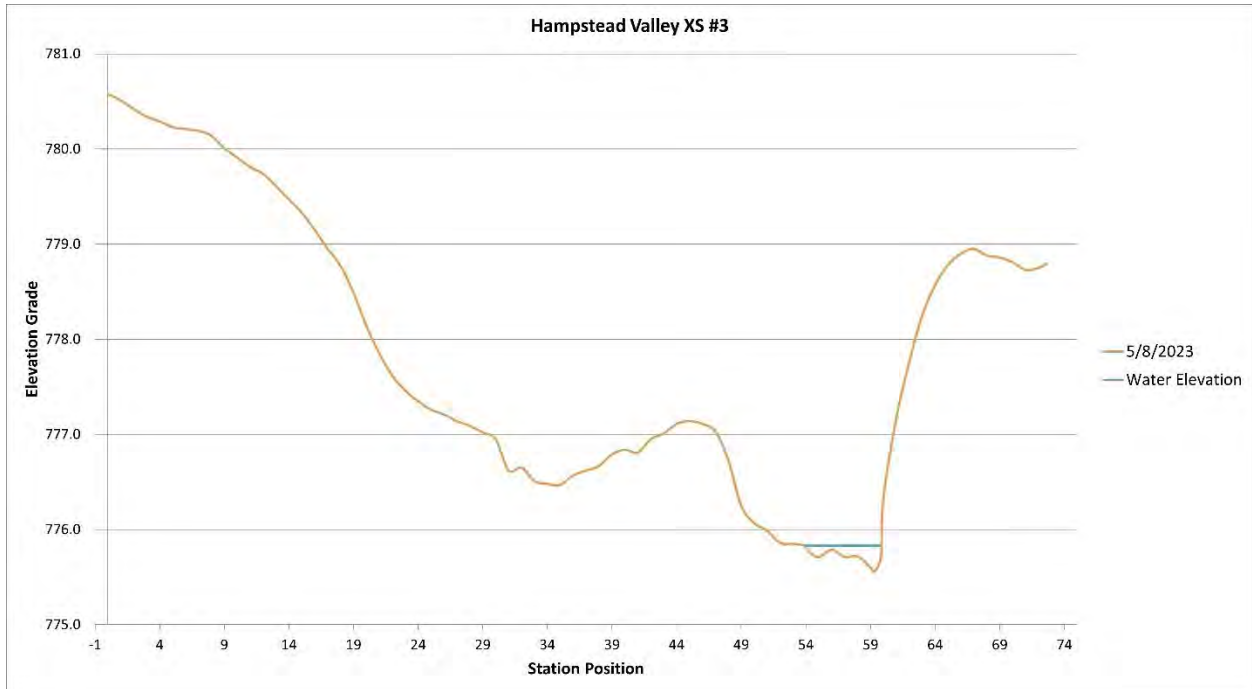
- **Physical Stream Assessment, Sections 1-9 (graphs)**

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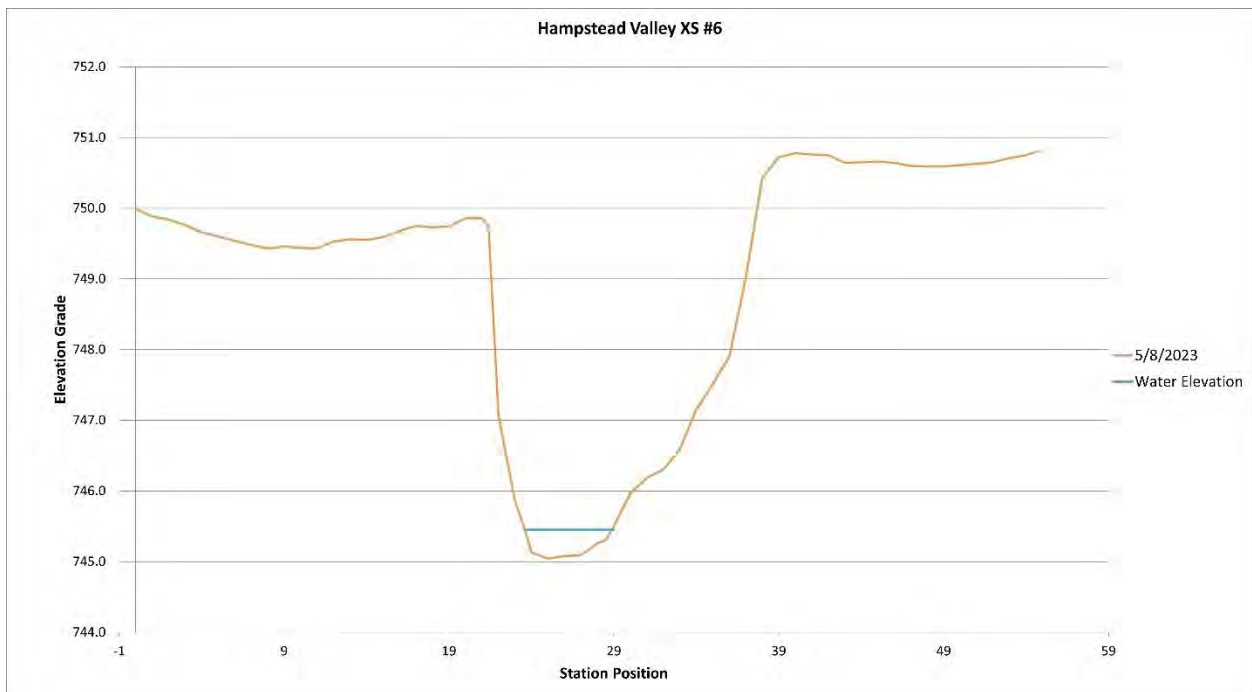
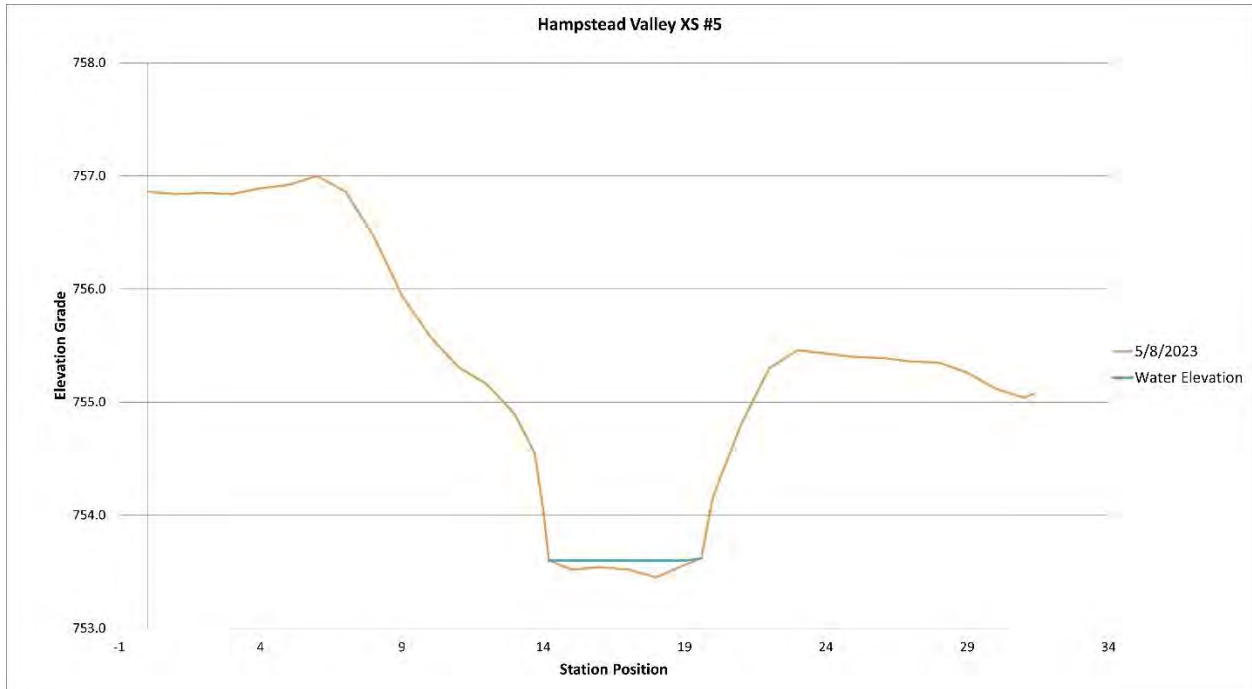
2023 NPDES MS4 Permit Annual Report



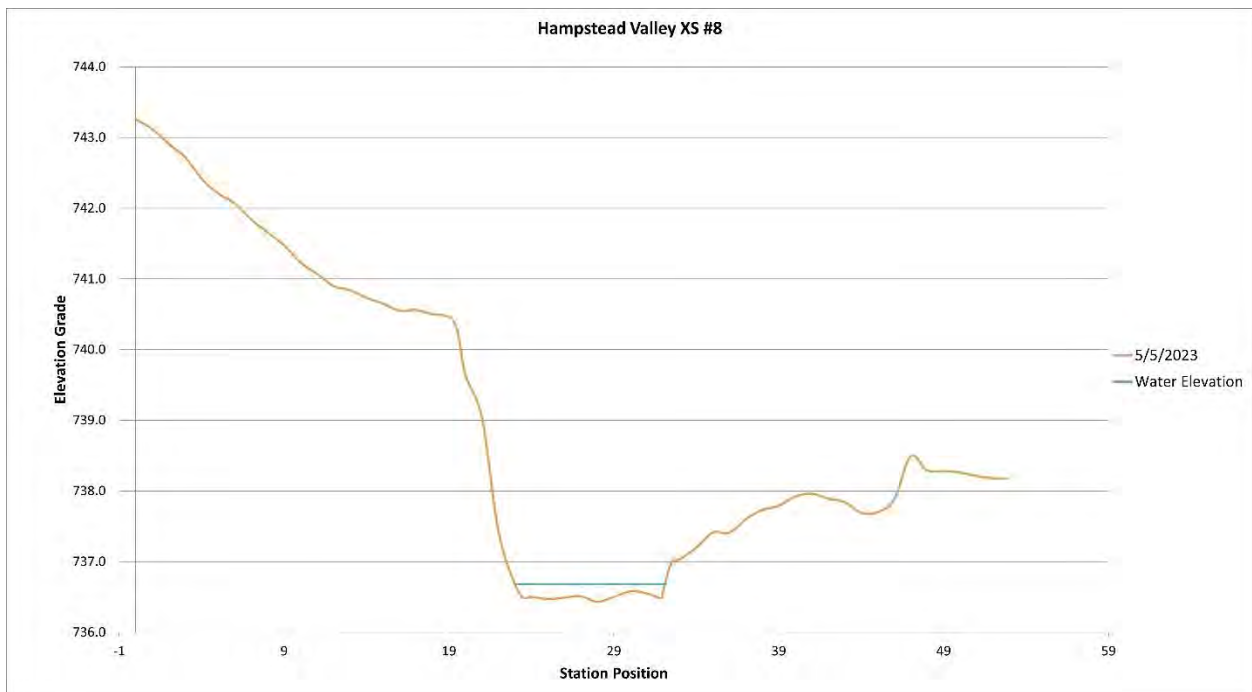
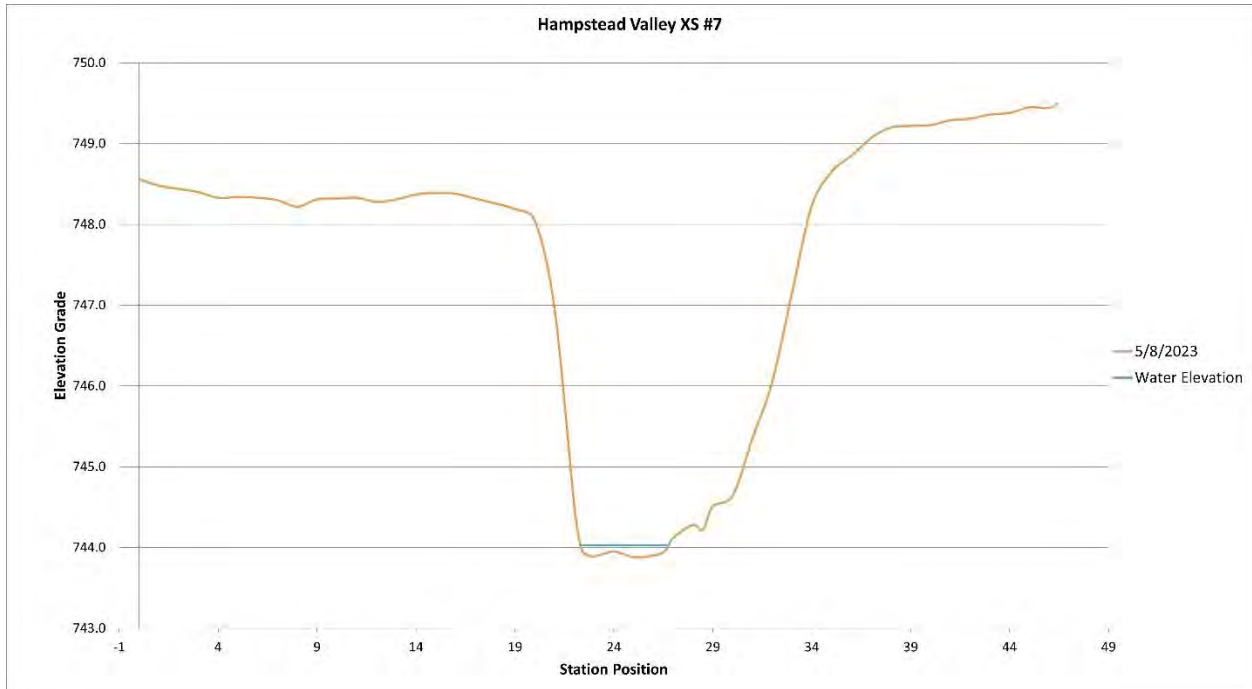
2023 NPDES MS4 Permit Annual Report



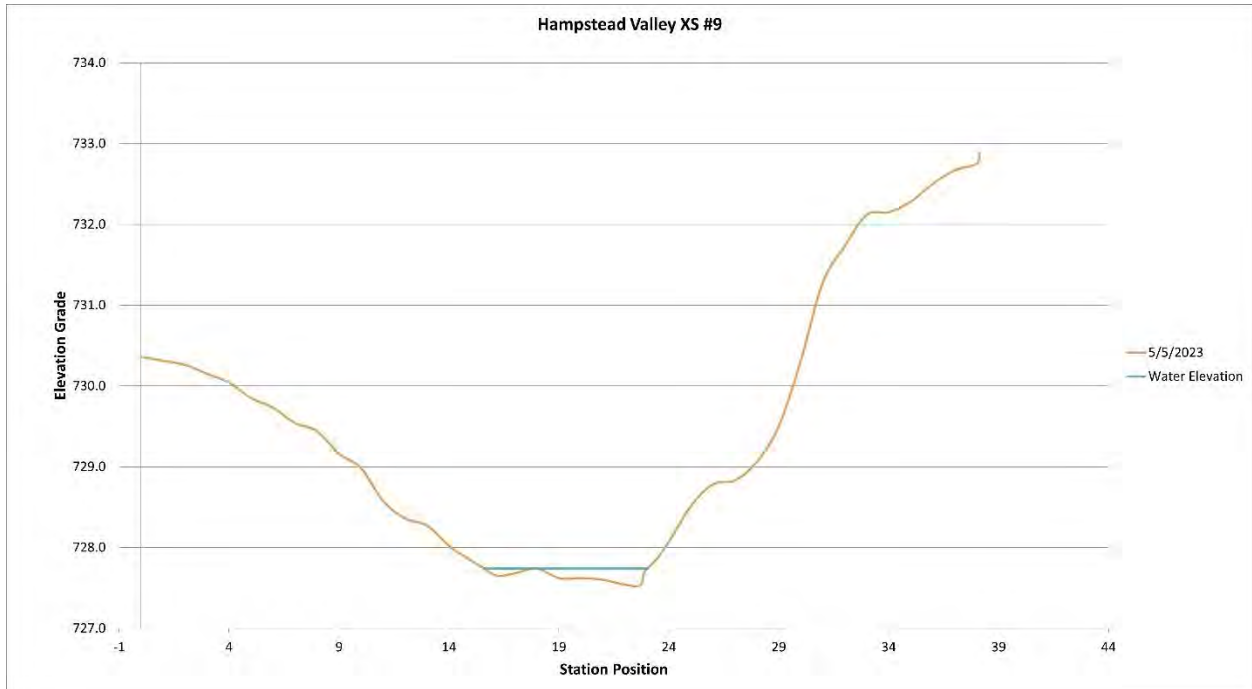
2023 NPDES MS4 Permit Annual Report



2023 NPDES MS4 Permit Annual Report



2023 NPDES MS4 Permit Annual Report



Appendix E

Macroinvertebrate Taxonomic Identifications Results

2023 NPDES MS4 Permit Annual Report

2023 NPDES MS4 Permit Annual Report

Macroinvertebrate Taxonomic Identification Results

Order	Family	Taxon	# Individuals
Diptera	<i>Ceratopogonidae</i>	<i>Dasyhelea</i>	2
Diptera	<i>Chironomidae</i>	<i>Conchapelopia</i>	1
Diptera	<i>Chironomidae</i>	<i>Corynoneura</i>	2
Diptera	<i>Chironomidae</i>	<i>Cricotopus</i>	2
Diptera	<i>Chironomidae</i>	<i>Diamesa</i>	21
Diptera	<i>Chironomidae</i>	<i>Diamesa</i>	1
Diptera	<i>Chironomidae</i>	<i>Limnophyes</i>	1
Diptera	<i>Chironomidae</i>	<i>Orthocladius</i>	36
Diptera	<i>Chironomidae</i>	<i>Orthocladius</i>	2
Diptera	<i>Chironomidae</i>	<i>Parametricnemus</i>	3
Diptera	<i>Chironomidae</i>	<i>Parametricnemus</i>	1
Diptera	<i>Chironomidae</i>	<i>Paratanytarsus</i>	1
Diptera	<i>Chironomidae</i>	<i>Rheotanytarsus</i>	10
Diptera	<i>Chironomidae</i>	<i>Tanytarsus</i>	2
Diptera	<i>Chironomidae</i>	<i>Thienemanniella</i>	2
Diptera	<i>Chironomidae</i>	<i>Tvetenia</i>	4
Diptera	<i>Empididae</i>	<i>Clinocera</i>	1
Diptera	<i>Tipulidae</i>	<i>Antocha</i>	2
Ephemeroptera	<i>Baetidae</i>	<i>Baetis</i>	4
Odonata	<i>Calopterygidae</i>	<i>Calopteryx</i>	1
Trichoptera	<i>Glossosomatidae</i>		5
Trichoptera	<i>Glossosomatidae</i>	<i>Glossosoma</i>	3
Trichoptera	<i>Hydropsychidae</i>	<i>Cheumatopsyche</i>	10
Trichoptera	<i>Hydropsychidae</i>	<i>Hydropsyche</i>	4
Trichoptera	<i>Philopotamidae</i>	<i>Chimarra</i>	4
Total Individuals			134
Total Taxa			24

2023 NPDES MS4 Permit Annual Report

Appendix F

Outfall Prioritization Plan and Schedule

2023 NPDES MS4 Permit Annual Report

Appendix F

Outfall Prioritization Plan and Schedule

Introduction

The fifth-generation Carroll County MS4 Permit, issued on December 30, 2022, requires permittees to review all County outfalls to prioritize field screening efforts in areas with the greatest potential for polluted discharges. The following summarizes the County's efforts to prioritize outfall screenings for the duration of the permit term.

Prioritization Process

As co-permittees on the MS4 permit, Carroll County and the eight incorporated municipalities strive to create a cohesive and practicable approach to the IDDE program. Zoning and land use are one of the best indicators of the potential for illicit discharges, but our interjurisdictional nature poses a challenge, as there is not one cohesive zoning layer with consistent categorization. In order to simplify the process of designating outfalls for inclusion in the new prioritization process, we sought to identify a polygon mask that would be both a comprehensive filter on high priority sites and a relatively stationary boundary that would not need to be rerun or regenerated as new outfalls are added to the database.

The County has determined that a combination of the Growth Area Boundary and Rural Villages Boundary will be used to identify MS4 outfalls for inclusion in the prioritized outfall screening program for the duration of the current permit. These areas include the most concentrated areas of growth, including industrial and commercial developments, and present the highest probability of illicit discharges to the MS4. By concentrating screening efforts in these targeted areas, the County is aiming to improve detection of pollution events.

The Growth Area and Rural Village boundaries (GA/RV) comprise just over 50,000 acres, or about 17% of the total land area of the County and incorporated municipalities (**Figure 17**). Industrial and commercial zoning is heavily concentrated in the GA/RV. Of the 9,300 total acres of these high pollutant risk areas across the County (i.e. industrially and commercially zoned), the vast majority (85%) falls within the GA/RV boundary. Likewise, of the 281,000 total acres of low pollutant risk areas across the County (all other zoning types), only 15% falls within the GA/RV boundary (**Figures 18 and 19**).

Risk of illicit discharges exists within residential zones as well, though is more dependent on the age and density of the homes and infrastructure than simply the zoning designation. Of the nearly 35,000 total residentially-zoned acres in the County, 59% falls within the GA/RV boundary.

Thus, the GA/RV boundary presents a simple way of targeting the outfalls with the highest likelihood of illicit discharges, focusing screening efforts where they are most needed, and reducing time and resources spent at outfalls with the lowest risk of pollutant discharges.

Growth Area and Rural Villages *Carroll County, MD*

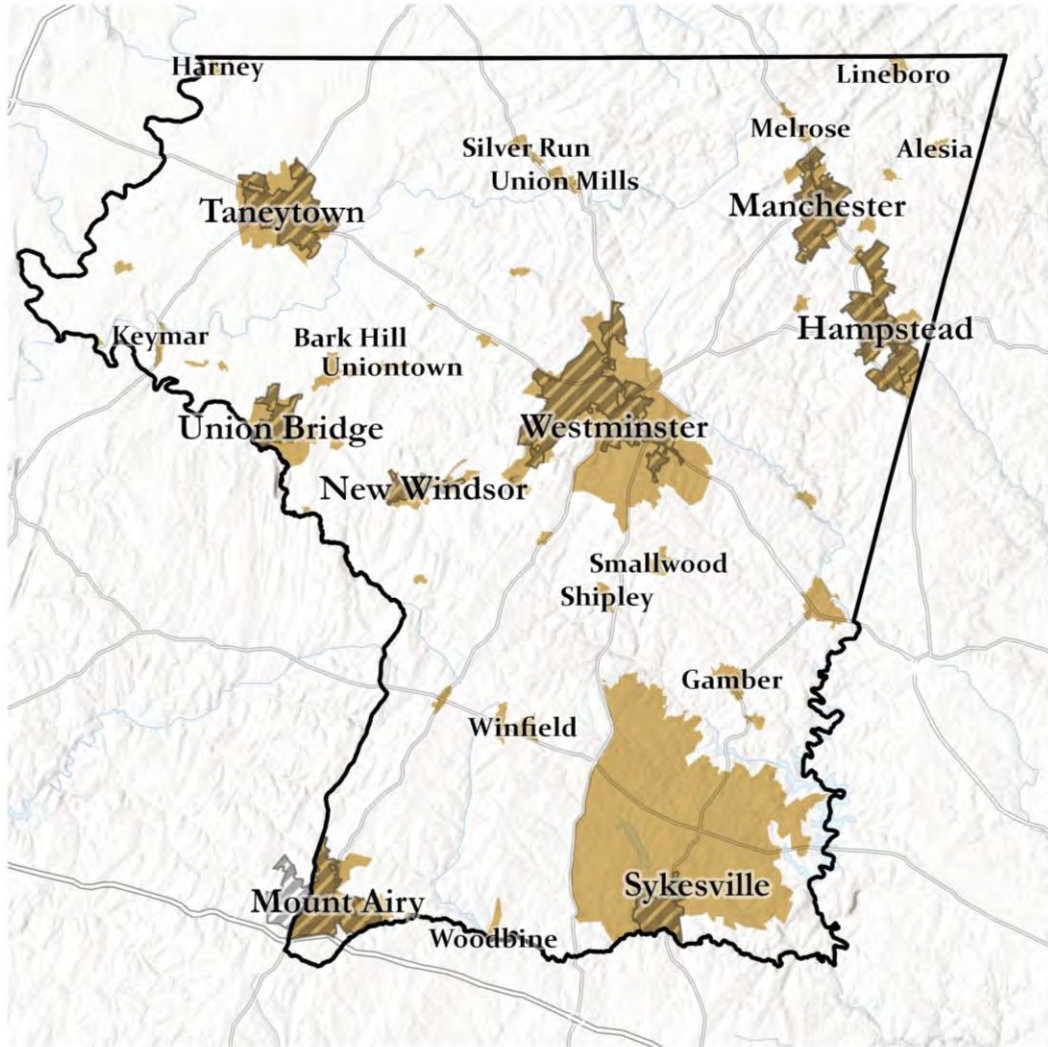


Figure 17. Growth Area and Rural Villages (GA/RV) boundary in Carroll County, MD.

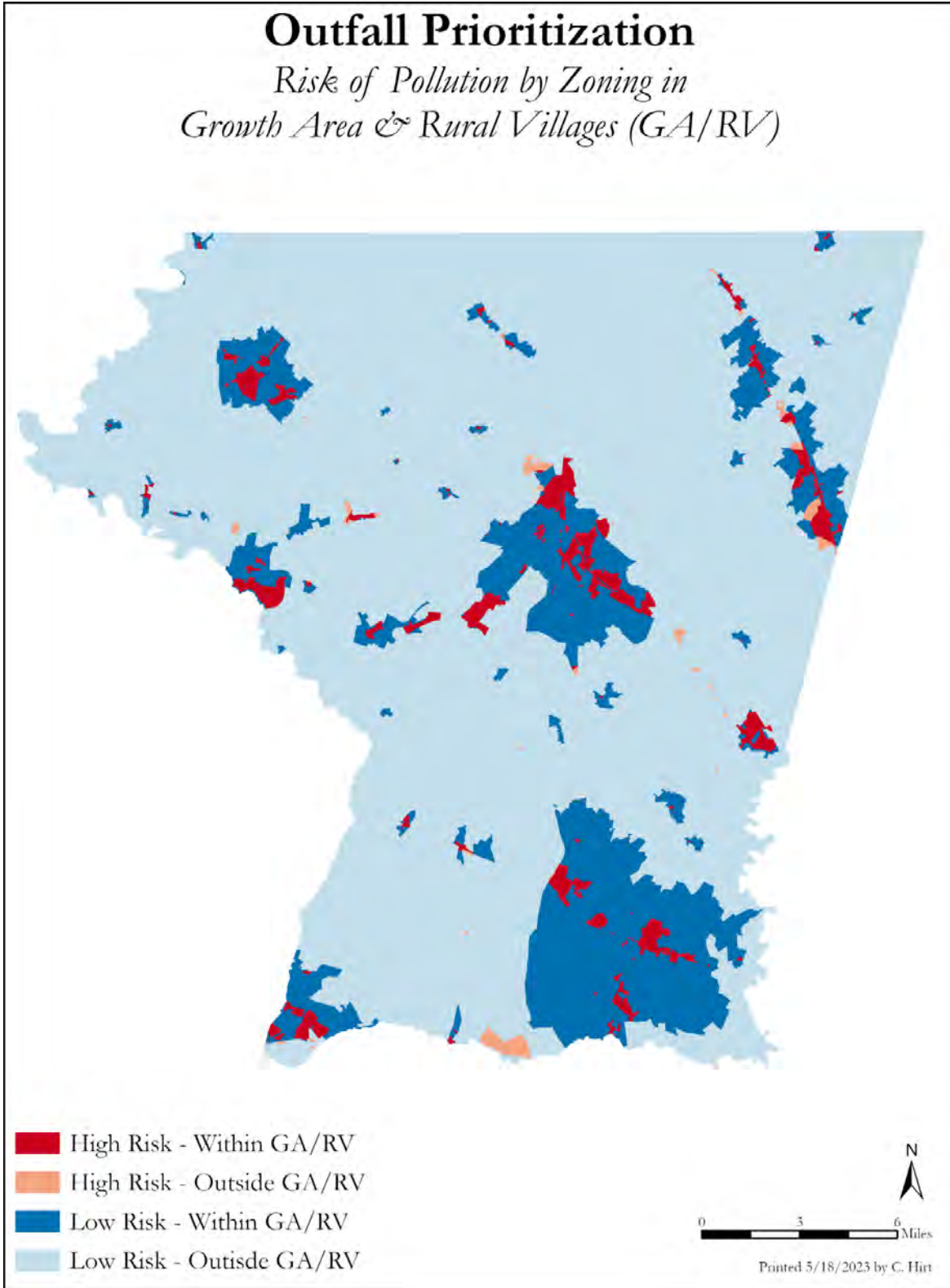


Figure 18. Map of relative pollution risk of areas across Carroll County and the eight co-permittee municipalities, based on zoning types. Dark red and dark blue areas are within the GA/RV boundary. Light red and light blue areas are outside of the GA/RV boundary.

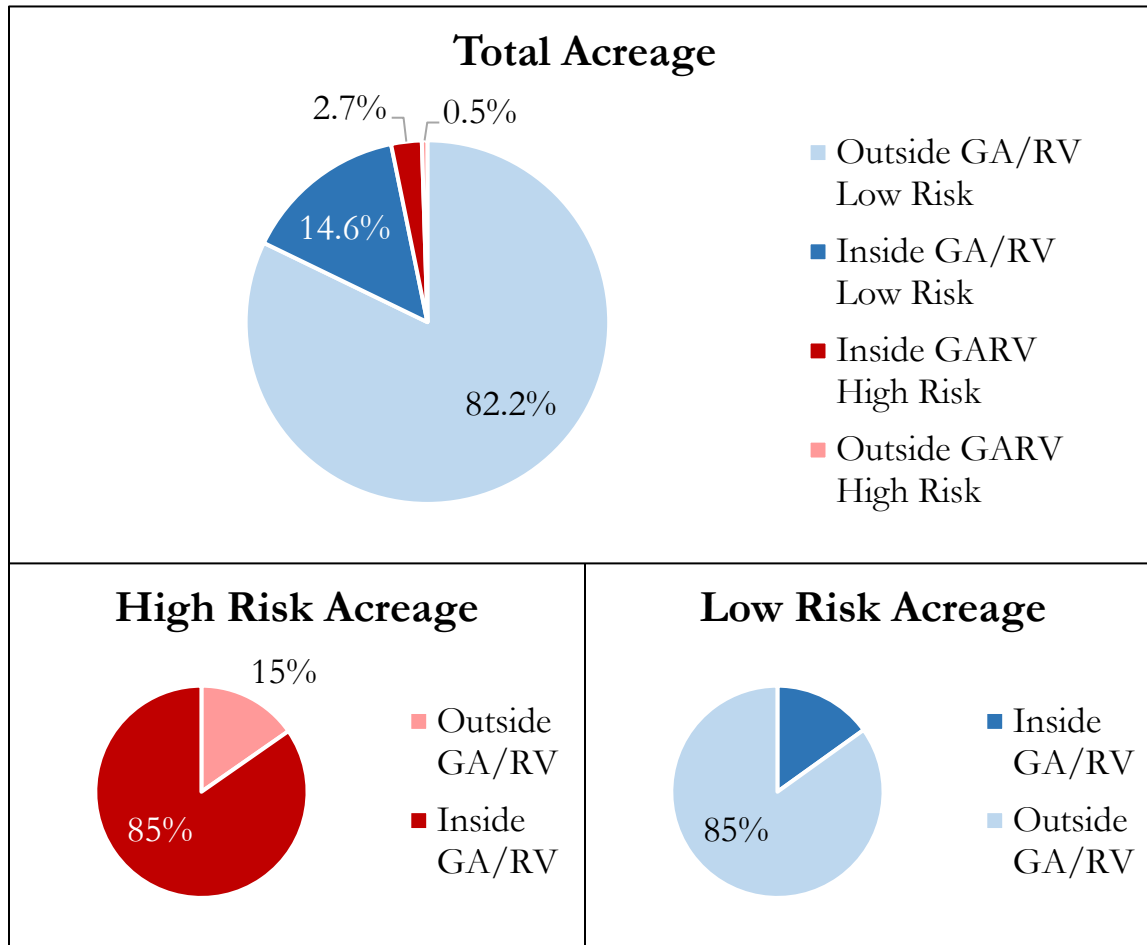


Figure 19. Distribution of areas with high and low risk of illicit discharge in relation to the GA/RV boundary, based on zoning classifications. The majority of high-risk areas are captured within the GA/RV, while low-risk areas largely fall outside of the GA/RV, which provides a streamlined and targeted approach to outfall prioritization.

Outfall Selection

Carroll County is required to screen at least 100 outfalls each year for dry-weather discharges. To provide a buffer in that requirement, we sought to identify 101 outfalls for each of the five years the permit covers, totaling 505 outfalls. NPDES outfalls within the GA/RV totaled 766; from that list, we selected outfalls that met the following conditions:

- All major NPDES outfalls (i.e. $\geq 36''$ equivalent diameter in non-industrial land use areas or $\geq 12''$ equivalent diameter in industrial land use areas)
- All other outfalls with an equivalent pipe diameter $\geq 18''$
- Any outfalls where the outfall pipe size was unknown or incomplete

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NDPES outfalls that were located at sites permitted by MDE with an industrial stormwater permit (i.e. 20SW sites) were excluded from the selection, as outfall monitoring is conducted through that program. This subset selection yielded 497 outfalls. Four additional outfalls were selected from the remaining set of outfalls with an equivalent pipe diameter ≥ 16 ", bringing the total to the final 505 outfall list.

Screening Schedule

Through the prioritization process, outfalls within the GA/RV were identified within each of the eight municipalities, the rural village areas, and the remaining non-municipal Growth Area boundary. The County sought to divide screenings for each of these categories equally across the five years in order to provide screening efforts across all parts of the County and among the various watersheds within each year. **Table 31** below summarizes the number of outfalls in each location category that will be screened in each year of the permit. **Table 32** provides a schedule of the 101 outfalls that will be screened in each year of the permit.

Table 31
Summary of Outfall Screening Locations for Each Permit Year

Outfall Location	FY24	FY25	FY26	FY27	FY28	Total Outfalls
Hampstead	9	9	13	7	6	44
Manchester	7	5	6	4	4	26
New Windsor	3	2	2	2	2	11
Sykesville	5	5	4	4	4	22
Taneytown	7	8	7	7	7	36
Union Bridge	1	1	1	0	0	3
Mount Airy	2	4	7	3	2	18
Westminster	14	14	14	14	14	70
Rural Village	6	3	3	2	2	16
Other Growth Area	47	50	44	58	60	259
Total Outfalls	101	101	101	101	101	505

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Table 32
Outfall Screening Schedule for Each Permit Year, Listed by MDE Outfall ID.

	FY2024	FY2025	FY2026	FY2027	FY2028
1	CR15OUT000003	CR15OUT000011	CR15OUT000002	CR15OUT000001	CR15OUT000026
2	CR15OUT000018	CR15OUT000012	CR15OUT000017	CR15OUT000097	CR15OUT000027
3	CR15OUT000019	CR15OUT000024	CR15OUT000030	CR15OUT000142	CR15OUT000031
4	CR15OUT000034	CR15OUT000025	CR15OUT000037	CR15OUT000143	CR15OUT000033
5	CR15OUT000044	CR15OUT000028	CR15OUT000045	CR15OUT000144	CR15OUT000136
6	CR15OUT000047	CR15OUT000041	CR15OUT000046	CR15OUT000158	CR15OUT000140
7	CR15OUT000050	CR15OUT000055	CR15OUT000051	CR15OUT000161	CR15OUT000141
8	CR15OUT000062	CR15OUT000056	CR15OUT000052	CR15OUT000165	CR15OUT000146
9	CR15OUT000065	CR15OUT000059	CR15OUT000058	CR15OUT000169	CR15OUT000147
10	CR15OUT000074	CR15OUT000064	CR15OUT000060	CR15OUT000170	CR15OUT000150
11	CR15OUT000077	CR15OUT000068	CR15OUT000061	CR15OUT000171	CR15OUT000153
12	CR15OUT000083	CR15OUT000072	CR15OUT000063	CR15OUT000191	CR15OUT000154
13	CR15OUT000089	CR15OUT000075	CR15OUT000069	CR15OUT000192	CR15OUT000155
14	CR15OUT000092	CR15OUT000076	CR15OUT000078	CR15OUT000216	CR15OUT000160
15	CR15OUT000093	CR15OUT000084	CR15OUT000081	CR15OUT000229	CR15OUT000168
16	CR15OUT000101	CR15OUT000088	CR15OUT000082	CR15OUT000230	CR15OUT000175
17	CR15OUT000102	CR15OUT000090	CR15OUT000103	CR15OUT000233	CR15OUT000176
18	CR15OUT000107	CR15OUT000095	CR15OUT000108	CR15OUT000245	CR15OUT000177
19	CR15OUT000123	CR15OUT000104	CR15OUT000109	CR15OUT000251	CR15OUT000194
20	CR15OUT000125	CR15OUT000106	CR15OUT000110	CR15OUT000270	CR15OUT000196
21	CR15OUT000132	CR15OUT000114	CR15OUT000112	CR15OUT000278	CR15OUT000206
22	CR15OUT000166	CR15OUT000122	CR15OUT000113	CR15OUT000286	CR15OUT000225
23	CR15OUT000179	CR15OUT000148	CR15OUT000117	CR15OUT000310	CR15OUT000226
24	CR15OUT000180	CR15OUT000149	CR15OUT000121	CR15OUT000317	CR15OUT000227
25	CR15OUT000183	CR15OUT000159	CR15OUT000129	CR15OUT000337	CR15OUT000232
26	CR15OUT000193	CR15OUT000162	CR15OUT000135	CR15OUT000345	CR15OUT000238
27	CR15OUT000199	CR15OUT000173	CR15OUT000156	CR15OUT000347	CR15OUT000252
28	CR15OUT000203	CR15OUT000202	CR15OUT000178	CR21OUT000023	CR15OUT000257
29	CR15OUT000212	CR15OUT000204	CR15OUT000187	CR22OUT000018	CR15OUT000300
30	CR15OUT000222	CR15OUT000207	CR15OUT000190	CR23OUT000016	CR15OUT000303
31	CR15OUT000253	CR15OUT000208	CR15OUT000200	CR23OUT000017	CR15OUT000328
32	CR15OUT000259	CR15OUT000213	CR15OUT000201	CR23OUT000019	CR15OUT000330
33	CR15OUT000265	CR15OUT000214	CR15OUT000219	CR23OUT000021	CR15OUT000334
34	CR15OUT000274	CR15OUT000215	CR15OUT000248	CR23OUT000033	CR15OUT000338
35	CR15OUT000322	CR15OUT000217	CR15OUT000249	CR23OUT000036	CR15OUT000341
36	CR15OUT000335	CR15OUT000221	CR15OUT000256	CR23OUT000037	CR15OUT000342
37	CR19OUT000001	CR15OUT000224	CR15OUT000258	CR23OUT000044	CR20OUT000010
38	CR21OUT000002	CR15OUT000243	CR15OUT000262	CR23OUT000045	CR21OUT000019
39	CR21OUT000003	CR15OUT000250	CR15OUT000263	CR23OUT000047	CR21OUT000020

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	FY2024	FY2025	FY2026	FY2027	FY2028
40	CR21OUT000012	CR15OUT000254	CR15OUT000311	CR23OUT000052	CR21OUT000024
41	CR21OUT000015	CR15OUT000273	CR15OUT000316	CR23OUT000053	CR22OUT000020
42	CR21OUT000021	CR15OUT000289	CR15OUT000319	CR23OUT000054	CR23OUT000004
43	CR22OUT000017	CR15OUT000296	CR15OUT000329	CR23OUT000055	CR23OUT000015
44	CR23OUT000011	CR15OUT000297	CR19OUT000003	CR23OUT000069	CR23OUT000022
45	CR23OUT000027	CR15OUT000301	CR21OUT000001	CR23OUT000070	CR23OUT000035
46	CR23OUT000062	CR15OUT000318	CR21OUT000022	CR23OUT000071	CR23OUT000038
47	CR23OUT000063	CR15OUT000340	CR21OUT000025	CR23OUT000072	CR23OUT000039
48	CR23OUT000080	CR20OUT000003	CR22OUT000001	CR23OUT000085	CR23OUT000040
49	CR23OUT000082	CR21OUT000016	CR22OUT000019	CR23OUT000086	CR23OUT000041
50	CR23OUT000092	CR23OUT000013	CR23OUT000009	CR23OUT000087	CR23OUT000042
51	CR23OUT000093	CR23OUT000018	CR23OUT000010	CR23OUT000089	CR23OUT000043
52	CR23OUT000096	CR23OUT000023	CR23OUT000014	CR23OUT000095	CR23OUT000046
53	CR23OUT000099	CR23OUT000024	CR23OUT000020	CR23OUT000097	CR23OUT000048
54	CR23OUT000100	CR23OUT000025	CR23OUT000026	CR23OUT000106	CR23OUT000050
55	CR23OUT000102	CR23OUT000029	CR23OUT000028	CR23OUT000107	CR23OUT000056
56	CR23OUT000104	CR23OUT000030	CR23OUT000034	CR23OUT000108	CR23OUT000058
57	CR23OUT000119	CR23OUT000031	CR23OUT000078	CR23OUT000111	CR23OUT000059
58	CR23OUT000120	CR23OUT000032	CR23OUT000079	CR23OUT000113	CR23OUT000060
59	CR23OUT000124	CR23OUT000051	CR23OUT000081	CR23OUT000114	CR23OUT000061
60	CR23OUT000127	CR23OUT000057	CR23OUT000098	CR23OUT000125	CR23OUT000065
61	CR23OUT000129	CR23OUT000064	CR23OUT000101	CR23OUT000131	CR23OUT000066
62	CR23OUT000137	CR23OUT000074	CR23OUT000103	CR23OUT000132	CR23OUT000067
63	CR23OUT000138	CR23OUT000076	CR23OUT000105	CR23OUT000133	CR23OUT000068
64	CR23OUT000139	CR23OUT000077	CR23OUT000109	CR23OUT000135	CR23OUT000073
65	CR23OUT000143	CR23OUT000083	CR23OUT000112	CR23OUT000140	CR23OUT000075
66	CR23OUT000150	CR23OUT000084	CR23OUT000115	CR23OUT000142	CR23OUT000090
67	CR23OUT000152	CR23OUT000088	CR23OUT000116	CR23OUT000148	CR23OUT000091
68	CR23OUT000159	CR23OUT000094	CR23OUT000126	CR23OUT000160	CR23OUT000121
69	CR23OUT000162	CR23OUT000110	CR23OUT000128	CR23OUT000161	CR23OUT000122
70	CR23OUT000163	CR23OUT000117	CR23OUT000130	CR23OUT000165	CR23OUT000123
71	CR23OUT000169	CR23OUT000118	CR23OUT000145	CR23OUT000166	CR23OUT000134
72	CR23OUT000172	CR23OUT000144	CR23OUT000170	CR23OUT000173	CR23OUT000136
73	CR23OUT000187	CR23OUT000149	CR23OUT000186	CR23OUT000175	CR23OUT000146
74	CR23OUT000190	CR23OUT000157	CR23OUT000188	CR23OUT000177	CR23OUT000147
75	CR23OUT000192	CR23OUT000164	CR23OUT000189	CR23OUT000181	CR23OUT000151
76	CR23OUT000204	CR23OUT000167	CR23OUT000193	CR23OUT000182	CR23OUT000153
77	CR23OUT000205	CR23OUT000168	CR23OUT000194	CR23OUT000183	CR23OUT000154
78	CR23OUT000208	CR23OUT000176	CR23OUT000200	CR23OUT000197	CR23OUT000155
79	CR23OUT000210	CR23OUT000179	CR23OUT000207	CR23OUT000214	CR23OUT000156
80	CR23OUT000213	CR23OUT000180	CR23OUT000209	CR23OUT000215	CR23OUT000158
81	CR23OUT000241	CR23OUT000184	CR23OUT000212	CR23OUT000217	CR23OUT000171

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	FY2024	FY2025	FY2026	FY2027	FY2028
82	CR23OUT000242	CR23OUT000185	CR23OUT000216	CR23OUT000220	CR23OUT000174
83	CR23OUT000243	CR23OUT000196	CR23OUT000221	CR23OUT000225	CR23OUT000178
84	CR23OUT000245	CR23OUT000202	CR23OUT000222	CR23OUT000237	CR23OUT000191
85	CR23OUT000246	CR23OUT000203	CR23OUT000224	CR23OUT000248	CR23OUT000198
86	CR23OUT000247	CR23OUT000206	CR23OUT000227	CR23OUT000254	CR23OUT000199
87	CR23OUT000250	CR23OUT000211	CR23OUT000229	CR23OUT000262	CR23OUT000201
88	CR23OUT000251	CR23OUT000218	CR23OUT000230	CR23OUT000265	CR23OUT000219
89	CR23OUT000258	CR23OUT000223	CR23OUT000232	CR23OUT000268	CR23OUT000231
90	CR23OUT000259	CR23OUT000228	CR23OUT000240	CR23OUT000269	CR23OUT000235
91	CR23OUT000276	CR23OUT000233	CR23OUT000252	CR23OUT000272	CR23OUT000236
92	CR23OUT000281	CR23OUT000238	CR23OUT000261	CR23OUT000273	CR23OUT000253
93	CR23OUT000284	CR23OUT000239	CR23OUT000264	CR23OUT000274	CR23OUT000255
94	CR23OUT000285	CR23OUT000249	CR23OUT000270	CR23OUT000275	CR23OUT000257
95	CR23OUT000286	CR23OUT000256	CR23OUT000271	CR23OUT000277	CR23OUT000260
96	CR23OUT000287	CR23OUT000266	CR23OUT000288	CR23OUT000278	CR23OUT000263
97	CR23OUT000291	CR23OUT000267	CR23OUT000290	CR23OUT000279	CR23OUT000282
98	CR23OUT000293	CR23OUT000280	CR23OUT000292	CR23OUT000283	CR23OUT000295
99	CR23OUT000294	CR23OUT000298	CR23OUT000296	CR23OUT000289	CR23OUT000305
100	CR23OUT000300	CR23OUT000299	CR23OUT000306	CR23OUT000302	CR23OUT000309
101	CR23OUT000301	CR23OUT000308	CR23OUT000307	CR23OUT000304	CR23OUT000310

Appendix G

Comments on MDE Geodatabase Design and Documentation

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Appendix G

Carroll County maintains a MS4 geodatabase throughout the permit year. This geodatabase contains data specifically requested by MDE and additional data that Carroll County staff and personnel have determined is useful to conduct operations. At the conclusion of the permit year, the data contained within the County's geodatabase is migrated to the geodatabase designed by MDE. This is done to abide by the format MDE requires the data to be submitted in and to filter out any extraneous data used only by the County.

The following comments, questions, and suggestions were generated during the data migration into the new draft GDB from MDE. For any comments that MDE previously responded to but still need to be incorporated into future edits to the schema and/or guidance documents, we included both our recommendation and MDE's response in order to help consolidate these potential edits together into one document.

General Notes

As requested in previous comments, it would be helpful to learn more about how data migrates from the MDE GDB into the Bay modeling (e.g. which fields are used as model inputs). This would allow us to verify that we are recording and reporting data in line with how it will be used in modeling efforts.

- *MDE responded that they would be willing to provide a short presentation on this topic during a future meeting.*

Tables and Feature Classes

PermitInfo

- FEDERAL_NUM
 - *In the 2023 Response to Comments, MDE responded that, "the FEDERAL_NUM is a 10-character number that includes two dashes (i.e. 22-DP-3319 for CR)."*
 - It is our understanding that 22-DP-3319 is our MDE permit number. Our Federal Number is MD0068331, which is only 9 digits. If this is correct, please change description from "10 digit federal permit number" to "Federal permit number" and remove data validation check, which says "Must be 10 digits." If this is not correct, please let us know which permit ID goes in which field.
- PERMIT_NUM
 - The latest schema erroneously has this as limited to 9 characters. Both the User's Guide and Excel schema list it as 11. We edited the schema to accommodate 11 characters for our MDE permit number, 22-DP-3319. Please update the schema shell.

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BMP

- PE_PRE_CONV:
 - Please provide more direction on how to populate the PE_PRE_CONV field. Two examples are provided below to help MDE guide us on the proper use of this new field.
 1. Sometimes during a retrofit, we will change the DA in order to treat more impervious than the original facility treated. In this case, would MDE like us to populate this field with the original facility PE, or should we calculate a pre-conversion PE using the original WQv and the final IA to the new facility?
 - *In the 2023 RTC, MDE responded that “MDE only requires the PE of the retrofit BMP after conversion. The old BMP ID should be labeled as ‘converted.’”*
 - This comment was in reference to the PE_Pre_Conv field, which is asking us to provide the PE of the original facility within the record of the new retrofit.
 - As an example, suppose we had an original facility that provided 1” of treatment to 10 acres of impervious. During the retrofit of that facility, we increase the WQv and expand the drainage area to treat an additional 10 acres to 1”. Both the pre-conversion PE and post-conversion PE would be 1”, but the original facility only provided 1” to 10 acres and the retrofit provided 1” to 20 acres. If we retained the original facility PE for this field, it would appear as though no additional treatment was provided. If we recalculated the original PE in relation to the final IA (i.e. PE = 0.5”), it would more accurately reflect the change in treatment at this location.\
 2. We have a few larger restoration practices that replaced more than one existing BMP. In one case so far, the PE was different for each of those original facilities. In order to populate this field, we summed the total original WQv and divided by the total IA to the new RestBMP to calculate an original PE. Please let us know if this approach is acceptable.
 - *In the 2023 RTC, MDE responded that “MDE only requires the PE of the retrofit BMP after conversion. The old BMP ID should be labeled as ‘converted.’”*
 - This comment is in reference to the PE_Pre_Conv field, which is asking us to provide the PE of the original facility within the record of the new retrofit.
 - As an example, suppose we had two original facilities near one another: the larger facility treats 10 impervious acres to 0.5” and the smaller facility treats 2 impervious acres to 0.25”. During a retrofit project, we combine the two facilities into one large facility. How would MDE prefer

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us to fill in the PE_Pre_Conversion field? Our suggestion would be to take the sum of the WQv of both original facilities and divide it by the sum of the impervious acres in the final retrofit facility.

- Redevelopment Scenarios
 - The general guidance for redevelopment is to split those BMPs into two records, one reflecting the portion of treatment on existing impervious for restoration crediting, and the other reflecting the treatment of new impervious added. This process has always posed a challenge for our data end-users who see two BMPs mapped when only one truly exists on the ground. For inspection staff, they also need to create duplicate inspection records each time an inspection or follow-up action is performed. With the combination of BMP and RestBMP features into a single BMP feature class and the addition of many new fields to track crediting, we feel there may now be a way to account for redevelopment crediting within a single record. Data could be entered similarly to a retrofit practice where the original facility provided credit; the original treatment amount still exists in the new facility and is reflected in the record, but is also parsed out for crediting purposes through some of the new fields. We would greatly appreciate if MDE could consider the options for capturing redevelopment BMPs within a single record, as the current process poses significant practical challenges on our end.
- PROJECT_NAME field:
 - We had recommended adding this field back in to a number of feature classes related to alternative BMPs and appreciate MDE adding it to those layers. In that process, the field was also added to the BMP feature class, but there is already a field to capture this (BMP_NAME), so PROJECT_NAME can be removed as it is redundant in this particular layer.
- BMP_ID field:
 - Per guidance from MDE, when we brought the RestBMPs into the BMP feature class, we retained their existing RestBMPIDs. Starting next year, we will begin naming with the BMP naming convention.

AltBMPPoly

- dBMPType removal of GMB and FB domains
 - In previous comments, we noted that the Grass Buffer and Forest Buffer options were removed from the dBMPType domain in the new GDB and that we need guidance on how to transition older BMPs to the updated BMP types. For context, the County has a large number of grass and forest buffers that were accepted by MDE for impervious credit on previous permits. These had different requirements than the current land cover conversion BMPs (e.g. they weren't split into riparian and upland zones), so there is no longer an option in the domain of BMP types that fits their characteristics. While we recognize that our BMPs must fit into one of the Bay Model BMP types with assigned reduction efficiencies, we also need to maintain those older records of approved practices for impervious restoration credit tracking.

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- *In the 2023 RTC, MDE responded that, “the County may retain this information for its own records and use. The GDB is not intended for BMPs that are not acceptable to the CBP or the permit. This information may be removed from the County’s GDB.”*
 - These practices were approved during previous permits and accepted for restoration crediting. With updated alternative BMPs in the new WLA Manual, there has not been guidance on how to translate BMPs that were previously defined in a certain way into the new menu of BMPs while still maintaining records for crediting. For FY2023, we have provided the BMPs consistent with the protocol below, and we will be working on determining how to move forward with this reporting issue over the next permit year.
 - In order to transition our older grass buffers into the new GDB, we recoded them as Riparian Conservation Landscaping BMPs and edited the GEN_COMMENTS field to say, “Grass Buffer Crediting.” The impervious crediting field remains the same as when it was accepted in previous permit years. We did not split these into riparian and non-riparian polygons; they all originated as Water Resource Easements and/or Floodplain Easements, which means they are all centered on surface waters. While there may be areas that would extend beyond the 100-ft buffer that designates Riparian vs. Non-Riparian Conservation Landscaping, they are all one contiguous piece of a riparian buffer. We felt this was a reasonable approach to maintaining the older grass buffer records while also making them fit the Bay Model requirements.
 - In order to transition our older forested buffers into the new GDB, we recoded them as Forest Conservation (FCO) BMPs and edited the GEN_COMMENTS field to say, “Forest Buffer Crediting.” Again, the impervious crediting remains the same as when it was accepted in previous permit years.
- SDV_OR_CBC_MATERIAL:
 - The field SDV_MATERIAL was renamed as SDV_OR_CBC_MATERIAL, but the field alias was not updated, so it still displays as SDV_MATERIAL in the attribute table.
 - Please update the data validation check to say, “Conditional on BMP_TYPE = SDV or CBC.”
- Annual Practice Records:
 - MDE has commented that for annual practices (e.g. street sweeping), we should delete old records and only retain the current year record. We recommend against this approach. In order to calculate the running average for the permit term each

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year, we will need all records for previous years in the permit term. We also recognize the value in keeping previously submitted records for things like reviews and audits. As an alternative, we suggest retaining all records but changing the BMP_STATUS to Removed if it is a record from a previous year. If that would cause issues with credit tracking, MDE could add a value to the dBMPStatus domain such as “Previous annual practice.”

AltBMPPoint

- Annual practice records: same comment as in AltBMPPoly section above.

AltBMPInspections

- *In the 2023 RTC, MDE responded that, “Inspections for AltBMPLine and AltBMPPoly are required. Inspections for AltBMPPoint are optional.”*
 - For BMPs within the polygon layer, we conduct inspections on everything except the annual practices. If MDE intends for inspections to be performed on annual practices, please provide guidance on this process (e.g. how to inspect street sweeping).

ShorelineManagementPractices

- In the User Guide this table is called Shoreline Management Protocols, but in the GDB it is Shoreline Management Practices. Please update the User Guide.

Outfall Feature Class

- *In the 2023 RTC, MDE commented that, “only major outfalls are required to be reported” in the Outfall feature class. Additionally, in response to the question whether minor outfall drainage areas needed to be provided, MDE said that “this is not required, but an option if permittees wish to include.”*
 - The new permit requires prioritizing outfalls and includes both major and minor outfalls. Within the IDDEScreening table, it asks for the MDE_Outfall_ID with a validation check that it must match the MDE_OUTFALL_ID in the Outfall feature class. For data clarity, we recommend that, in addition to all major outfalls, any outfalls with a record of IDDE screening should be included in the Outfall feature class as well. Otherwise, an MDE_Outfall_ID is mandated for the IDDE table but has no corresponding location in the Outfall feature class.
 - We do support keeping the drainage area optional for non-major outfalls.
- *In the 2023 RTC, MDE noted that the LAND_USE field has been removed.*
 - The LAND_USE field is still in the feature class. We edited the schema and made it nullable in our GDB submission for this year.

MunicipalFacilities

- With the removal of GHP tracking in this table, please update the description in the User Guide to reflect that it is for submitting data on industrial stormwater facilities only.

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- Additionally, please also remove GHP from the list of new or renamed fields in the User Guide.

ChemicalApplication Table.

- CHEM_CAT
 - Please increase field length to 6 to accommodate ANTICE coded value. We edited the schema to 6 characters for this year's submission.
 - For FY23, solid salt records were entered as deicing, and brine records were entered as anti-icing. Time of application in relation to the start of the storm was not recorded; a portion of the solid salt records were applied as anti-icing efforts, but this level of detail is not currently being differentiated in tracking data.

QuarterlyGradingPermit Feature Class

- Field aliases: In a number of fields, there is an issue with the alias that should be fixed in the next round of edits to the GDB shell.
 - *The issue was noted in last year's schema, and MDE commented in the 2023 Response to Comments (RTC) that the aliases had been fixed.*
 - While the issues in the Stream Restoration Protocols and Chemical Monitoring tables have been resolved, they still remain in the Quarterly Grading Permit feature class. In each of the fields below, there is a return in the alias. While not an issue in ArcGIS Pro, when copying tables into Excel it causes a split in the rows. To fix, open the fields view of the attribute table. Double click on the Alias for that field. Press enter. A green bar should appear on that row. Click save.
 - Affected fields in the Quarterly Grading Permit feature class: Lat and Long, Site Name, Address, City, State, Zip, Owner, Owner Address, Owner City, Owner State, Owner Zip, and Watershed 8-Digit

FiscalAnalyses Table

- In the User Guide this table is called Program Funding, but in the GDB it is called Fiscal Analyses. Please update the User Guide.

Assessment of Controls Feature Classes and Tables

- In the 2023 RTC, MDE noted that, "The existing AOC tables in the GDB may be used for interim reporting until further direction from MDE." The following comments were submitted with the last year's annual report, and we are including them again for reference for MDE when the new data reporting format is provided.

ChemicalMonitoring

- TN_EMCC field: If constituent parameters (TKN, Nitrate/Nitrite N) are below detection limit, should TN be calculated with 0 for that parameter?
- Discharge_Instream and Discharge_Outfall:

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- Please provide more information on how to fill in these fields. Would this be peak discharge for storm events and instantaneous discharge for baseflow sampling?
- Because each record corresponds to a single monitoring location, recommend replacing these fields with a single “Discharge” field that would be the discharge at the individual monitoring site.
- For EMC fields, the description says to use dt for values “at or below” the detection limit, but the validation check says “below” only. We populated with dt if the value was below detection limit. If at the detection limit, we put the value. Please update either the field description or the validation check.
- NH3_NH4_EMC: update description to say, “EMC for total ammonia (mg/L) using "dt" for values at or below the detection limit” for consistency.
- EVENT_DATE:
 - Update description to be sampling date for baseflow (not taken during a storm event) and specify what date should be entered for storm samples (e.g. date of storm start, peak flow, etc.).
 - MDE may want to consider adding a field like EVENT_END_DATE field, since storms may span several days.
- EVENT_TIME: Update description to be sampling time for baseflow and specify what should be entered for storm samples (e.g. time of storm start, peak flow, etc.).
- DURATION: Please update the description to specify whether this is the duration of the sampling or the duration of the precipitation event.
- HARDNESS_EMC: The units for hardness should be changed to mg/L.
- For PO4_dt and PO4_EMC, should these be reported as P or PO4?
- For Total_Phosphorus_dt and Total_Phosphorus_EMC, should this be reported as P?
- For TN_dt/TN_EMC, NH3_NH4_dt/NH3_NH4_EMC, and TKN_dt/TKN_EMC, should these be reported as N?
- Using dt for censored values in EMC and loading calculations is generally unacceptable for mass loading estimation.

MonitoringSite

- STATION_LOC: Change from conditional to mandatory.

2023 NPDES MS4 Permit Annual Report

- LAND_USE and LU_COUNTY: Recommend removing. This information can be understood and extracted in GIS.
 - *MDE replied that this is acceptable and they will provide greater clarity in the future.*

BiologicalMonitoring

- HABITAT_DESCRIP: Update description to specify on what this field is conditional.
 - *MDE replied that they will provide greater clarity in the future.*
- EVENT_TIME: Change to 24-hour format for consistency with ChemicalMonitoring table.

Domains

dBMPType

- XDPD change from “Detention Structure (Dry Pond)” to “Dry Pond” for consistency with change in wet pond

Appendix H

Town of Mount Airy Phase II Permit Requirements

2023 NPDES MS4 Permit Annual Report

APPENDIX H

**Supplemental Reporting: Town of Mount Airy (Frederick County Side)
National Pollutant Discharge Elimination System
General Permit for Discharges from Small Municipal Separate Storm Sewer Systems
General Discharge Permit No. 13-IM-5550 General NPDES No. MDR055500**

**Permit Area: Town of Mount Airy (Frederick County Side)
Effective Date: October 31, 2018
Expiration Date: October 30, 2023**

Permit Status: MDE / Administratively Extended

Purpose and Background

The purpose of this appendix is to provide supplemental information to describe, highlight and demonstrate active implementation of the Town of Mount Airy's Phase II MS4 permit requirements issued for its jurisdictional area within Frederick County.

As in past years, the Carroll County Phase I MS4 Annual Report provides information for both the Phase I co-permittees (i.e. the County and eight municipalities, including the Carroll County side of Mount Airy) and the Frederick County side of Mount Airy for its Phase II requirements. Programmatic information continues to be reported in this narrative, as well as in the associated GDB on the **Appendix B** CD. MDE has affirmed in discussion and within the enclosed correspondence that, "under the conditions of the MS4 general permit, any permittee may enter into an agreement with another State, federal, or municipal partner to satisfy one or more of the permit obligations."

A December 2014 Memorandum of Agreement (MOA) between Carroll County and the eight municipalities – including Mount Airy – contained provisions for the County to perform numerous programs and duties in coordination with each municipality to meet Phase I MS4 permit requirements. Per MDE guidance, a formal MOA between the Town of Mount Airy and Carroll County (enclosed) was entered into on March 10, 2022, and documented the coordinated responsibilities in support of permit compliance for the Phase II permit that have been in place since the issuance of the Phase II permit. The Phase II permit requirements for the Frederick County side of Mount Airy have been and are being met through the existing partnership with Carroll County, as validated by an MDE October 17, 2019 letter and subsequent MDE reviews and communications (enclosed).

MDE notified NPDES Phase II MS4 permittees in October 2023 that the current permit would be administratively extended after its expiration date and that permit requirements and conditions would continue to be in effect. MDE also noted the next generation Phase II MS4 tentative permit is anticipated in calendar year 2024.

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Impervious Acreage Baseline

The table below summarizes the impervious acreage for the Frederick County side of Mount Airy: the total amount, the amount currently treated by stormwater management, the remaining untreated impervious acreage, and 20% of the remaining untreated acreage.

Frederick County Side of Mount Airy	
Area	Acres
Total Impervious Area	197
- Treated Impervious Acres (IA)	66
Untreated IA	131
Restoration Requirement = 20% of Untreated IA	26

Restoration Planning and Implementation

The Town of Mount Airy has been working closely with the Carroll County Bureau of Resource Management on restoration efforts at two locations. In the fall of 2016, the Town identified the Twin Ridge stormwater management facility as a site they would be interested in retrofitting. Numerous maintenance issues had been identified through maintenance inspections, and this was one of the Town’s oldest facilities, with a large amount of untreated impervious acreage. The project was put out to bid for construction in January 2020. Construction is now complete and the facility has been as-built approved.

In December 2017, a Request for Proposal was issued for the Woodville Branch watershed study. The purpose of this study was to determine the most cost-effective way to improve treatment of impervious area in the watershed. From that study, it was determined that the East West Pond (new construction) would be the second restoration project in the Phase II area. The project received grant funds from the MDE Bay Restoration Fund. It was designed and put out to bid for construction in July 2020. Construction is now complete and the facility has been as-built approved.

The chart below provides summary information for restoration projects relating to the Phase II permit requirements.

Mount Airy Projects - NPDES Phase II (Frederick County)						
Year	Project Name	Project Type	Watershed	Project Status	Cost	Impervious Area Credit
2021	Twin Ridge	Retrofit	Lower Monocacy	Complete	\$802,690	25.2
2022	East West Pond	New Construction	Lower Monocacy	Complete	\$1,334,605	53.0
Total						78.2
% of Baseline Treated						59.7%

In preparation for the next generation Phase II MS4 permit, MDE has requested that permittees provide a summary of restoration plans through FY2030. The Town of Mount Airy has

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proactively addressed both current and future impervious restoration requirements by providing treatment far above the current permit’s 20% restoration requirement. If a 10% restoration requirement for the next permit term is acceptable to MDE (i.e. an additional 13 acres), the Town would be able to achieve this through the restoration provided by the facilities in the table above.

Minimum Control Measures (MCMs)

The Town of Mount Airy has provided information on implementation of Phase II Minimum Control Measures (MCMs) for incorporation into the Carroll County Phase I Annual Report. Many of these MCM-related efforts are discussed in the corresponding Phase I sections of the main report. The table below lists the corresponding section(s) where this information can be found and also highlights specific progress related to each MCM.

MCM Cross Reference Table

Phase II MS4 Permit MCM #	Phase II MS4 Permit Minimum Control Measure	CC Phase I MS4 Report Section <i>Part IV.D Standard Permit Conditions – Mgmt. Programs</i>	Comment
MCM #1	A. Public Education and Outreach	6. Public Education 5. PMM (Staff Training)	See Phase I Report Narrative
<ul style="list-style-type: none"> • Report Water Quality Complaints: Municipal website “Report a Concern,” office phone number, or link to co-permittee Carroll Co. Stormwater Pollution Hotline to report water quality issues, coordinated with Town personnel. • Determine the Target Audience: Mount Airy Sustainability Commission (MASC) (Maryland Certified) consists of nine residents and Town Council member with Town staff liaison. Their charter is to “encourage, teach, and promote the activities, duties, and other needed actions to achieve the Maryland Sustainable Certification and increase the benefits to our Town, our environment, and our residents by ensuring green sustainable activities as part of our daily lives.” MASC makes recommendations to the Town Council on reasonable environmentally-friendly policies and practices and advises mayor, staff, and Council on zoning and planning measures. MASC also provides stormwater runoff and pollution prevention guidance, with support from Phase I co-permittee Carroll Co. NPDES and BRM staff. • Distribute Stormwater Educational Materials: <ul style="list-style-type: none"> > Materials available in the Town Hall foyer, on the municipal website, in newsletters, and at public education & outreach booth events. > Municipal website provides: <ul style="list-style-type: none"> ○ A variety of materials and resources promoting environmental/green practices that residents can implement at home and in the community ○ Information on water quality and stormwater pollution prevention ○ A link to the Carroll Co. NPDES public education websites, etc. ○ Public announcements. > Monthly Town vlog educational forum for related subjects and sponsored community events. • Annual Employee Training: Regular NPDES MS4 permit stormwater pollution prevention training provided, with emphasis on reducing pollutants through implementation of Good Housekeeping Best Management Practices in property management and maintenance activities. See also MCM #6. Training is provided by staff and also coordinated with Carroll Co. BRM NPDES Compliance Specialists. 			

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Phase II MS4 Permit MCM #	Phase II MS4 Permit Minimum Control Measure	CC Phase I MS4 Report Section <i>Part IV.D Standard Permit Conditions – Mgmt. Programs</i>	Comment
			<ul style="list-style-type: none"> • Education and Training Programs: Programs have helped the general public and staff to increase their awareness of conditions of our waterways, potential pollutant sources, and everyday activities that can result in stormwater runoff contaminants entering and exiting the MS4. Implementing stormwater pollution prevention practices through intentional community efforts help to support municipal staff in protecting the Town’s MS4 and waterways.
MCM #2	B. Public Involvement and Participation	6. Public Education 4. Litter and Floatables.	See Phase I Report Narrative
			<ul style="list-style-type: none"> • Target Audience for Public Involvement and Participation Activities: This was developed and shaped through the formation of the Maryland Certified Mount Airy Sustainability Commission (MASC) and in working with the Town Council, Town of Mount Airy Main Street Association, and municipal agencies (e.g. Recreation and Parks), and staff. The target audience reflects a cooperative community effort with a focus on residents working with the business community, civic groups, volunteers, municipal leadership, boards and commissions, and municipal staff support. • Specify Activities for Target Audience to Promote Participation: <ul style="list-style-type: none"> > Teaching and instruction through demonstrations and exhibits. > Interactive public education outreach booth at municipal events, markets, festivals, etc. > Vlog educational forums on social media > Community garden demonstrations on water conservation, mulching, rain barrels, etc. > Community beautification and clean-up events and litter clean-up events. > Municipal Adopt-A-Road program – two-year commitment, four times per year > Weed Warrior program > Recreation and Parks – park, weed control, and stream clean-up days • Public Events <ul style="list-style-type: none"> > Windy Ridge Park – Park and stream cleanups, Town-hosted, 5 events, avg. 10 participants > Watkins Park – Park cleanup, Town-hosted, 2 events, avg. 5-10 participants > Rails to Trails Cleanup Events – Litter cleanup, Town-hosted, 7 events, avg. 5-10 participants > Main St. Cleanup – Litter cleanup, Town-hosted, 1 event > Town of Mount Airy Adopt-A-Road Program – 4 adopted roads and 4x per year – 16 events > Mount Airy Sustainability Commission MASC Public Meetings – 6x per year > Farmers Market Demo Days, established by MASC – interactive public outreach and participation, June through September > I Heart Mt. Airy Vlog on Facebook and YouTube –Visual interactive community event, opportunities including water quality volunteer opportunities • MS4 Progress Reports: Information on the Town of Mount Airy Phase II MS4 permit progress is provided by the Town for incorporation into the Carroll Co. Phase I MS4 Permit Annual Report. <ul style="list-style-type: none"> ○ Past and present annual reports can be accessed from the following County website: https://www.carrollcountymd.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/annual-reports/ ○ Comments regarding the Town of Mount Airy Phase II MS4 Permit progress reporting may be addressed to: <ul style="list-style-type: none"> Attention: Town Administrator Re: Town of Mount Airy Phase II MS4 Permit Progress Report 110 S. Main Street P.O. Box 50 Mount Airy, MD 21771

2023 NPDES MS4 Permit Annual Report

Phase II MS4 Permit MCM #	Phase II MS4 Permit Minimum Control Measure	CC Phase I MS4 Report Section <i>Part IV.D Standard Permit Conditions – Mgmt. Programs</i>	Comment
MCM #3	C. Illicit Discharge Detection and Elimination (IDDE)	3. Illicit Discharge Detection and Elimination (IDDE) with Appendix C	See Phase I Report Narrative
<ul style="list-style-type: none"> • MS4 Storm Drain System Map: A municipal storm drain system map for the entire corporate limits was initially developed under previous Town and Carroll Co. MS4 permits. Mapping for the Phase II permit area (Frederick Co. portion) is maintained and regularly updated by Carroll Co. BRM NPDES Compliance Specialists using GIS. Field verification is by Mount Airy DPW and Carroll Co. NPDES Compliance staff. Updates to stormwater infrastructure (e.g. for new development), including stormwater BMPs, is provided through the as-built process. Quality control is performed by both Town and County staff. Hard copy and digital maps are provided to the Town. • Municipal Ordinance Chapter 94A Storm Sewer Systems: The “Town of Mount Airy Environmental Management of Storm Sewer Systems Ordinance” prohibits illicit discharges to the MS4 and provides legal access to private property to investigate and eliminate illicit discharges and/or connections. • Develop, Implement and Submit Written Standard Operating Procedures (SOP): The SOP manual, “Illicit Discharge Detection and Elimination Manual, A Guidance Manual for Carroll Co. Government and Municipalities of Carroll Co., MD” was previously submitted with MS4 Annual Reports and was reviewed and approved by MDE. The manual outlines the procedures utilized with Municipal Ordinance Chapter 94A and describes coordination with adjacent and interconnected MS4 operators. The IDDE program is coordinated between the Town of Mount Airy Municipal Code Enforcement and Carroll Co. Bureau of Resource Management NPDES Compliance staff. This SOP was re-scheduled to be updated under next Carroll County MS4 Phase I Permit Term in the 2023 calendar. • IDDE Outfall Screening Process Documentation: The latest outfall screenings were performed by Carroll Co. NPDES Compliance Specialists in coordination with Mount Airy DPW staff during FY2023. Records, results, investigations, and enforcements are documented and maintained by Carroll Co. BRM. <ul style="list-style-type: none"> > 20% or 8 IDDE screenings required. Eight IDDE screenings performed. No illicit discharges. > Results: 6 No Flow, 2 Flows /2 Negative Chem Test. 2 flows natural groundwater. > Results documented and infrastructure condition provided. • IDDE Program Investigation Records: Town of Mount Airy Code Enforcement leads and coordinates IDDE investigations with Carroll Co. BRM NPDES Compliance staff, who provide guidance on- and off-site as needed. Investigations are processed until resolved. Mount Airy administers enforcement per Chapter 94A, consistent with permit requirements. BRM tracks and documents each IDDE investigation in their database, and program records are maintained and available for MDE field review. Investigations are also tracked and documented internally by Mount Airy Code Enforcement. <ul style="list-style-type: none"> > IDDE investigation results are included in the Carroll Co. Phase I Report, Part IV.D.3 and Appendix C. 			
MCM #4	D. Construction Site Stormwater Runoff Control	2. Erosion and Sediment Control	See Phase I Report Narrative
<ul style="list-style-type: none"> • This program is delegated to Carroll Co. 			
MCM #5	E. Post Construction Stormwater Management	1. Stormwater Management	See Phase I Report Narrative
<ul style="list-style-type: none"> • This program is delegated to Carroll Co. 			

2023 NPDES MS4 Permit Annual Report

Phase II MS4 Permit MCM #	Phase II MS4 Permit Minimum Control Measure	CC Phase I MS4 Report Section <i>Part IV.D Standard Permit Conditions – Mgmt. Programs</i>	Comment
MCM #6	F. Pollution Prevention and Good Housekeeping	5. Property Management and Maintenance	See Phase I Report Narrative
<ul style="list-style-type: none"> • Annual Training: Regular employee stormwater pollution prevention training to reduce pollutants is provided and performed. Training provides an emphasis on implementation of Good Housekeeping BMPs in property management and maintenance activities including street sweeping, storm drain inlet cleaning, winter weather salt management, and vegetation management. Additional topics include IDDE, spill control and clean-up measures, 12SW Industrial Stormwater Pollution Prevention Plan, etc. Trainings are provided through educational videos, in-person/on-the-job instruction, BMP shop posters, and BMP guidance manuals. Training Materials examples can be found in the “Carroll Co. Property Management and Maintenance Resource Guide.” <ul style="list-style-type: none"> > Mount Airy DPW MS4 Good Housekeeping/BMP training: 10/2022 - 13 Employees > County Staff/Mount Airy DPW IDDE code enforcement staff training: 12/2022 - 1 Employee > Carroll County Annual NPDES MS4/12SW Permit Stormwater Pollution Prevention Manager/Supervisory Training: 10/2022 – 3 staff (See Appendix C for Agenda). • Good Housekeeping Plan – Permittee-owned Properties: <ul style="list-style-type: none"> > Maintenance of vehicles and heavy equipment, fuel, deicer, herbicides, and road maintenance materials are stored at the Mount Airy Public Works Shop, which is an MDE 20SW Industrial General Permit permitted facility with SWPPP. > Deicers are used for public streets and parking lots. Herbicides are applied for weed control along streets and municipal parks, including five parks in the Frederick Co. portion. > Good Housekeeping BMP Fact Sheets: “Carroll County Property Management and Maintenance Resource Guide,” including Pollution Prevention BMP Guidance Manual, is kept at the DPW Maintenance Shop. • 20SW Permitted Facility – Mount Airy Public Works Maintenance Shop <ul style="list-style-type: none"> > Renewal MDE Registration: 08/15/2023 20SW2257/MDR002257 > Stormwater Pollution Prevention Plan (SWPPP) and inspection records onsite. • Property Management and Maintenance (Pollution Reduction thru Good Housekeeping BMPs) <ul style="list-style-type: none"> > See Carroll Co. Annual Report Part IV D.5. Property Management and Maintenance (including Table 5) for detailed Mount Airy property management and maintenance activities and good housekeeping BMPs. > Street sweeping is primarily focused on the high traffic areas of downtown, within Carroll Co., and along Prospect Rd. to the DPW Maintenance Shop, within Frederick Co. Streets are swept 2x per month in fall and spring and monthly during summer. Inlet cleaning is performed throughout the municipality, and materials are brought to the DPW Maintenance Shop (12SW facility) for disposal at the landfill. > Vegetation management is primarily through mechanical and alternative methods, including mowing and trimming, pulling weeds, mulching, spot spraying, and providing training. > Winter weather management: Practices include equipment calibration, weather forecasts, post-winter/-event evaluation, and employee training. A formal Salt Management Plan will be developed and implemented as part of the next generation Phase I MS4 permit. > Litter Control and Prevention: Practices include “No Litter” signs, trash receptacles on streets and in parks, trash collection and recycling services, street sweeping, volunteer litter pick-up programs (e.g. Adopt-A-Road), staff litter collection (roads, parks, public spaces), clean-up of reported dumping incidents, and a litter ordinance. 			

2023 NPDES MS4 Permit Annual Report



MEMORANDUM OF AGREEMENT (MOA)

Between

CARROLL COUNTY, MARYLAND

And

THE TOWN OF MOUNT AIRY

For

COUNTY SUPPORT TO TOWN IN COMPLYING WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) REQUIREMENTS WITHIN THE PORTION OF THE TOWN LOCATED WITHIN FREDERICK COUNTY

NPDES Phase II MS4 PERMIT ISSUED to TOWN OF MOUNT AIRY

THIS MEMORANDUM OF AGREEMENT ("MOA") is made this 10th day of Mar, 2022, by and between Carroll County (hereinafter sometimes referred to as "Carroll County" or "the County") and the Town of Mount Airy (hereinafter referred to as the "Town").

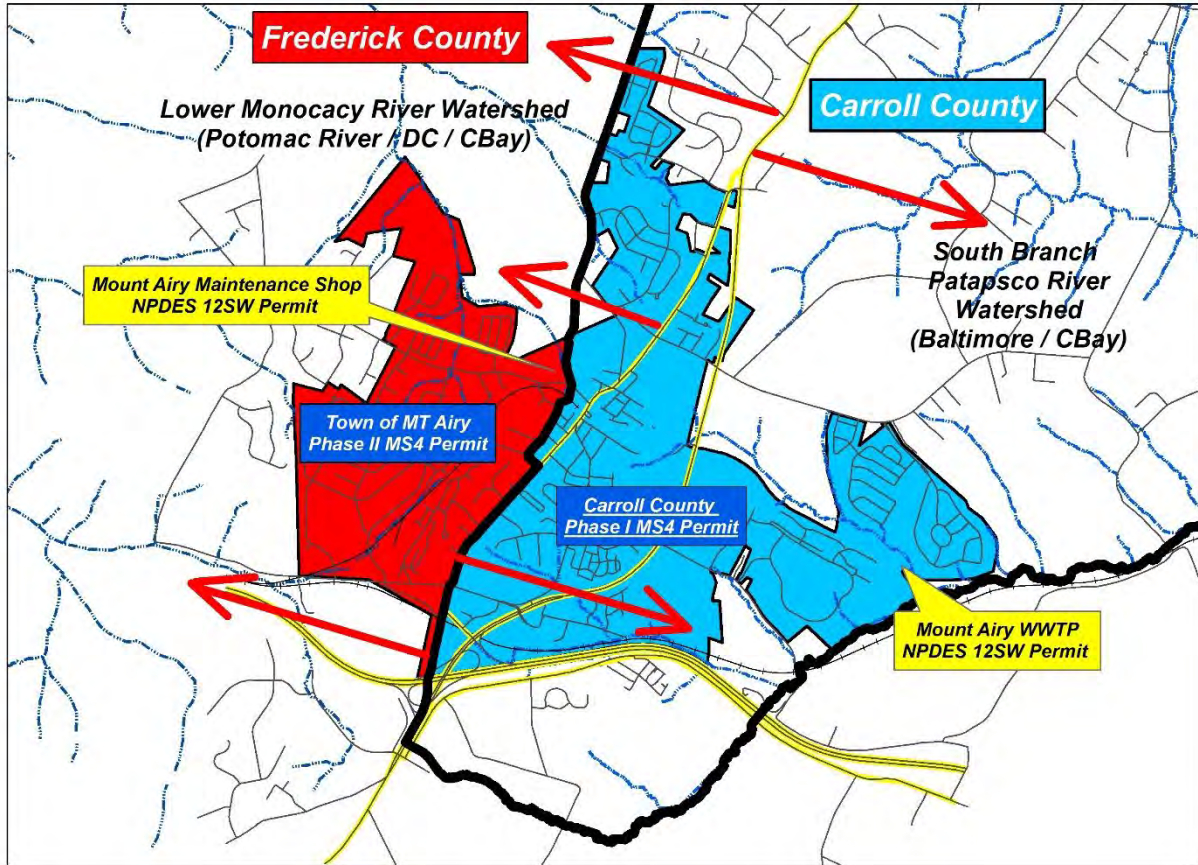
WHEREAS, a portion of the Town is in part located within the geographic boundary of Frederick County, Maryland; and

WHEREAS, the Town is subject to a separate State-issued National Pollutant Discharge Elimination System ("NPDES") Municipal Separate Storm Sewer System ("MS4") permit pursuant to COMAR 26.08.04 in accordance with Section 402 of the Clean Water Act (40 CFR 122.26) for the area of the Town located in Frederick County; and

WHEREAS, the Permit allows a small municipality to coordinate with a surrounding county covered under an MS4 NPDES stormwater permit; and

WHEREAS, the parties have agreed that they will work together for the best interests of the citizens of the Town for the purpose of managing the stormwater systems and activities required by the Permit for the area of the Town within Frederick County; and

2023 NPDES MS4 Permit Annual Report



Town of Mount Airy ~ NPDES/MS4 Jurisdictions & 12SW Permitted Facilities



Correspondence Related to Mount Airy Phase II MS4 Permit

2023 NPDES MS4 Permit Annual Report

From: Michelle L Crawford -MDE- <michelle.crawford1@maryland.gov>
Sent: Thursday, October 5, 2023 3:16 PM
To: Edwards, Glenn D.
Cc: Deborah Cappuccitti -MDE-; O'Meara, Janet L.; Hirt, Claire C.R.; Devon Kosisky -MDE-; bquinn@mountairymd.org; hsmith@mountairymd.gov
Subject: Re: Status of Phase II MS4 Permit - Town of Mount Airy

This message originated outside of Carroll County Government. Use caution when opening attachments, clicking links or responding to requests for information.

Good afternoon all,

This afternoon we're sending the email reminder to all Phase II permittees. It explains how to submit annual progress reports due at the end of this month, which of course does not apply to the Town because you continue to report your program activities with Carroll County's annual report.

As Debbie said below, there is also information in the email about the administrative extension of the permit. After reading it please let me know if you have further questions.

Sincerely,
Michelle

On Thu, Oct 5, 2023 at 11:12 AM Edwards, Glenn D. <gedwards@carrollcountymd.gov> wrote:

Thank you for getting back to us! Glenn

From: Deborah Cappuccitti -MDE- <deborah.cappuccitti@maryland.gov>
Sent: Thursday, October 5, 2023 10:01 AM
To: Edwards, Glenn D. <gedwards@carrollcountymd.gov>
Cc: O'Meara, Janet L. <jomeara@carrollcountymd.gov>; Hirt, Claire C.R. <chirt@carrollcountymd.gov>; Michelle L Crawford <michelle.crawford1@maryland.gov>; Devon Kosisky -MDE- <devon.kosisky@maryland.gov>; hsmith@mountairymd.gov; bquinn@mountairymd.org
Subject: Re: Status of Phase II MS4 Permit - Town of Mount Airy

2023 NPDES MS4 Permit Annual Report

Hi Glenn,

1

Thank you for the question. I am including our contacts at Mount Airy in this email.

We are getting ready to send out an email in this regard.

To answer your question - the Town and Carroll County do not need to do anything. The permit will be administratively continued after October 31 and all permit conditions remain in force - including annual reporting.

We will be working on a new permit in the next year. With that, we had asked all permittees in the last annual report reviews to include planning for restoration out to 2030 (beyond 2025). Please include information on what is feasible for restoration for the next permit term. We asked that the Restoration Activity Schedules to be updated to show plans out to 2030. But we are happy to get a narrative of what the Town believes is possible for additional planning in the next permit.

let me know if you have questions and please look for an email from us in the coming days,

thanks again,

Debbie

On Thu, Oct 5, 2023 at 8:08 AM Edwards, Glenn D. <gedwards@carrollcountymd.gov> wrote:

Hi Debbie,

As you know we work with the Town of Mount Airy on their Phase II MS4 permit for their Frederick County portion within their municipality. With the permit expiration of October 30, 2023, is there anything the Town (permit holder) needs to do administratively at this time other than continuing to operate under the current permit. We have not seen or noticed any news on the next generation of the Phase II MS4 GP. We are working with Mt Airy on our Phase I MS4 Report for Carroll County and the Appendix section dedicated to Mount Airy's Phase II MS4 permit reporting and want to be sure if any renewal statement is required in the annual report, etc.

Thanks,

Glenn

2023 NPDES MS4 Permit Annual Report

From: Michelle L Crawford -MDE- <michelle.crawford1@maryland.gov>
Sent: Thursday, October 5, 2023 3:15 PM
To: Michelle L Crawford
Cc: Deborah Cappuccitti -MDE-; Devon Kosisky -MDE-
Subject: Subject line: Reminder: MS4 General Permit progress reports Due October 31 and Special Announcement
Attachments: Phase II MS4 Excel BMP Template.xlsx; Example Phase II MS4 Restoration Activity Schedule.xlsx; Municipal MS4 Fillable Progress Report Appendix D.docx

This message originated outside of Carroll County Government. Use caution when opening attachments, clicking links or responding to requests for information.

Good afternoon all,

This is a reminder to all Phase II permittees that the next progress report is due October 31, 2023, to report on activities to comply with the NPDES MS4 Phase II Municipal General Permit.

Information due October 31, 2023:

- Appendix D Section I of the permit (restoration activities)
- An updated BMP Database as an Excel file
- An updated Restoration Activity Schedule as an Excel file. The Department has requested that permittees update their RAS and plan for continued restoration through 2030.
- A Work Plan for meeting permit goals by 2025 and future planning through 2030
- Specific information describing your restoration capabilities through 2030
- Any information specifically requested in the Department's last review regarding the six Minimum Control Measures
- Responses to all Department comments in the last progress report review. Where no follow-up was requested, you may indicate "Comment noted" or something similar
- Supporting materials as necessary.
- Large files may be submitted as email attachments, through a secure shared file site (such as Google Drive, OneDrive, or DropBox), File Transfer Protocol (FTP), etc.

The template files are attached. This information is also available on the following web page under the "Additional Resources" tab:

https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Pages/NPDES_MS4_New.aspx

Special Announcement regarding the expiring NPDES General Permit for Small MS4s - General Discharge Permit No. 13-IM-5500:

- The general permit will expire on October 31, 2023. Federal regulations allow for administrative extension of permits under 40 CFR section 122.6. Therefore, after October 31, 2023, the general permit will be administratively extended and all permit conditions remain in effect. This includes submitting annual progress reports on October 31 of each year.
- The Department requested that permittees update their RAS to include continued restoration planning through 2030. Please provide specific information in the October 31, 2023 submission that describes your restoration capabilities through 2030. The Department will use this information to work with you in the coming year to develop a new general permit.

2023 NPDES MS4 Permit Annual Report

From: Deborah Cappuccitti -MDE- <deborah.cappuccitti@maryland.gov>
Sent: Thursday, October 5, 2023 10:01 AM
To: Edwards, Glenn D.
Cc: O'Meara, Janet L.; Hirt, Claire C.R.; Michelle L Crawford; Devon Kosisky -MDE-; hsmith@mountairymd.gov; bquinn@mountairymd.org
Subject: Re: Status of Phase II MS4 Permit - Town of Mount Airy

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Hi Glenn,

Thank you for the question. I am including our contacts at Mount Airy in this email.

We are getting ready to send out an email in this regard.

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We will be working on a new permit in the next year. With that, we had asked all permittees in the last annual report reviews to include planning for restoration out to 2030 (beyond 2025). Please include information on what is feasible for restoration for the next permit term. We asked that the Restoration Activity Schedules to be updated to show plans out to 2030. But we are happy to get a narrative of what the Town believes is possible for additional planning in the next permit.

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Debbie

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Thanks,

Glenn

2023 NPDES MS4 Permit Annual Report

From: O'Meara, Janet L.
Sent: Monday, July 17, 2023 3:25 PM
To: Heyn, Chris; Singer, Edwin F; Edwards, Glenn D.; Hirt, Claire C.R.
Subject: FW: MDE Review of Town of Mt. Airy's MS4 Program
Attachments: MtAiry PII review section CarrCo 2022 AR 7-17-23 MDE MS4.pdf

From: Michelle L Crawford -MDE- <michelle.crawford1@maryland.gov>
Sent: Monday, July 17, 2023 3:18 PM
To: David Warrington <dwarrington@mountairymd.gov>
Cc: Deborah Cappuccitti -MDE- <deborah.cappuccitti@maryland.gov>; Stewart Comstock -MDE- <stewart.comstock@maryland.gov>; Pat Depkin <pat.depkin@maryland.gov>; bquinn@mountairymd.gov; O'Meara, Janet L. <jomeara@carrollcountymd.gov>
Subject: MDE Review of Town of Mt. Airy's MS4 Program

This message originated outside of Carroll County Government. Use caution when opening attachments, clicking links or responding to requests for information.

Good afternoon,

Please see attached the Department's comments on the Town of Mt. Airy's MS4 Phase II activity progress reporting that was submitted as part of Carroll County's NPDES MS4 Phase I FY 2022 Annual Report. We are still finalizing the County's full review which will include this information, but we're passing along these comments to you now for your use.

MDE considers the Town of Mt. Airy in good standing and congratulates you on your many accomplishments and sincere efforts to comply with permit requirements.

If you would please reply indicating receipt of this email it would help for our records.

If you have questions please reach out to me through the contact information listed below.

Congratulations on your progress and thank you for your report,
Michelle

2023 NPDES MS4 Permit Annual Report

Hirt, Claire C.R.

From: Michelle L Crawford -MDE- <michelle.crawford1@maryland.gov>
Sent: Friday, September 16, 2022 11:55 AM
To: Hirt, Claire C.R.
Cc: Deborah Cappuccitti -MDE-; Pat Depkin; O'Meara, Janet L; Heyn, Chris; Edwards, Glenn D.; Singer, Edwin F
Subject: Re: Mt Airy Phase II Reporting Requirements

This message originated outside of Carroll County Government. Use caution when opening attachments, clicking links or responding to requests for information.

Good morning Claire,

My name is Michelle Crawford and I work with Debbie Cappuccitti administering the Phase II MS4 municipal general permit. Thanks for reaching out.

Yes, the Town may continue to report MS4 program activities in the County's Phase I MS4 annual report. The Town does not need to use the Appendix D forms. We included a standard comment in all Phase II reviews reminding permittees that we require reporting on the Minimum Control Measures every other year, and that next year this information is due. As you noted, Town activities are reported in the County's report each year.

In our last review we asked the next County annual report to include a separate section to more clearly summarize MCM activities specifically done within the Town, for example, indicate which outfall screenings were within the Town's boundaries and what is the strategy to prioritize outfall screenings in the Town.

For some of the programs it was reported clearly that efforts were being done Countywide including within the Town, such as staff training in pollution prevention to fulfill Minimum Control Measure 6. For Minimum Control Measure 2, we saw public participation events that occurred within the Town. However, it was unclear how some Phase II permit requirements were being fulfilled in partnership with the County.

If the report could please provide separate information and/or reference the annual report section that shows how the Countywide activities fulfill the Phase II permit requirements.

Please let me know if you have further questions.

I'm copying Pat Depkin the permit administrator for the County's Phase I permit and David Warrington the technical contact for the Town's permit.

Thank you,
Michelle



Deborah J. Cappuccitti
Senior Regulatory Compliance Engineer
Water and Science Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230
Deborah.cappuccitti@maryland.gov
410-637-3533 (O)
[Website](#) | [Facebook](#) | [Twitter](#)



Michelle Crawford
Natural Resources Planner
Stormwater, Dam Safety and
Flood Management Program
Water and Science Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230
michelle.crawford1@maryland.gov
410-537-3547 (O)
[Website](#) | [Facebook](#) | [Twitter](#)

2023 NPDES MS4 Permit Annual Report

Hirt, Claire C.R.

From: Hirt, Claire C.R.
Sent: Thursday, September 8, 2022 2:48 PM
To: Deborah Cappuccitti
Cc: David Warrington; Heyn, Chris; O'Meara, Janet L.; Singer, Edwin F; Edwards, Glenn D.
Subject: Mt Airy Phase II Reporting Requirements

Good Afternoon Debbie,

My name is Claire Hirt and I am one of the NPDES Compliance Specialists for Carroll County. In our Annual Review of the 2021 permit year, MDE provided comments to us related to the Mount Airy Phase II MS4 Permit. We wanted to check in with you for clarification on one of the points, which said:

As a reminder, the Phase II MS4 permit requires reporting for the six MCMs in the next year's (FY 2022) Progress Report. The Department is available to answer any questions as this information is prepared.

Will Mount Airy now be required to submit the Progress Report in Appendix D of the Phase II permit? It has been our understanding for some years now that the Phase II MCM requirements are being met through their collaboration with the County and that their reporting is already incorporated into our Phase I Annual Report. We reviewed our past correspondence with you and it seems to support this interpretation:

- Letter from Debbie Cappuccitti to David Warrington and Tom Devillbiss, 11/17/2019:
The Town and the County are requesting that reporting requirements for the [NPDES MS4 Phase II Permit] be met through the Carroll County MS4 annual report submissions. The Department has determined that the request is consistent with the provisions in the general permit and with past conversations.... The County has included reporting for numerous required programs in the Frederick side of Mt. Airy as part of the Carroll County Annual Report for many years. The joint request by the Town and the County will continue this effort and include the impervious area restoration reporting for the Frederick side of the Town as an Appendix in the County's report.
- Follow-up email from Debbie Cappuccitti to David Warrington and Gale Engles, 11/24/2019:
Carroll County has already been reporting on the required programs for the Town. Therefore, I wanted to clarify that the minimum control measure requirements in the permit are already being met through your partnership with the County and reported in their annual reports. This has been the case for several years now. The recent joint letter from the Town and County basically will allow the County to expand on that reporting to include documentation associated with the impervious area restoration requirement. I hope that clarifies that in general – the County is already meeting the Town's requirements for the MCMs through your existing partnership.

If acceptable, we would prefer to continue reporting all of our integrated MS4 efforts together in the annual report, with the Phase II Appendix capturing anything related to restoration progress on the Frederick County side of Mt. Airy. Please let us know your thoughts and expectations for reporting so we can support the Town as best as possible with their permit requirements. Thank you!

Sincerely,

Claire Hirt | NPDES Compliance Specialist
Bureau of Resource Management
Carroll County Government
225 N. Center Street
Westminster, MD 21157

2023 NPDES MS4 Permit Annual Report

Edwards, Glenn

From: Deborah Cappuccitti -MDE- <deborah.cappuccitti@maryland.gov>
Sent: Monday, September 14, 2020 3:49 PM
To: Edwards, Glenn
Cc: Heyn, Chris; publicworks@mountairymd.gov; David Warrington; Devilbiss, Thomas S.; Michelle L Crawford -MDE-; Pat Depkin -MDE-; Nora Howard -MDE-; Stewart Comstock -MDE-
Subject: Re: FW: Phase II MS4 General Permit Announcements

This message originated outside of Carroll County Government. Use caution when opening attachments, clicking links or responding to requests for information.

Hi Glenn,

You are correct. As long as Carroll County continues reporting for the Town then it is acceptable to provide this information when the County submits your annual report. We will offer confirmation in our review.

In the meantime, I am not sure if you received this email directly or not? Gail was our primary POC on the County's end. Let us know if you would like to add anyone to our PII contact information regarding this coordinated effort between the Town and the County?

Let us know if you need anything additional.

Debbie

On Mon, Sep 14, 2020 at 3:34 PM Edwards, Glenn <gedwards@carrollcountymd.gov> wrote:

Hi Debbie,

Please find attached MDE Review Letter and Final Review (Attachment 1) for Carroll County's 2019 Phase I MS4 Annual Report documenting Mt Airy's Phase II (Frederick County side) requirements have been met (see page 10/11 - CR 2019 AR Review final 07302020 pdf) by current MOU agreement. Per our understanding the October 31, 2020 Phase II Submission does not pertain to Mt Airy at this time.

Please confirm,

Thanks,

Glenn

2023 NPDES MS4 Permit Annual Report



Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

October 17, 2019

Mr. David Warrington
Town Administrator
Town of Mt. Airy
110 S. Main Street
P.O. Box 50
Mt. Airy, MD 21771

Mr. Thomas Devilbiss, Director
Department of Land & Resource Management
225 N Center Street
Westminister, MD 21157

Attention:

The Maryland Department of the Environment, Water and Science Administration (Department) has received a joint letter from the Town of Mt. Airy and Carroll County on October 15, 2019. The Town and the County are requesting that reporting requirements for the National Pollutant Discharge Elimination System (NPDES) General Permit No. 13-IM-5500 for Discharges from Small Municipal Separate Storm Sewer Systems (MS4) be met through the Carroll County MS4 annual report submissions. The Department has determined that the request is consistent with the provisions in the general permit and with past conversations.

Under the conditions of the MS4 general permit, any permittee may enter into an agreement with another State, federal, or municipal partner to satisfy one or more of the permit obligations. The County has included reporting for numerous required programs in the Frederick side of Mt. Airy as part of the Carroll County Annual Report for many years. The joint request by the Town and the County will continue this effort and include the impervious area restoration reporting for the Frederick side of the Town as an Appendix in the County's report.

The Department recognizes the significant effort necessary to implement a stormwater program and commends both the Town of Mt. Airy and Carroll County for its partnership to efficiently and effectively meet permit requirements. If you have any questions on this correspondence, please contact me at Deborah.Cappuccitti@Maryland.gov or 410-537-3533.

Sincerely,

A handwritten signature in black ink, appearing to read "Deborah J. Cappuccitti".

Deborah J. Cappuccitti
Senior Regulatory Compliance Engineer
Water and Science Administration

Attachment

1800 Washington Boulevard | Baltimore, MD 21230 | 1-800-633-6101 | 410-537-3000 | TTY Users 1-800-735-2258

www.mde.maryland.gov

2023 NPDES MS4 Permit Annual Report

Mount Airy Phase II

MDE EMAIL October 24, 2019 - Follow Up to October 17, 2019 Letter

From: Engles, Gale J.

Sent: Thursday, October 24, 2019 9:21 PM

To: Edwards, Glenn <gedwards@carrollcountymd.gov>; O'Meara, Janet L. <jomeara@carrollcountymd.gov>

Subject: Fwd: [External E-mail] Fwd: NPDES Phase II MS4 Compliance

FYI

Gale

Sent from my iPhone

Begin forwarded message:

From: Deborah Cappuccitti -MDE- <deborah.cappuccitti@maryland.gov>

Date: October 24, 2019 at 10:51:40 AM EDT

To: David Warrington <dwarrington@mountairymd.gov>, "Engles, Gale J." <gengles@carrollcountymd.gov>

Cc: Michelle L Crawford -MDE- <michelle.crawford1@maryland.gov>, Stewart Comstock -MDE- <stewart.comstock@maryland.gov>

Subject: [External E-mail] Fwd: NPDES Phase II MS4 Compliance

Hi David,

I am responding to your request to Ray Bahr regarding information on developing minimum control measures for the Town of Mt. Airy under the Phase II general permit.

The letter I forwarded to yourself and Gale Engles on Monday (also attached) indicates that Carroll County has already been reporting on the required programs for the Town. Therefore, I wanted to clarify that the minimum control measure requirements in the permit are already being met through your partnership with the County and reported in their annual reports. This has been the case for several years now. The recent joint letter from the Town and County basically will allow the County to expand on that reporting to include documentation associated with the impervious area restoration requirement. I hope that clarifies that in general - the County is already meeting the Towns requirements for the MCMs through your existing partnership.

If you feel you need additional information, please let us know.

Debbie

2023 NPDES MS4 Permit Annual Report



Town of Mt. Airy
110 S Main Street
P.O. Box 50
Mt. Airy, MD 21771



Department of Land &
Resource Management
225 N Center Street
Westminster, MD 21157

October 15, 2019

Maryland Department of the Environment
Attn: Deborah Cappuccitti
Senior Regulatory Compliance Engineer
Water and Science Administration
1800 Washington Blvd.
Baltimore, Maryland 21230

Re: Phase II Frederick County Side of Mt. Airy
Reporting Mechanism

Dear Ms. Cappuccitti:

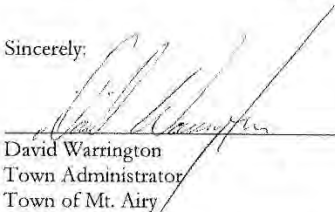
During the July 3, 2019 meeting with Carroll County staff and yourself, discussions relating to annual reporting associated with the Phase II Frederick County side of Mt. Airy took place. We are writing this letter to provide you with our intentions on how we will be addressing Part VI.C. of the NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems requirement.


In December of 2014, the Town of Mt. Airy, Carroll County and the seven (7) other municipalities within the County entered into a Memorandum of Agreement (MOA) relating to the NPDES MS4 Phase I requirements covering the portion of the town which is located within Carroll County. Concurrent with the issuance of the next generation permit, a new MOA will be executed with a section included pertaining to the Frederick County side of Mt. Airy and how restoration efforts will be handled. In Carroll County's 2019 Annual Report, there will be an Appendix added to specifically address the various sections of the NPDES Phase II permit not currently being addressed in the document itself.

Numerous programs specified in the general permit are currently being performed by Carroll County (i.e. stormwater management, sediment control (inspection and enforcement), IDDE inspections, public information and education, etc.) and have and will continue to be reported in Carroll County's Annual Reports. Impervious acreage baseline, restoration planning and implementation, BMP tracking and maintenance will be included in the new Appendix. Engineering and construction costs associated with the Phase II requirement will be handled through the Town's Annual Capital Improvements Budget.

Thank you for working with us on our reporting requirements and please feel free to contact Gale Engles (Carroll County) with any questions or if you need additional information.

Sincerely,


David Warrington
Town Administrator
Town of Mt. Airy


Thomas S. Devilbiss, Director
Department of Land and Resource Management
Carroll County

cc: Gale Engles, Bureau Chief
Resource Management

2023 NPDES MS4 Permit Annual Report



Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor
Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

November 29, 2018

Ms. Monika Weierbach, Town Administrator
Town of Mount Airy
P.O. Box 50, 110 South Main Street
Mount Airy, MD 21771

RE: Notice of Intent Approval letter

Dear Town Administrator Weierbach:

The Maryland Department of the Environment (Department), Water and Science Administration has issued a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (General Discharge Permit No. 13-IM-5500, General NPDES No. MDR055501). The legal framework for permit requirements is provided in the federal Clean Water Act (CWA), Title 40 of the Code of Federal Regulations (CFR) § 122 pertaining to NPDES MS4 programs. Regulated MS4 operators identified in the general permit were required to seek authorization to discharge stormwater by submitting a Notice of Intent (NOI) to the Department by October 31, 2018.

This is to confirm that the Department has received a completed NOI from the Town of Mount Airy (the Town) in accordance with permit requirements. The Town is required to comply with the conditions of the general permit until it expires, which is in five years unless administratively continued by the Department. Submission of annual progress reports may be achieved through the existing partnership with Carroll County. Otherwise, the Town will be responsible for reporting compliance with permit conditions for activities located within the jurisdictional boundary inside Frederick County.

Thank you for your cooperation in submitting your NOI. The Department looks forward to working with you to achieve compliance with the permit and contribute to efforts to improve local water quality and restore the Chesapeake Bay. If you have any questions, please contact me at 410-537-3550 or Ms. Deborah Cappuccitti at deborah.cappuccitti@maryland.gov.

Regards,

A handwritten signature in black ink, appearing to read 'Stewart R. Comstock'.

Stewart R. Comstock, P.E.
Program Review Division Chief
Sediment, Stormwater, & Dam Safety Program, WSA

1800 Washington Boulevard | Baltimore, MD 21230 | 1-800-633-6101 | 410-537-3000 | TTY Users 1-800-735-2258

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2023 NPDES MS4 Permit Annual Report



Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor
Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

April 27, 2018

Ms. Monika Weierbach, Town Administrator
Town of Mount Airy
PO Box 50
Mount Airy, MD 21771

RE: Designation Letter

Dear Ms. Weierbach:

The Maryland Department of the Environment (the Department), Water and Science Administration has reached a Final Determination to issue a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (General Discharge Permit No. 13-IM-5500, General NPDES No. MDR055500). The legal framework for permit requirements is provided in the federal Clean Water Act (CWA), Title 40 of the Code of Federal Regulations (CFR) § 122 pertaining to NPDES MS4 programs, and numerous guidelines of the United States (U.S.) Environmental Protection Agency (EPA). MS4 owners or operators required to obtain coverage under this MS4 general permit are those located within urbanized areas or other MS4s designated by the Department under authority of the CWA and CFR.

You are receiving this letter because all or part of the Town of Mount Airy (the Town) has been identified as being located within an urbanized area according to the 2010 U.S. Census. Your MS4 within the urbanized area will come under the purview of the CWA's stormwater permitting requirements in accordance with 40 CFR § 122.32(a)(1). As stated in the Federal Register (Vol. 64, No. 235, 68750), in situations where an incorporated place or a town is not all in an urbanized area, it makes sense to develop a stormwater program for the whole area.

The MS4 general permit will become effective on October 31, 2018. As an owner or operator of a designated MS4 to be regulated under this general permit, the Town must submit a Notice of Intent (NOI) to the Department by the effective date. An NOI serves as notification that the Town intends to comply with the terms and conditions of this general permit. Conditions of the general permit are effective for a five-year term unless administratively continued by the Department.

The MS4 general permit requires implementation of stormwater management programs and restoration actions to control the discharge of pollutants from regulated MS4s. Compliance with the general permit will reduce stormwater pollutants to local waterways and the Chesapeake Bay. Furthermore, pollution reductions from the Town are necessary to comply with the assumptions and requirements of the Chesapeake Bay Total Maximum Daily Load. Restoration requirements are based on untreated impervious areas located within the Town's urbanized area. The general permit,

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2023 NPDES MS4 Permit Annual Report

Ms. Monika Weierbach, Town Administrator
April 27, 2018
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however, allows flexibility to implement restoration projects and management programs across the entire incorporated area of the Town.

The Department has complied with public participation requirements established under Maryland's Administrative Procedures Act in order to reach this Final Determination. The Department has met with numerous stakeholders, held a public hearing, and accepted public comments from December 22, 2016, through March 30, 2017. The Final Determination, MS4 general permit, and the comments submitted during the public comment period may be found on the Department's website at: www.mde.maryland.gov/programs/Water/StormwaterManagementProgram. Additional resources related to stormwater program implementation and restoration planning may also be found on the website.

Thank you for your cooperation in reviewing this MS4 general permit and planning activities that will result in full program implementation by the end of the permit term. Compliance with the general permit will support Maryland's broader goals of improving local water quality and contribute to long standing efforts to restore the Chesapeake Bay. The Department looks forward to working with you to achieve these goals. If you have any questions, please contact me at 410-537-3567 or Ms. Jennifer Smith at 410-537-3543 or jenniferm.smith@maryland.gov.

Regards,



D. Lee Currey
Director, Water and Science Administration

Pollution Prevention Good Housekeeping and IDDE Guidance and Procedures for Mount Airy Phase II MS4 Permit



CARROLL COUNTY MS4 PROPERTY MANAGEMENT AND MAINTENANCE RESOURCE GUIDE

*Municipal Stormwater Pollution Prevention Guidance
for MS4 Co-Permittee Personnel*



Carroll County Department of Land and Resource Management

March 20, 2017

CC MS4 PROPERTY MANAGEMENT AND MAINTENANCE RESOURCE GUIDE

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CARROLL COUNTY MS4 POLLUTION PREVENTION MAINTENANCE BMP GUIDANCE MANUAL

*A Guidance Manual
For Carroll County Government
and Municipalities of
Carroll County, Maryland*



Carroll County Department of Land and Resource Management

Revision: November 17, 2016

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ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

*A Guidance Manual
For Carroll County Government
and Municipalities of
Carroll County, Maryland*



Carroll County Department of Land and Resource Management

Revision: November 10, 2016

2023 NPDES MS4 Permit Annual Report

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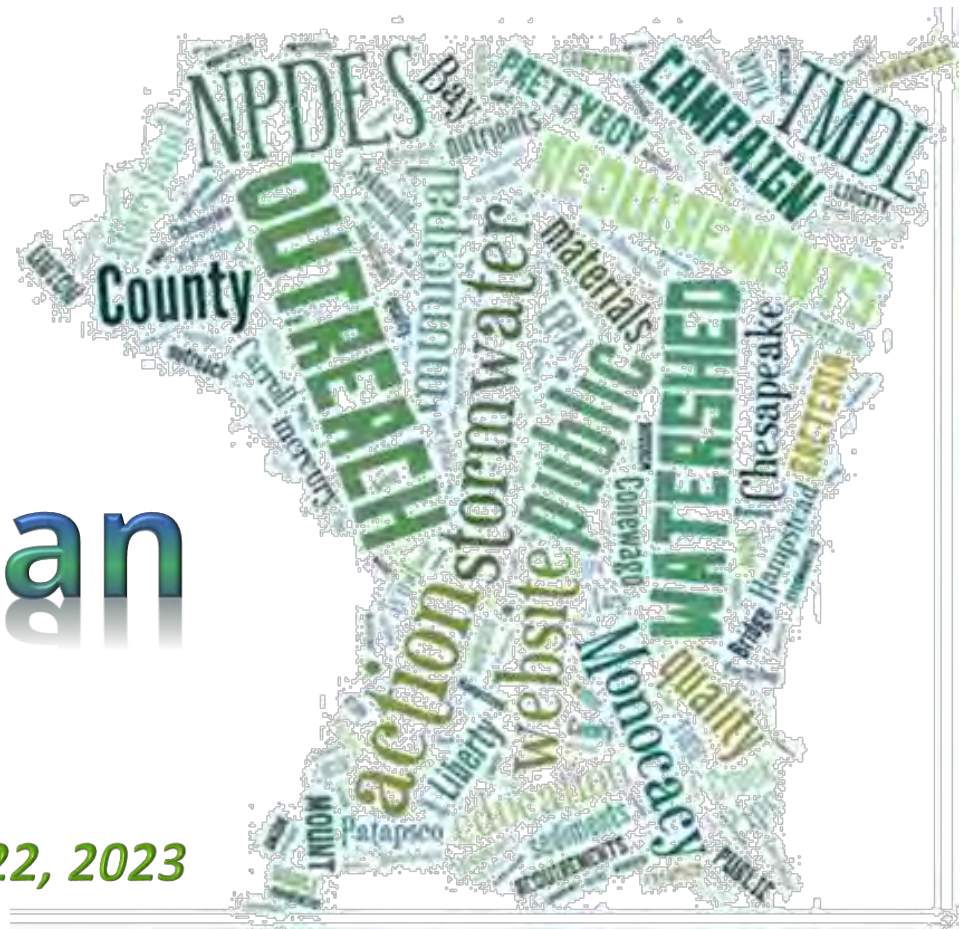
Appendix I

Carroll County NPDES MS4 Public Outreach Plan

2023 NPDES MS4 Permit Annual Report

Carroll County & Municipalities NPDES MS4 Public Outreach Plan (POP)

*Adaptive Plan for
5th-Generation
Permit Issued*



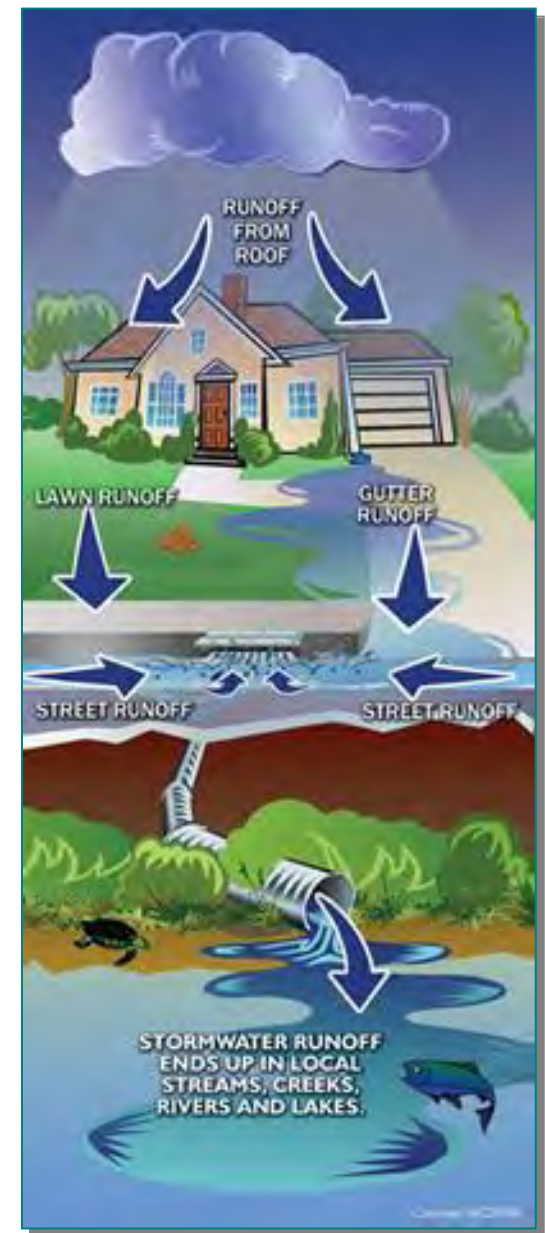
November 22, 2023

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This is an iterative, adaptive plan intended to continually change as items are completed, new items added, and/or information is updated. The working draft will be submitted with the first-year annual report. Thereafter, as programs and activities are implemented, they will be reported in the Annual Report.



EXECUTIVE SUMMARY

Introduction. Carroll County and its eight municipalities – Hampstead, Manchester, Mount Airy, New Windsor, Sykesville, Taneytown, Union Bridge, and Westminster – are co-permittees on the County’s fifth-generation National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) permit, issued December 30, 2020. The primary driver of this public outreach plan is, first and foremost, compliance with the NPDES MS4 permit.

Plan Purpose. This plan provides a review of the public outreach opportunities currently available to residents and businesses in Carroll County and the municipalities regarding specific requirements of the permit and related stormwater program activities. As a result of this review, activities are suggested to round out those opportunities and improve outreach. The intent is to raise public awareness and encourage residents and businesses to take measures to reduce and prevent stormwater pollution.

Goals. In addition to the goal of compliance with the NPDES MS4 permit, the goals address two different areas: actions the permittees can take to improve the public outreach campaign and raising public awareness in such a way as to engage the public to elicit action.

Goal 1: To provide 25 outreach efforts per year in compliance with the NPDES MS4 permit.

Goal 2: To build upon the County’s current public education and outreach program with the intent of fostering a more cohesive and

function-based approach that results in easier access and broader dissemination of information.

Goal 3: To raise public awareness of stormwater pollution, prevention measures, their benefits and importance, and to provide activities in which residents and businesses can engage to further reduce and prevent stormwater pollution and runoff.

Objectives.

- Continue to collaborate with co-permittees
- Continue to deliver an effective Reduce/Reuse/Recycle public outreach campaign.
- Continue to provide educational materials focused on reducing the amount of litter.
- Continue to improve and foster the Adopt-a-Road campaign.
- Increase awareness of compliance hotline availability and improve access.
- Continue to offer opportunities and materials for increased public awareness and access to permit-related, water quality information.
- Educate businesses about permit requirements, good housekeeping measures, and pollution prevention.
- Provide opportunities for public participation during the update of TMDL stormwater implementation plans.
- Continue to build or improve existing partnerships between the County and other entities to promote action, awareness, and recognition.

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- Explore concept of a partnership between the County and the business community to promote action, awareness, and recognition.
- Foster opportunities for community engagement in activities and volunteer opportunities that promote environmental stewardship.

Areas of Public Outreach. Three areas of the permit require public outreach and education. PART IV.D.4.d.ii. Property Management & Maintenance requires outreach to homeowners regarding best salt management practices. PART IV.D.5. Public Education requires a public outreach program to provide information to the general public. PART IV.F.4. requires public participation in the TMDL implementation plan update process.

Current Programs & Activities. Carroll County and the municipalities already implement an extensive public outreach program to address many of these objectives and requirements. Program activities include websites, materials, events, a hotline, media, social media, and work with several councils on public outreach and coordination. An extensive recycling outreach campaign and materials are in place as well.

Target Audience. The permit requires outreach to County and municipal staff and the general public. With regard to the regulated community, outreach efforts will focus on businesses at a higher risk for stormwater pollution or potential illicit discharges. Emphasis will be placed on homeowners and school students to further efforts to reach the general public. Colleges will benefit from the same good housekeeping measures appropriate for businesses.

The Message. Public outreach efforts will focus on the topics prescribed by the permit. The varied audiences and issues may

require different messages to fit different needs. In general, the County wants to convey to the target audiences that it seeks a voluntary approach to addressing potential problems and implementing good housekeeping measures. The County would like to provide support to and, where appropriate, partner with stakeholders to help them understand what the issues are, why they are important, their relevance to individuals and businesses, and the benefits to implementing best management and good housekeeping measures.

The Method & Means. **The County's primary efforts will be, first and foremost, to continue those current successful programs, activities, and materials.** Additional specific activities to meet the objectives include, but are not limited to, promoting a social media presence with which to reach a greater audience, exploring new media for conducting workshops for both businesses and the general public, updating the self-inspection checklist for businesses, and further developing the public outreach materials and opportunities.

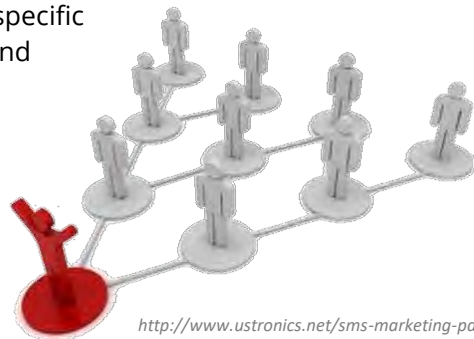
CHAPTER 1: BACKGROUND

1. BACKGROUND

1.1. Purpose

Carroll County and its eight municipalities – Hampstead, Manchester, Mount Airy, New Windsor, Sykesville, Taneytown, Union Bridge, and Westminster – are co-permittees on the County's fifth-generation National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) permit, issued December 30, 2020. Therefore, the requirements of the permit apply to the municipalities as well as the County. Any references in this plan to the "County" regarding requirements of the permit apply to the county's municipalities as well. Efforts by all nine jurisdictions collectively apply to addressing permit requirements.

This plan provides a review of the public outreach opportunities currently available to residents and businesses in Carroll County and the municipalities regarding specific requirements of the permit and related stormwater program activities. As a result of this review, activities are suggested to supplement those opportunities and improve outreach. The intent is to raise public

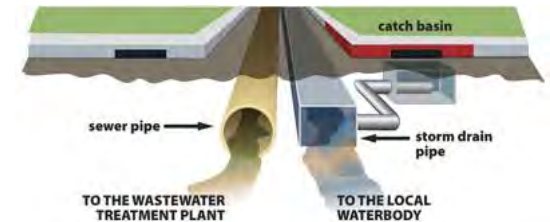


<http://www.ustronics.net/sms-marketing-payad/>,
July 2, 2015

awareness and encourage residents and businesses to take measures to reduce and prevent stormwater pollution.

The Carroll County Department of Planning & Land Management (PLM) is responsible for permit administration, the majority of permit-related operational activities, and oversight and management of the design and construction of stormwater mitigation projects.

It should be noted that this plan, as indicated in the permit, is a dynamic document. The iterative nature of the process means that the contents of the plan need to be



flexible and subject to change based on current and completed activities, progress, and evaluations. This plan does not represent a specific commitment to implement the objectives and/or suggested programs and activities within, but rather is a guide for how to proceed based on current circumstances.

1.2. Driving Forces

1.2.1 National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) Permit

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In 1972, Congress passed the Clean Water Act. This law was developed to control water pollution from wastewater discharges and stormwater runoff. Beginning in 1990, the U.S. Environmental Protection Agency (EPA) required large municipalities, certain industrial facilities, and construction sites to obtain NPDES permits for stormwater discharges. Phase I permits are required of larger jurisdictions, generally with a population of 100,000 or greater. The County holds a National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System permit, or "NPDES Phase I MS4." This permit is an individual permit with requirements specific to Carroll County. While smaller jurisdictions and municipalities are typically subject to a general permit, called an NPDES Phase II MS4 permit, Carroll's eight municipalities officially became co-permittees on the County's permit on December 29, 2014, the date when the County's fourth-generation permit was issued.

In Maryland, EPA has delegated authority to the Maryland Department of the Environment (MDE) for permit administration and enforcement. EPA has retained permit review and approval authority, as well as additional enforcement authority. The overall NPDES MS4 permit for Carroll County and its municipalities is administered through PLM.



Impervious surfaces are areas through which water cannot penetrate such as pavement, buildings, and even compacted soils on driveways and parking lots. The draft fifth-generation permit requires restoration of 1,271 impervious acres that have not been treated to the maximum extent practicable (MEP) by implementing stormwater best management practices (BMPs), programmatic initiatives, or alternative control practices. The fourth-generation permit required reduction and treatment, or "mitigation," of stormwater runoff on an additional 20 percent of untreated impervious surfaces. This was an increase beyond the 10 percent required for the unincorporated areas of the County in the third-generation permit, for a total of 30 percent.

The County has developed a very comprehensive, active NPDES restoration effort via the addition of appropriate staff and capital funding. The approval of staffing and funding by the Board of County Commissioners confirms the commitment to water quality protection and enhancement by the County and its municipalities.

Among the many requirements contained in the permit, public education and outreach is expected to continue to be implemented and integrated with other aspects of the County's activities. The public outreach and education campaign is intended to raise public awareness of stormwater pollution and its effects, the benefits of management and mitigation practices to minimize its impacts, and activities in which homeowners can engage to help the County address and comply with its permit and pollution reduction requirements. ***The primary driver of this public outreach plan is, first and foremost, compliance with the NPDES MS4 permit.***

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1.2.2. Memorandum of Agreement: Carroll County and Municipalities

County staff has been implementing projects to address the Phase I permit requirements. However, the majority of impervious surfaces are concentrated around municipalities. Since watersheds do not follow jurisdictional boundaries, joint projects have resulted in “credit” for the County as well as the municipalities. Project costs per acre decrease when more impervious surface can be treated per project. By becoming co-permittees, more options for location of projects become available, and the County and municipalities both benefit by receiving “credit” for areas treated regardless of the location.

On October 23, 2014, the Board of County Commissioners and all eight of Carroll County’s municipalities officially agreed to share the cost of joint stormwater mitigation projects. A Memorandum of Agreement (MOA) signed by the Board and all eight mayors provided the framework for the County and municipalities to become co-permittees on the County’s federal stormwater permit. This agreement was reaffirmed on October 7, 2021. At that time, the MOA was also revised to be effective in perpetuity, or until the parties agree to discontinue it. The municipal costs associated with the MOA will be revisited regularly.

The MOA establishes administrative responsibilities, including the construction, inspection, and maintenance of stormwater mitigation projects. The MOA also outlines how costs will be shared. The County will pay 80 percent of the capital costs for the projects needed to address the municipalities’ 20 percent of untreated

impervious area. The revised MOA was in effect prior to MDE issuing the fifth-generation permit and will continue in perpetuity.

The County has been budgeting for and implementing these projects for numerous years, and anticipated the increased treatment requirements that the fourth-generation permit included; however, although anticipated and expected, the specific requirement to treat 20 percent of untreated impervious surfaces was new for the municipalities. With the MOA having been in place before the issuance of the fourth-generation permit, the County and municipalities were able to effectively meet the restoration and treatment requirements of that permit. The MOA continues to support the restoration requirements of the fifth-generation permit.

Using the Carroll County Water Resources Coordination Council (WRCC) as the forum for discussing and developing the MOA, County and municipal staff collaborated to develop this forward-thinking agreement. Carroll is among a few jurisdictions across the country with such an agreement, demonstrating the benefits and efficiency that can result from such a long-standing working and cooperative relationship.

For more information on the WRCC or to view a copy of the MOA, visit the WRCC’s webpage at www.carrollcountymd.gov/government/boards-commissions/water-resource-coordination-council/.



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The **Water Resources Coordination Council**, or WRCC, was formed in March 2007 by a non-binding joint resolution (#697-07) between the County, municipalities, and Carroll County Health Department. The WRCC provides a mechanism for cooperative problem solving of critical water resource management issues facing the County and municipalities. The WRCC fosters discussion between jurisdictions in order to develop regional (watershed) or countywide approaches to policies, procedures, and solutions regarding water resource development and protection. The WRCC offers a forum for the dissemination of ideas, solutions, and cost-saving approaches to water resource development and protection in Carroll County. These meetings are held monthly and are open to the public, with agendas posted on the County website.

1.2.3. Total Maximum Daily Loads (TMDLs)

Permit Part III.2. requires the permittee to attain applicable stormwater WLAs for each established or approved TMDL for each receiving water body.

Permit Part IV.E requires stormwater controls to reduce the discharge of pollutants to the *maximum extent practicable* (MEP). By regulation 40 CFR §122.44, BMPs and programs implemented pursuant to this permit must be consistent with applicable stormwater wasteload allocations (WLAs) developed under EPA-approved TMDLs.

1.2.3.1. Chesapeake Bay Restoration & Maryland Watershed Implementation Plans (WIP)

In 1998, the Chesapeake Bay and many of its tidal tributaries were added to the State's list of impaired waters (known as the 303(d) list),

thus requiring the development of a TMDL to comply with the Clean Water Act.

TMDLs for the Chesapeake Bay were established by EPA in December 2010. All states in the Chesapeake Bay watershed were then required to develop a plan to show how these limits would be achieved. In Maryland, nitrogen, phosphorous, and sediment (total suspended solids) are the pollutants addressed by the Bay TMDLs. This meant that MDE had to identify strategies for reducing the current levels of these pollutants entering the Bay. Through this process, pollutant load targets were developed by river segment, by source type (called "sector"), and by county. Maryland's Phase I WIP outlined the reduction requirements and general strategies to be implemented by the State to achieve the reduction goals. It also set final target loads that provided EPA information to establish TMDL allocations and set interim target loads. Maryland's Phase II WIP detailed more specific strategies to be taken by providing more geographic specificity regarding target loads. Lastly, Maryland's Phase III WIP was developed after the 2017/18 Midpoint Assessment to address the remaining reductions needed to achieve TMDLs by 2025. It identifies strategies, opportunities, and challenges to meet the 2025 restoration targets and sustain restoration into the future. Through the WIPs, MDE committed to EPA to increase requirements in the permits (administered by the State) to clean up stormwater runoff. This was one strategy that led to the increased stormwater mitigation requirements.

More info about the Bay TMDL can be found on the EPA website at www.epa.gov/chesapeakebaytmdl/. TMDLs require a very specific implementation plan, with "reasonable assurances" (e.g., enforceable permit limits) that pollutant load allocations will be achieved.

TMDL stands for **Total Maximum Daily Load**. A load refers to the amount of a given type of pollutant found in a body of water coming from all sources. Simply put, the TMDL itself is the highest amount of a pollutant that a body of water can accept from all sources and still meet water quality standards.

An impairment is identified when water quality monitoring data suggest that a waterbody (river, lake, estuary, or ocean) does not meet, or is not expected to meet, water quality standards. Maryland water quality standards have been adopted per the Federal Clean Water Act, Section 101, to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Individual standards are established to support the beneficial uses of water bodies, such as fishing, aquatic life, drinking water supply, boating, water contact recreation, as well as terrestrial wildlife that depend on water.

To set a TMDL, pollution from sources throughout the watershed are calculated and portions assigned, or “allocated,” to the various contributing sources. The portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution (e.g., permitted waste treatment facilities, stormwater sources, etc.) is referred to as the **wasteload allocation** (WLA). The WLA is less than the existing load, with the difference being the amount the pollutant needs to be reduced.

1.2.3.2. Local TMDLs

When a waterbody is listed, the cause (pollutant) and the priority of the impairment are identified. Waters scheduled for TMDL

development in the next two years are also identified in the list. The local TMDLs set prior to the issuance of the fifth-generation permit can be found on the map titled “Carroll County, MD Local TMDLs and Watershed Boundaries” on Page 7.

More information on TMDLs in Maryland can be found on MDE’s website at:

[https://mde.maryland.gov/programs/water/tmdl/pages/index.aspx#:~:text=Total%20Maximum%20Daily%20Loads%20\(TMDLs,the%20conditions%20of%20its%20waters.](https://mde.maryland.gov/programs/water/tmdl/pages/index.aspx#:~:text=Total%20Maximum%20Daily%20Loads%20(TMDLs,the%20conditions%20of%20its%20waters.)

1.3. Carroll County Watersheds

At the most basic level, a watershed is the total land area that drains rainfall and snowmelt into a common body of water. Because of the nature of gravity, watersheds (also known as drainage or catchment basins) are confined by their surrounding topography. Water originates at the highest point and drains downhill to the lowest ground area. As one waterbody flows into another, the flows gradually increase in size. A small spring turns into a run and progressively merges with ever-larger creeks, streams, and rivers.

Ultimately, these flows collect into the largest water bodies, such as the Chesapeake Bay, and eventually feed into the world’s oceans.

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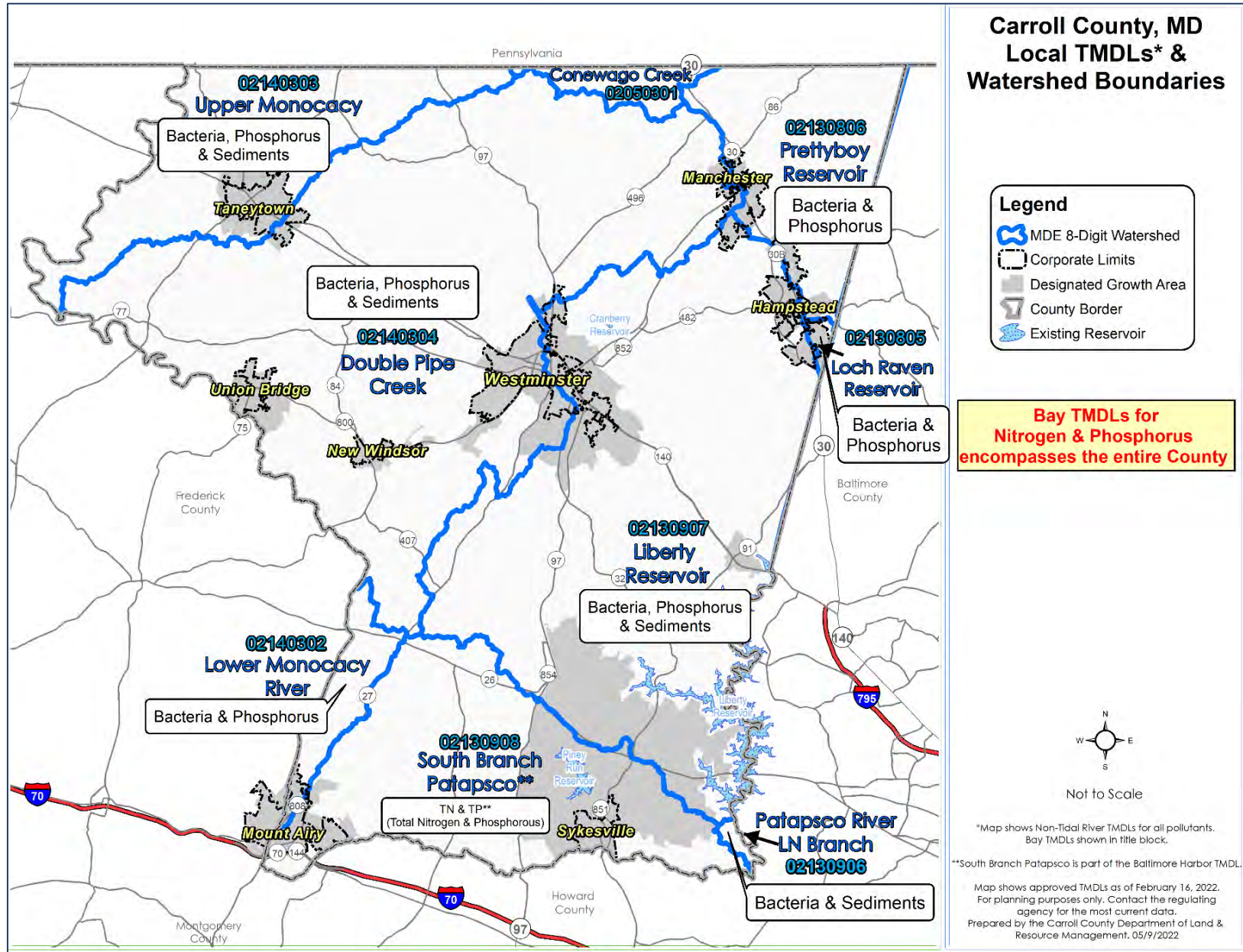
Watersheds can be defined at many different scales. The United States Geological Survey (USGS) developed a ranked system for mapping all of the national's watersheds. They are grouped from largest to smallest and are assigned a code based on size. Currently, Carroll's local TMDLs are set based on Maryland's system of 8-digit watersheds.

While the TMDLs for the Chesapeake Bay address nutrients and sediment pollution in the Bay, TMDLs have also been developed for local watersheds that address a broad spectrum of pollutants. These include nutrients, sediment, and bacteria. The permit requires that progress is made toward achieving the local TMDLs in addition to the Bay TMDLs.

Along with the local TMDLs in each watershed, the map titled "Carroll County Local TMDLs and Watershed Boundaries" depicts the nine 8-digit watersheds found wholly or partially in Carroll County. Watersheds throughout the county eventually drain to the Chesapeake Bay. Additional watershed maps and information regarding each individual watershed can be found on the Protecting Carroll County Waters (NPDES) website at [under "Watershed Restoration Plans"](https://www.carrollcountymd.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/watershed-restoration-plans/) (www.carrollcountymd.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/watershed-restoration-plans/).



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CHAPTER 2: OVERALL GOALS & GENERAL OUTCOMES

2. OVERALL GOALS & GENERAL OUTCOMES

2.1. Overall Goals

This plan is intended to move the County and municipalities toward two general goals. The first goal is aimed at improving the County's public outreach program, with the second goal being an off-shoot of these program improvements, which is related to public perceptions and activities. The more individual property owners can do to reduce and prevent stormwater pollution, the more effective and efficient the County's stormwater program will be.

2.2. General Outcomes & Objectives

The goals of this plan address two different areas: actions the permittees can take to improve the public outreach campaign and engaging the public to elicit action through raising public awareness.

Goal 1: To build upon the County's current public education and outreach program with the intent of fostering a more cohesive and function-based approach that results in easier access and broader dissemination of information.

Goal 2: To raise public awareness of stormwater pollution and prevention measures, their benefits and importance, and to provide activities in which residents and businesses can engage to further reduce and prevent stormwater pollution and runoff.

The objectives that follow are based on the goals of this plan and result from a review of the current programs and activities in place. More specific activities or products to achieve these objectives are outlined in Chapter 7. The Method & Means (*Suggested Programs and Activities*).

- Continue to deliver effective Reduce/Reuse/Recycle public outreach campaign.
- Continue to provide educational materials focused on reducing the amount of litter.
- Continue to improve and foster the Adopt-a-Road campaign.
- Continue to promote the compliance hotline availability and improve access.
- Continue to offer opportunities and materials for increased public awareness and access to permit-related, water quality information.
- Educate businesses about permit requirements, good housekeeping measures, and pollution prevention.
- Provide opportunities for public participation during the updates to TMDL stormwater implementation plans.
- Continue to build or improve partnerships between the County and other entities to promote action, awareness, and recognition.
- Explore concept of a partnership between the County and the business community to promote action, awareness, and recognition.

CHAPTER 3: CURRENT PROGRAMS & ACTIVITIES

3. CURRENT PROGRAMS & ACTIVITIES

Three areas of the permit require public outreach and education. PART IV.D.4.d. requires developing and distributing best salt management practices outreach for education homeowners. . PART IV.D.5. PUBLIC EDUCATION requires a public outreach program to provide information to the general public, with a minimum of 25 outreach efforts per year. PART IV.F.4. requires continual outreach to the public and other stakeholders regarding TMDL stormwater implementation plans.

Carroll County and the municipalities already implement an extensive public outreach program to address many of these issues. This chapter, as well as Chapter 7: Suggested Program and Activities, addresses each of these areas and summarizes the programs and activities currently in place.

3.1. Management Programs, Public Education: General Public

As part of the public education program described in PART IV.D.5., the permit requires the County to develop and implement a public education and outreach program. Outreach efforts may be integrated with other aspects of the County and municipal activities. This shall include the benefits of: (PART IV.D.5.c.)

- ♦ increasing water conservation,
- ♦ Residential and community stormwater management implementation and facility maintenance,
- ♦ Proper erosion and sediment control practices,
- ♦ Increasing proper disposal of household hazardous waste,
- ♦ Improving lawn care and landscape management (e.g., proper use of herbicides, pesticides, and fertilizers, ice control and snow removal),
- ♦ Property residential car care and washing,
- ♦ Litter reduction,
- ♦ Reducing, reusing, and recycling solid waste, and
- ♦ Proper pet waste management.

The fifth-generation permit requires the County to conduct a minimum of 25 outreach efforts per year. These efforts may include distributing printed materials such as brochures or newsletters; electronic materials such as website pages; mass media such as newspaper articles or public service announcements (radio or television); and conducting targeted workshops on stormwater management for the public.

These efforts are to be documented and summarized in each annual report. For specific, individual activities, see the most recent NPDES MS4 [annual report](#).

3.1.1. ***Hotline***

The permit also requires the County to maintain a compliance hotline or similar mechanism for public reporting of water quality

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complaints. Individuals are encouraged to report any evidence of illicit discharge, spills, or illegal dumping. Citizens can call the non-emergency Carroll County stormwater pollution phone line (hotline) at 410-386-2210.

The hotline is easy to find on the website and explains the purpose of the hotline. The hotline number has been added to many outreach materials. The municipalities also either provide the hotline number on their individual websites or provide a link to the County website. It is also included in the Resource Management quarterly newsletter, and the municipalities often include it in their newsletters as well.

3.1.2. Website

Carroll County Department of Planning & Land Management hosts several webpages that provide information and materials to local residents and businesses.

PLM hosts a dedicated NPDES webpage entitled “Protecting Carroll County Waters (NPDES)”



(www.carrollcountymd.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/), which is now the primary hub for information related to the NPDES MS4 permit.

The website provides a multitude of information and includes the permit and Memorandum of Agreement between co-permittees. The website includes links to the following pages, which are located either within the updated Protecting Carroll County Waters website or under the Bureau of Resource Management website:

- *Stormwater Pollution Hotline:* This page contains the non-emergency stormwater pollution hotline phone number, as well as the emergency contacts for each public water and sewer system. There is a quick link to this page from the main webpage, and the municipalities provide a link to this page from their municipal websites.
- *NPDES Permit:* This page contains the permit that is currently in effect for Carroll County and its municipal co-permittees.
- *Annual Reports:* NPDES MS4 Annual Reports for the past five years are available.

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- *Financial Assurance Plans (FAPs) | Watershed Protection and Restoration Program (WPRP) Annual Reports:* FAPs are submitted to MDE every other year. WPRP Annual Reports are submitted to MDE annually.
- *Watershed Restoration Plans:* The Bureau of Resource Management (BRM) hosts this page, titled “Watersheds.” It includes the characterization plan for each of Carroll’s nine watersheds, along with each stream corridor assessment.
- *Stormwater Projects:* An interactive map provides information on planned, active, and completed stormwater projects.
- *Public Outreach:* This page describes actions the average property owner may take to help prevent stormwater runoff pollution. Carroll County public outreach publications may be found here, along with outreach videos and workshop information.
- *Carroll Clean Water Partnership:* Information is provided on this voluntary partnership program that encourages and recognizes local businesses to/that identify and address potential pollutants and good housekeeping measures.
- *Links | Resources:* Links to additional information on the web regarding various aspects of the permit, stormwater pollution prevention, public outreach, and more are provided.

Educational materials for both kids and homeowners are available for viewing or download from the Public Outreach page. The Best Management Practices (BMP) webpage describes the various agricultural and urban BMPs. The Bureau of Resource Management’s quarterly newsletter, *Down to Earth*, includes educational information and reporting on stormwater activities and program implementation. (See an excerpt from newsletter on Page 13).

The Carroll County Environmental Advisory Council’s (EAC) website (www.carrollcountymd.gov/government/boards-



commissions/environmental-advisory-council/stormwater/) entitled “Stormwater” hosts an array of public outreach materials, public workshop information, the Pollution Prevention Hotline to be used for non-emergency concerns, and links to the Protecting Carroll County Waters website and other relevant links.

3.1.3. *Social Media*

In January 2022, the Department of Planning & Land Management launched the Carroll Environment page on Facebook at www.facebook.com/carrollenvironment/. The new page promotes opportunities for Carroll County’s public to learn about and engage in information, projects, and activities that promote environmental stewardship and understanding in Carroll County. A QR code was created to help the public to quickly access the page with a smartphone or similar device.



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Posts highlight ongoing and completed projects, solicit interest in volunteer opportunities, and promote environmental initiatives within the department and beyond. Information will be posted for the public to learn about opportunities to participate in stream cleanups, tree plantings, and invasive species removal events hosted by the department.

A contact person was identified and an email address (CarrollEnvironment@carrollcountymd.gov) was created for the public to reach out to regarding information that is posted.

3.1.4. Events

In Carroll County, staff is continuously involved in environmental education efforts. PLM staff regularly volunteers to speak at schools, community organizations, club meetings, and other venues in an effort to ensure that good and timely environmental information is available to the community.

Staff partners with the Carroll County Public Schools' elementary and science programs each year to educate and engage fourth and fifth grade students on issues related to water quality that coincide with the curriculum. Sessions are provided on topics such as biological/stream health, stormwater, and the importance and benefits of tree planting.

The number of specific public education venues has steadily increased since the stormwater program was formally established in 2008. The events and activities during any given year can be found in the [NPDES MS4 Annual Report](#). The Annual Reports, starting with FY 2014, are available on the [Protecting Carroll County Waters](#) website. These outreach activities provide additional opportunities to distribute information related to stormwater management, water

quality, and other various environmental issues. Some examples of events held include, but are not limited to:

- Wakefield Valley Golf Course Tree Planting (Westminster)
- Envirothon Aquatic Education (High School Level)
- Earth Day with Piney Run Elementary 5th Grade re: Watershed Modeling and Assessment
- Charlotte's Quest Nature Center Spring Fest (Manchester)
- Cherry Branch Stream Buffer Planting (Union Bridge)
- Westminster Flower & Jazz Festival (Westminster)
- East Middle School "Engineering is Environmental" (Westminster)
- Baltimore City's Liberty Reservoir Day
- Earth Day event at Carroll County Farm Museum with Outdoor School students (Westminster)

3.1.5. Media

The County actively utilizes cable TV resources to place public service information on the television. This may include upcoming events, presentations, good housekeeping BMPs, and other resources.

In FY 2018, PLM staff, in conjunction with Carroll's Community Media Center (CMC), produced the first in a series of videos on BMPs for homeowners entitled "Stormwater Pollution Prevention for Homeowners, Part 1 - Stormwater and Homeowners." The video introduces homeowners to stormwater and why it is important. The next video will incorporate various sources of pollutants in residential yards and simple practices homeowners can employ to reduce runoff and prevent pollution. The video continues to be available online and at the County's social media sites, including the County's YouTube

Earth Day at Ebb Valley:

By Jon Bowman, BRM Staff

On April 23, 2015, fourth and fifth grade students from Ebb Valley Elementary School braved cool temperatures and blustery winds to participate in an ambitious Earth Day event. The event was funded by a \$10,759 grant from the Chesapeake Bay Trust's Outreach and Restoration program and made possible through a partnership between the Carroll County Bureau of Resource Management (BRM), Ebb Valley Elementary School, the Carroll County Outdoor School, and the Chesapeake Bay Trust.

Much of the effort and funding focused on the replacement of a rain garden near the front entrance of the school. The rain garden was meant to absorb and filter stormwater runoff from the surrounding parking lot; however, compacted soil prevented this from really happening. As a solution, BRM Watershed Restoration Engineer, Chris Heyn, designed a bioretention facility to replace the rain garden. While students were away for spring break, the rain garden was excavated and a drain pipe, stone, sand, and topsoil were installed. Heavy spring rains immediately put the new facility to the test, and it functioned perfectly. On the day of the event, students joined with stormwater experts Chris Heyn and Myron Frock to plant native shrubs and plants in the bioretention facility and spread mulch as the finishing touch. The plants will absorb some water and nutrients that come into the facility, and once established, they will provide food and habitat for birds, butterflies, and other insects.

In addition to the bioretention facility planting activity, fourth grade students also experienced three other stations led by BRM staff. At the forestry station, BRM staff members Jon Bowman, Theresa Amoss, Janet O'Meara, and Gale Engles had the students ponder the many benefits that trees provide. Specifically, they talked about trees cleaning the air, cooling stream temperatures, filtering stormwater, feeding and sheltering wildlife, and shading buildings and outdoor spaces. The students were able to get

a hands-on experience by planting 18 native trees on the school grounds. At the second station, Water Resource staff Byron Madigan, Tracy Eberhard, Rob Flora, and Pat Page led the students in an examination of a nearby stream. The students netted fish and macroinvertebrates (small aquatic insect larvae) and used charts to identify them. The staff explained how the organisms provide valuable information about the quality of the water in the stream. At the last station, staff members Martin Covington and Pat Varga taught the students that when rain falls on rooftops, parking lots, and other impervious surfaces, it runs off as stormwater and must be managed. Together, the students walked around a nearby stormwater management basin and learned about the various components. Students were shown the outfall where water leaves the basin and enters a stream. Through show and tell, students were able to understand how managing stormwater improves the water quality in the stream and protects the stream banks from being eroded. Later, the students were given educational materials and homeowner tips for them to take home to their families.

While the fourth graders went station to station, Outdoor School teacher, Joe Stevens, led fifth graders around the school grounds in a roving exploration of bird habitat and biodiversity. Ultimately all students were given unique insight into the natural resources right outside their school's front door. Also, they were taught about the planning and facilities that are put in place to protect those resources. Maybe the best thing about the event was observed by Ebb Valley Elementary fourth grade teacher, Dolly Mersinger, who said, "The children got to see the 'real work' of people in engineering, forestry, land management, and water management. This will no doubt create thoughts in their minds of possible career paths in the future."

Source: *down to earth* newsletter, Summer 2015, CC BRM

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channel (youtu.be/jtjcuGhihL8?list=PLwxzjZmRR9swwLZb0WwMo2r-sjDQ5lZDa). The video is also used at public workshops and within a GIS story map (ESRI) developed for use at public workshops.

From June 25 through July 22, 2019, a five-part series of news releases were sent out to help raise awareness for recycling. The series topics included Recycling 101; No Plastic Bags in Curb-side Recycling; Dos and Don'ts of Recycling... When in Doubt, Throw it Out; Recycling... Awkward Items; and Recycling... A Final Note. The news releases were also available on the County website.

In addition to their website public outreach information, Carroll County Public Works Road Operations has been posting public outreach videos on the County's Facebook social media site entitled "Keeping Lawn Clippings on Your Lawn" for road safety and environmental protection (www.facebook.com/100064838194749/videos/1099263520258841). CC Public Works Roads Operations also periodically posts winter weather storm event preparation efforts and emergency snow plowing emergency operations information.

Many of the municipalities also provide information on stormwater pollution prevention and other related topics through social media and cable television.

3.1.6. Contractors & Developers

Carroll County regularly informs contractors of their responsibility to secure an NPDES permit at construction sites. In addition, development review applicants are informed of the applicability of any state or federal permit to their project or facility.

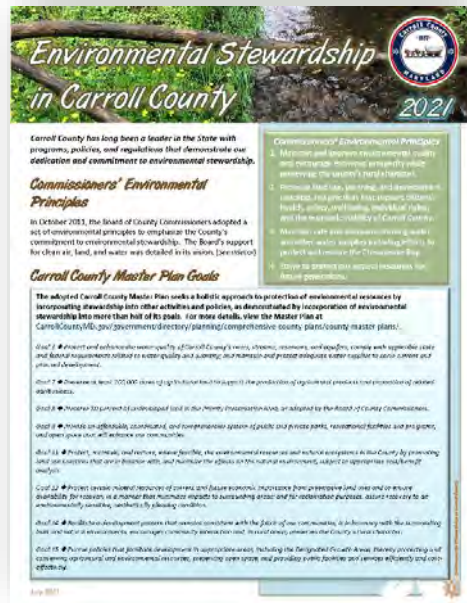
3.1.7. Councils

Carroll County continues to provide an open forum on environmental issues and concerns through its **Environmental Advisory Council** (EAC). This Commissioner-appointed citizen board holds monthly meetings, which are open to the public. The EAC functions at the direction of the Carroll County Board of Commissioners; works cooperatively with County environmental staff to research environmental policy issues; advises the Board of County Commissioners on environmental issues; fosters environmental education; and generally, acts in the best interest of County residents by promoting effective environmental protection and management principles. The EAC also serves as the County's Tree Commission, as well as provides an ad hoc committee of its members to hear appeals to the County's environmental codes.

In its role to promote environmental awareness and outreach, every other year, the EAC accepts nominations for Environmental Action Awards. Winners are recognized in a joint ceremony with the Board of County Commissioners, in the press, and on the EAC's website.

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Every other year since 2014, the EAC prepares a Carroll County **Environmental Stewardship** booklet, which is made available on the website, as well as provided at various venues. The booklet describes various efforts and initiatives undertaken by the County to demonstrate environmental stewardship and protection, including stormwater mitigation and management projects and progress.



The **Water Resource Coordination Council (WRCC)** (www.carrollcountymd.gov/government/boards-commissions/water-resource-coordination-council/) was formed in 2007 through a cooperative partnership between the County, the eight municipalities, and the Carroll County Health Department by a formal joint resolution to discuss and address issues related to water resources. The WRCC discusses and collaborates on pertinent issues related to water, wastewater, and stormwater management. The monthly meetings, which are open to the public, provide an excellent venue for members to coordinate on various current issues. The WRCC discusses NPDES technical and administrative issues on a regular basis.

WRCC took the lead in coordinating and developing a joint Water Resources Element, which was adopted by the County and seven municipalities. The WRCC serves as the local Watershed Implementation Plan (WIP) team for the development and implementation of Maryland's Phase II and III WIPs and continues in this role to address WIP issues and tasks as they arise.

In FY 2013 and 2014, they collaborated to develop, sign, and implement a Memorandum of Agreement to cost share the capital costs of meeting the municipalities' stormwater mitigation requirements, for the County to continue to provide administrative and operating support services for the stormwater mitigation program, and for the WRCC to act as the forum for setting project priorities.

Also, during this time, members of the WRCC participated on a Stormwater Fee Advisory Group to review and make recommendations regarding how a fee could be implemented as a result of House Bill 987 – Watershed Protection and Restoration Program. The Board chose not to adopt a fee. The State Attorney General recognizes Carroll's alternative funding approach for the Watershed Protection and Restoration Fund. Senate Bill 863 allowed counties to provide an alternative funding method but already required counties to submit a financial assurance plan (FAP) and establish a Watershed Protection and Restoration Program (WPRP) and Fund. The FAP is intended to demonstrate how the projects required by the permit will be funded. The WPRP Fund provides a place to hold the funds for this program.

3.2. Management Programs, Litter Reduction & Recycling

The permit requires (Part IV.D.4.e) the County to evaluate current litter control problems associated with discharges into, through, or from portions of its MS4. Additionally, the County shall continue to remove from or prevent from entering its MS4 11 tons of litter and debris as identified in the first year of permit issuance or as updated annually thereafter.

The Carroll County Department of Public Works (DPW) is responsible for solid waste and recycling in the county. The Recycling Program manages recycling initiatives and associated public education and outreach.

The vision of the Carroll County Recycling Operation is...

...To encourage a culture of waste reduction, reuse, and recycling. It is our goal to recommend and facilitate programs; education students, residents, and businesses to minimize the waste stream; and maximize the recovery of valuable and useful materials. This is our commitment to the environment and the people of our communities.

[Source: DPW Website, July 2015, www.carrollcountymd.gov/government/directory/public-works/office-of-recycling/]

3.2.1. Reduce, reuse, and recycle



Carroll County actively seeks to divert waste from the landfill. Recycling participation is on the rise in Carroll County. Options for both curbside and drop off opportunities have increased, as has the type of materials that can be recycled.

Curbside, single-stream recycling was implemented in 2007 (and expanded in 2008), making it easy and convenient for residents to participate. Most standard household recycling can simply be placed at the curb. Carroll County has taken advantage of grant opportunities to purchase and distribute large recycling containers that added to the ease of handling curbside recycling.

Carroll's Resource Recovery Facility is conveniently located in the center of the county and accepts many items that are not eligible for curbside pickup, such as Styrofoam, electronics, automobile batteries, antifreeze/waste oil, cooking oil, and textiles.

Carroll County also encourages property owners to divert yard waste from the landfill. Citizens can dispose of grass, leaves, and branches in the mulching area of the Resource Recovery Facility. These items are mulched, and the mulch is made available to the public. Citizens are encouraged to consider backyard composting. The County provides an opportunity to purchase compost bins and rain barrels at a discounted rate in the spring. Information and announcements related to these opportunities can be found at the Solid Waste website at www.carrollcountymd.gov/government/directory/public-works/office-of-recycling/.

The Recycling program offers a semi-annual household hazardous waste collection to ensure household chemicals are not improperly discarded. The Recycling office diligently works to inform citizens and instill the "Reduce, Reuse, Recycle!" theme.

The County continues to host annual residential household waste drop-off events for County residents. Generally, these events are held twice a year, in the spring and again in the fall. Events such as these provide County residents with a safe means for disposing of residential household chemicals, shredding of unneeded documents,

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and an opportunity to learn many ways in which to protect the environment. Collection of unused prescription and non-prescription drugs can be made to designated law enforcement agencies in the county. The County also hosts an annual rain barrel and composting event each spring to provide rain barrels and composting bins to residents at a reduced cost.

Through all recycling efforts, as of 2019, **the County has achieved a 34 percent recycling waste diversion rate that includes a 5 percent source reduction credit** (based on Maryland Department of the Environment Recycling Report). The State-mandated recycling rate is 35 percent.

To proactively address changing and future solid waste needs, a Solid Waste Work Group evaluated options and prepared a report with recommendations. A Solid Waste Advisory Council (SWAC) was established in 2014 to help implement recommendations of the various solid waste plans and advise staff.

The Solid Waste Recycling Program hosts a **website** providing extensive public education materials and opportunities entitled "Recycling" (www.carrollcountymd.gov/government/directory/public-works/office-of-recycling/recycling/) under "Living Here" on the Carroll County Government home page. The website hosts information for multiple types of users regarding multiple aspects of recycling. The homepage provides general information and materials on recycling, as well as information targeted to recycling in the home, at schools, and for businesses. All recycling events are posted on the website, and related educational materials and documents are posted and available for download. The Recycling Program also hosts a Facebook page for followers to receive regular information and updates.

Multiple **events** throughout the year promote reduction, reuse, and recycling and provide products or services to facilitate this result. These events include, but are not limited to, compost bin and rain barrel sales, household hazardous waste clean-up collections, paper-shredding service days, and other specialty events for collection of items that cannot be recycled through single-stream recycling (such as CFL bulbs, pharmaceuticals, kitchen grease, and latex paint). Recycling program staff also attend many festivals and community events where an educational booth and materials are provided, and staff is available to answer questions.

In addition to all the educational and information materials available on the Recycling website and at events, **information** is routinely **disseminated** to the public through mailers, advertisements in local print media, local cable channels, and local radio stations.

3.2.2. Programs in schools, businesses, community associations, etc.

Carroll County DPW Recycling staff coordinates closely with Carroll County Public Schools (CCPS) and Carroll Community College to address the requirements of House Bill 1290 – Environment – Recycling – Public School Plans (2009) to implement a strategy for collecting, processing, marketing, and disposing of recyclable materials from its public schools. Single-stream recycling was implemented at the schools, as with the residential community. Various types of collection containers are available throughout the schools. The Carroll County Board of Education is responsible for the administration of the program in all publicly funded schools, and contracts for trash and recycling services. Annual evaluations by the CCPS assess the collection and marketing program.

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Additionally, County Recycling staff partners with the Carroll County Public Schools STEM (Science, Technology, Engineering, & Math) programs each year to educate and engage students, usually in elementary school, on issues related to recycling that coincide with the curriculum. Information related to recycling in the schools can be found on the County's Recycling webpage at www.carrollcountymd.gov/government/directory/public-works/office-of-recycling/recycling-in-the-school/.

3.3. Management Programs, Salt Management Practices

The fifth-generation permit adds a requirement (PART IV.D.4.d.ii.) for the County and municipal co-permittees to develop Salt Management Plans (SMP) to demonstrate how they will reduce the use of winter weather dicing and anti-icing materials. The SMPs must include training and outreach through developing and distributing best salt management practices information for education homeowners with the county.

Carroll County Roads Operations and most municipalities have written salt management procedures. Carroll County Roads Operations developed and implemented their own Carroll County Salt Management Plan during the 2021 permit year. The plan was developed based on their own Standard Operating Procedures, SHA salt management plan guidelines, staff input, and other resources. The plan is available to the public and can be downloaded at: www.carrollcountymd.gov/government/directory/public-works/roads-operations/carroll-county-department-of-public-works-bureau-of-roads-operations-salt-management-plan/

Carroll County Roads Operations also provides general information to the public about their Snow/Ice Guidelines for Carroll County at:

www.carrollcountymd.gov/government/directory/public-works/roads-operations/carroll-county-department-of-public-works-bureau-of-roads-operations-salt-management-plan/

Carroll County Roads Operations also provides an outline of their Standard Operating Procedures and a contact number at: www.carrollcountymd.gov/government/directory/public-works/roads-operations/snowice-removal-guidelines-for-carroll-county-md/operations/

The Carroll County Department of Public Works hosted a virtual Winter Weather Coordination Meeting for the 2020-2021 winter season on December 15, 2020. The meeting provided an opportunity for information sharing between appointed, elected, emergency medical services, fire, law enforcement, public safety (emergency communications/ emergency management), MDSHA, and public works representatives from all cities, towns, the County, and the State. The meeting focused on the goal to reduce winter weather road salt deicers for the improvement of water quality while providing safe, passable road conditions. Presentations included the County's Bureau of Roads Operations salt management program and a presentation by Mr. Robert George of Morton Salt regarding the latest technical information in commercial bulk deicing.

Every storm event is treated as a unique event, with decisions made based on actual conditions. Citizen information is provided on the Roads Operations' webpage, "Clearing the Way Through Carroll County Efficiently," which provides instructions for the public that help salt crews limit the number of return passes necessary to clear roadways and reduce the amount of salt applied.

3.4. TMDL Stormwater Implementation Plans, Public Participation

According to the permit (PART IV.F.4.), Carroll County shall provide continual outreach to the public and other stakeholders, including other jurisdictions or agencies holding stormwater WLAs in the same watersheds, regarding its TMDL stormwater implementation plans. Carroll County shall solicit input from the public, collaborate with stakeholders, and incorporate any relevant comments that can aid in achieving local stormwater WLAs. To allow for public participation, Carroll County shall:

- ◆ Maintain a list of interested parties for notification of TMDL development actions;
- ◆ Provide notice on the County's webpage outlining how the public may obtain information on the development of TMDL stormwater implementation plans and opportunities for comment;
- ◆ Provide copies of TMDL stormwater implementation plans to interested parties upon request;
- ◆ Allow a minimum 30-day comment period before finalizing TMDL stormwater implementation plans; and
- ◆ Document in final TMDL stormwater implementation plans how the County provided public outreach and adequately addressed all relevant comments.

As part of the watershed restoration efforts, Carroll County solicited input from the public regarding development of the County's TMDL implementation plans. Public involvement occurred following interim submissions of the restoration plans to MDE, which provided feedback and subsequent revisions to the plans. Interim submissions to MDE included Watershed Characterizations, Stream Corridor Assessment summaries, and Watershed Restoration Plans for the six

8-digit watersheds in Carroll County with an approved TMDL WLA for developed source types.

The process to develop a restoration plan is divided into two main components – the watershed assessment and the restoration plan. The watershed assessment was completed, and the results compiled in a stream corridor assessment. This document then provides a basis for the development of an iterative plan that describes measures that could be taken to improve water quality and the health of the stream corridor – the restoration plan.

For each 8-digit watershed that lies either wholly or partially within Carroll County, a **watershed assessment** was completed. Through the assessment, the general condition of a stream system was assessed and measures identified to improve the overall health of the drainage network. Maryland Department of Natural Resources' (DNR) **stream corridor assessment** tool was used to assess a 50-foot corridor on either side of the stream.

A **Stream Corridor Assessment** is a tool developed by the Maryland Department of Natural Resources to efficiently assess the general condition and health of a stream system and identify the location of common environmental concerns to improve the overall health of the drainage network.

This assessment identifies stream impairments, such as stream bank erosion, less than adequate streamside buffer, trash dumps, pipe outfalls, exposed pipes, channel alteration, in-stream construction, and fish blockages. After identification, the impairments are assessed based on three factors – the severity of the problem, the accessibility of the location, and the complexity of the modification process.

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At the beginning of the process, every property owner whose property is crossed by a stream was mailed details regarding the assessment and what it involves. Property owners were requested to respond by returning a postcard to indicate if they would voluntarily participate by allowing access to their property. Many property owners even participated in the actual stream walk with staff. Staff employed additional means to contact property owners who hadn't responded but may have been able to fill important gaps in the corridor.

The conditions found during the watershed assessment were summarized in a "stream corridor assessment" document. It provides a general summary of the conditions found, including erosion, buffer type/width, etc., as well as related statistics. The stream corridor assessment for each watershed is available to view or download on the Bureau of Resource Management website under "Watersheds.". (<https://www.carrollcountymd.gov/government/directory/land-resource-management/resource-management/watersheds/>) Each watershed is listed and provides a link to both the stream corridor assessment and the watershed characterization.

Owners of property that was found to have inadequate buffers were sent a letter encouraging them to participate in the County's Stream Buffer Initiative. This initiative is completely voluntary; participating landowners must be willing to grant access to their property for ground preparation, planting, and maintenance of the planting. During the planning phase, staff meets with interested landowners to discuss potential planting areas. Landowners are provided with a native tree species list, which allows them to select the native trees they prefer to be planted on their property. Establishing streamside buffers offers many benefits, including sediment filtration, excess nutrient removal, stream bank stabilization, temperature regulation,

and wildlife corridor establishment, as well as one-on-one educational opportunities.

Once the watershed assessment and subsequent stream corridor assessment were complete, staff developed a **restoration plan** (now called a TMDL stormwater implementation plan in the permit) to indicate the activities and measures that could be taken to help improve water quality and the health of the stream corridor. A draft of the completed restoration plan was submitted to MDE for review and comment. The draft was finalized upon notification from MDE that the plan was adequate and/or subsequent to addressing any

The **Stream Buffer Initiative** was developed by the Bureau of Resource Management to identify and remediate inadequate streamside buffers located on private properties within the county's watersheds. Inadequate buffers are identified through the Stream Corridor Assessment (SCA) conducted as part of the watershed assessment performed by staff in an attempt to ultimately protect streams from unmanaged runoff.

The benefits of establishing streamside buffers include sediment filtration, excess nutrient removal, stream bank stabilization, temperature regulation, and wildlife corridor establishment.

During the planning period, Resource Management staff meet with interested landowners to review tree planting options for the property that include planting locations, species preference, and potential short- and long-term outcomes. Landowners, who voluntarily participate in the initiative, then grant property access for site preparation, planting, tri-annual maintenance, and long-term maintenance inspections of these plantings.

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comments received from MDE regarding the draft plan. The final restoration plan for all nine watershed basins is available on the Resource Management website.

Following two rounds of review by MDE, the County began releasing the restoration plans for public comment in fall of 2019. Notice of this release was sent to the Carroll County Times on September 26, 2019, and posted on the Carroll County webpage. Hard copies of the plans were made available for review and comment at the BRM, and digital versions were posted on the Bureau's webpage to allow for submission of electronic comments.

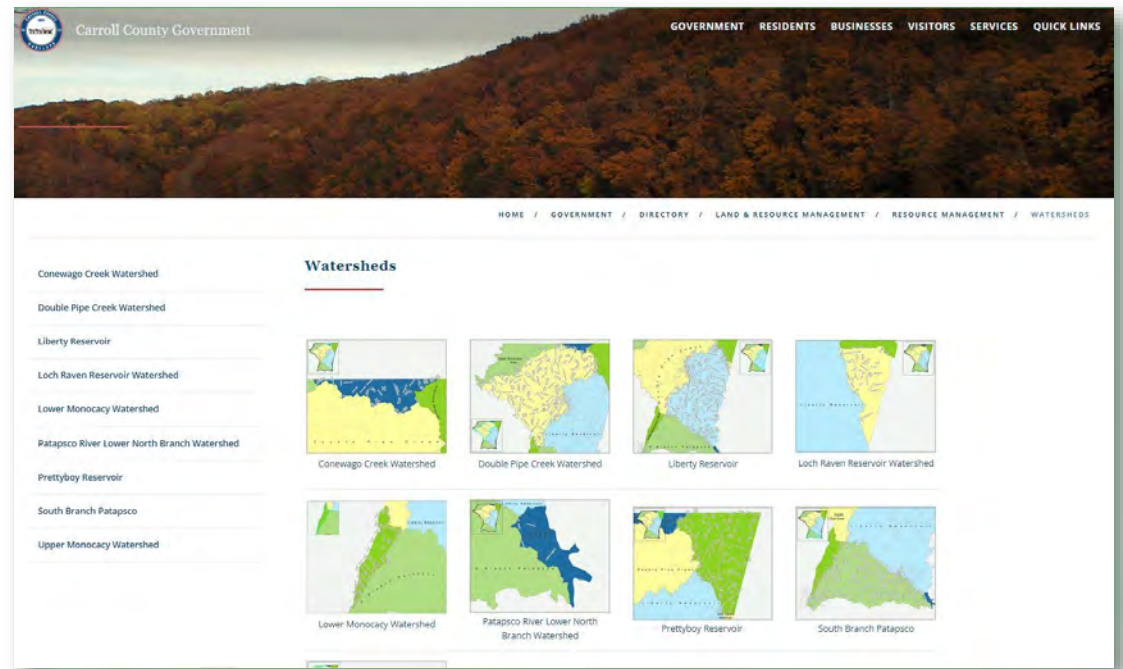
The Watershed Restoration Plans were released for 30-day public comment in a staggered method beginning on October 1, 2019. Upper and Lower Monocacy Watersheds were open for public comment from October 1 to October 30, Prettyboy and Loch Raven Watersheds were open for public comment from October 14 to November 14, and Double Pipe Creek and Liberty Watersheds were open for public comment from October 28 to November 28.

The County received extremely limited feedback from the public related to the seven restoration plans. A discussion of the feedback and its applicability to the restoration plans were provided in the County's 2019 Annual Report.

In May 2020, the County received correspondence from MDE that all seven restoration plans were

approved, as they met the required technical merits and included all necessary watershed planning components.

For information regarding each individual watershed, please visit the Resource Management website at www.carrollcountymd.gov/government/directory/land-resource-management/resource-management/watersheds/.



CHAPTER 4: FACTORS INFLUENCING SUCCESS (OR CHALLENGES)

4. FACTORS INFLUENCING SUCCESS (OR CHALLENGES)

4.1. Misinformation, Perception, Convenience

People have varying understandings of, and priorities related to, issues surrounding water quality and stormwater. With the busy lives people lead, many may not even realize that their actions impact water quality, both in local streams and waterways, and ultimately the Chesapeake Bay. Once people understand the importance of stormwater as it relates to water quality and the benefits that their individual actions can produce, they often are motivated to make adjustments that can improve water quality.

Other times, it is simply a matter of misinformation that creates a barrier to individual action. However, general perception is reality for

most people. Providing information that changes their perceptions helps to motivate change or new actions.

Habit and convenience are also factors in influencing people's willingness to modify or engage in new behaviors that will make a difference. Once again, the right information and delivery may encourage people to make changes that will improve their individual impact to water quality.



CHAPTER 5: TARGET AUDIENCES

5. TARGET AUDIENCES

To ensure the greatest efficiency of effort and impact of changes in people's activities that might affect stormwater pollution and prevention, identifying target audiences will help the County and municipalities to achieve the goals and comply with the permit more effectively. The target audiences are those groups of people to reach with the outreach messages.

The permit requires the County to address certain issues in its public outreach campaign that necessitate a very broad target audience. However, where possible, messages need to be tailored to more specific target audiences. The message, or type of information to be provided, may be different for each group, and the tools to engage that audience may vary as well.

5.1. County & Municipal

The permit requirements directly require certain actions of the County and the municipalities. In addition to stormwater mitigation projects implemented to meet the restoration requirements of the permit, the County currently holds general industrial stormwater permits (12 SW) on four of its facilities – the **Maintenance Center, Carroll County Regional Airport, the Northern Landfill Resource Recovery Park, and Hoods Mill Landfill**. Hampstead, Manchester, Mount Airy, Taneytown, and Westminster each hold one or more industrial permits (12SW) for individual facilities. County PLM staff is very knowledgeable regarding the technical aspects of the permit, as

well as the benefits, needs, funding, and other aspects of stormwater pollution, prevention, mitigation, etc. However, it is also important for staff in other agencies within the County and municipalities, particularly Department of Public Works and those where pollution prevention may be relevant, to understand NPDES permitting requirements, pollution prevention plan development, proper housekeeping measures, and spill prevention and response.

5.2. Commercial & Industrial Community

While not all commercial and industrial properties hold their own individual permits, these properties are expected to comply with stormwater regulations and requirements regarding pollution prevention. The County's permit prohibits pollutants in stormwater discharges and requires enforcement of corrective action for identified illicit discharges. Therefore, education regarding pollution prevention is an important requirement of the permit as well.

The County provides information regarding water quality issues to these businesses when requested. The issues include the same as those that local government staff need to understand and practice: NPDES permitting requirements, pollution prevention plan development, proper housekeeping measures, and spill prevention and response.

The County makes information available to all businesses within the county and municipalities. However, properties most at risk for illicit discharges or for which pollution prevention and good housekeeping measures are most relevant are a target audience for business

outreach efforts. These businesses will impact pollution reduction and mitigation efforts the greatest and are identified through the **source identification** section (PART IV.C.2.) of the permit. In general, the commercial and industrial types include **auto-related businesses, gas stations, industrial facilities and stormwater permit holders, restaurants and food industry, lawn and landscaping, mobile pressure washers, fleet operations, and property owners/management.**

5.3. Residents & Community Associations

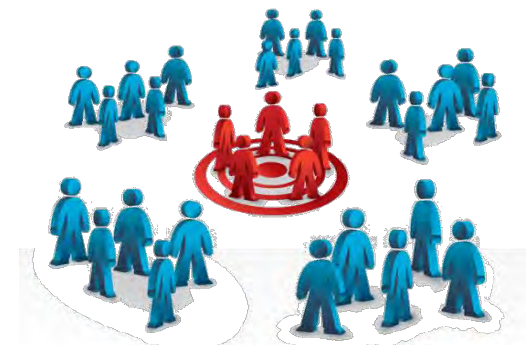
The permit requires the County to continue to implement a public outreach and education campaign and provide information to the general public about the benefits of certain measures and activities. The **general public** is a very broad audience, and many of the issues – such as water conservation and disposal of household hazardous waste – apply to the entire population. Materials and activities to address these issues will, therefore, be targeted to the residents and businesses at large.

Other issues – such as community stormwater management and facility maintenance and pet waste management – may be applicable to a subset of the population. In these cases, efforts may focus on certain stakeholders or interest groups where the message will most resonate and most spur resulting action. **Building relationships with community groups** may be developed to enhance outreach efforts related to residential activities, as they generally have additional avenues through which they disseminate information to their members. Information may be provided to residents through various businesses or facilities that relate to stormwater issues, such as lawn fertilizer and pet waste.

5.4. Schools & Other Institutional Uses

School students offer a wonderful audience to target learning opportunities that effect their interests, priorities, and actions. Students' learning often cascades into actions by the adults that surround them, both teachers and family members, as the students share what they have learned. County staff can support the students' current learning and provide field opportunities for hands-on, applied learning that coincides with their current curriculum.

Colleges reside on large areas with multiple buildings and/or parking areas. Due to their size, these uses are a target audience, but would benefit from applying the same good housekeeping measures that would be appropriate for businesses.



<http://startupmywebsite.com/how-do-i-reach-my-target-audience/>, July 28, 2015.

CHAPTER 6: THE MESSAGE

Engaging the Public to Elicit Action

6. THE MESSAGE

The County will focus its public outreach campaign on the issues and topics prescribed by the permit in PART IV.4.d.ii., PART IV.D.5., and PART IV.F.4. The varied audiences and issues may require different messages to fit different needs. In general, the County wants to convey to the target audiences that it seeks a voluntary approach to addressing potential problems and issues and implementing good housekeeping measures. The County would like to provide support

to and, where appropriate, partner with the public and businesses to understand what the issues are, why they are important, their relevance to individuals and target audiences, and the benefits to implementing best management and good housekeeping measures. Assistance with voluntary compliance builds effective professional relationships and helps to minimize, for both the County and the property owner, costs and enforcement actions by MDE and/or EPA. Saving money by minimizing or avoiding these costs benefits all the County's taxpayers in the long run.



Source: <http://blog.jodena.com/throw-away-megaphone/>
July 2015

CHAPTER 7: THE METHOD & MEANS

Suggested Programs & Activities

7. THE METHOD & MEANS

A review of the permit requirements, goals of the public outreach plan, current programs and activities in the County's public outreach campaign, and the messages that need to be delivered help to identify the actions that can be taken to continue the program, make improvements where needed, and comply with the permit requirement of 25 outreach efforts per year.

As described in Chapter 3 of this plan, Current Activities & Programs, the County's program currently includes extensive outreach measures. Therefore, **the County's primary efforts will be, first and foremost, to continue those current successful programs, activities, and materials.**

However, additional measures can be taken to continue to improve and round out the program to achieve the goals outlined in Chapter 2, shown below.

***Goal 1:** To build upon the County's current public education and outreach program and strategies with the intent of fostering a more holistic, coordinated approach that results in easier access and broader dissemination of information.*

***Goal 2:** To raise public awareness of stormwater pollution and prevention measures, their benefits and importance, and activities in which residents and businesses can engage to further reduce and prevent stormwater pollution and runoff.*

The suggested programs and activities that follow are grouped by the permit sections that address each topic. The activities or products suggested are those that could help improve upon existing measures if implemented. All suggested activities, in addition to ongoing measures, would be targeted for completion within this permit period. As an iterative plan with the adaptive management framework of certain requirements within the permit, suggested actions or programs within this plan may be periodically reviewed and may be adjusted or deleted, or new measures added.



Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

7.1. Public Education – Outreach to General Public & Business Community to Raise Awareness (PART IV.D.5.)

Activities and products related to the general public are applicable to the business community as well. Suggested activities below focus on rounding out current programs and activities and making materials and information more accessible.

Suggested Programs or Activities: General Public & Business Community

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Enhance comprehensive user-hub website to provide additional information and accessibility.						
<input type="checkbox"/>	Continue to add materials to website to address broader range of issues and needs	<ul style="list-style-type: none"> ◆ # of materials available on website before and after revisions 	<ul style="list-style-type: none"> ◆ Fall 2022 (litter) ◆ Fall 2022 (recycling) 	<ul style="list-style-type: none"> ◆ PLM ◆ DPW 	<ul style="list-style-type: none"> ◆ Staff time ◆ Funds for printing 	Materials to be developed by EAC, in coordination w/ PLM. To be available online & hardcopies.
Objective: Continue to offer opportunities and materials for increased public awareness and access to permit-related, water quality information.						
<input type="checkbox"/>	Continue to engage public through Carroll Environment Facebook page and expand the relevant content	<ul style="list-style-type: none"> ◆ Have posts continued at a consistent and steady pace? YES or NO ◆ Have followers increased? YES or NO ◆ Have volunteers increased as a result? YES or NO 	<ul style="list-style-type: none"> ◆ Ongoing 	<ul style="list-style-type: none"> ◆ PLM ◆ Digital Media Manager ◆ DPW 	<ul style="list-style-type: none"> ◆ Staff time 	
<input type="checkbox"/>	Explore feasibility of expanding social media engagement to other social media platforms	<ul style="list-style-type: none"> ◆ Are time and resources available? YES or NO ◆ Will it result in significant level of additional engagement? YES or NO 	<ul style="list-style-type: none"> ◆ Summer 2023 	<ul style="list-style-type: none"> ◆ PLM ◆ Digital Media Manager 	<ul style="list-style-type: none"> ◆ Staff time 	Instagram, other?
<input type="checkbox"/>	Produce the next video in the Stormwater for Homeowners video series	<ul style="list-style-type: none"> ◆ Has a video been produced? YES or NO ◆ Is it accessible? YES or NO 	<ul style="list-style-type: none"> ◆ Summer 2025 	<ul style="list-style-type: none"> ◆ PLM ◆ A/V Production 	<ul style="list-style-type: none"> ◆ Staff time ◆ Access to equipment 	Part 2 in the series: individual practices

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
<input type="checkbox"/>	Periodically present to municipal councils to educate and update, as requested	<ul style="list-style-type: none"> ◆ Have presentations been made to Councils OR materials provided? YES or NO ◆ How many Councils received presentations or materials? 	◆ Ongoing	<ul style="list-style-type: none"> ◆ PLM ◆ WRCC 	◆ Staff time	
<input type="checkbox"/>	Prepare 1-page overview of new permit requirements to share w/ elected officials and public	<ul style="list-style-type: none"> ◆ Has overview been prepared? YES or NO ◆ Is it readily available? YES or NO 	◆ Winter 2022/23	<ul style="list-style-type: none"> ◆ PLM ◆ WRCC 	◆ Staff time	
<input type="checkbox"/>	Continue to participate in community activities that provide an opportunity to raise public awareness and increase volunteerism	<ul style="list-style-type: none"> ◆ # of events participated? 	◆ Ongoing	◆ PLM	◆ Staff time	◆ July 15, 2022: Carroll County Rec & Parks Summer Bash
<p>Objective: Build connections and partnerships between PLM, local environmental groups, and citizens to increase awareness and provide mutual assistance</p>						
<input type="checkbox"/>	Plan and conduct an environmental symposium as opportunity for local environmental groups to network with each other, to find common threads where they can work together, and to educate and engage the public	<ul style="list-style-type: none"> ◆ Was a symposium held? YES or NO ◆ How many NGOs participated? ◆ How many members of the public participated? ◆ # of participants who subsequently were engaged in volunteer opportunities 	◆ Annual - Fall	<ul style="list-style-type: none"> ◆ PLM ◆ CCPS High Schools ◆ Municipalities ◆ Carroll Arts Council 	<ul style="list-style-type: none"> ◆ Staff time ◆ Funding for printing, prizes, refreshments, etc. ◆ Venue 	<ul style="list-style-type: none"> ◆ Booths for individual environmental groups ◆ Recycled Art Competition ◆ Held October 28, 2023

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Attract and engage volunteers to assist with maintenance of environmental areas (i.e., tree plantings, stream clean-ups, etc.) and serve on environment-related boards and commissioners						
<input type="checkbox"/>	Use Carroll Environmental Facebook as an avenue to engage volunteers	<ul style="list-style-type: none"> ◆ Have # of volunteers increased? YES or NO ◆ How many volunteers engaged? 	◆ Ongoing	◆ PLM	◆ Staff time (for writing posts)	
<input type="checkbox"/>	Plan and conduct an environmental symposium as opportunity for PLM staff and local environmental groups to increase volunteer participation	<ul style="list-style-type: none"> ◆ How many members of the public participated? ◆ # of participants who subsequently were engaged in volunteer opportunities 	◆ Annual - Fall	<ul style="list-style-type: none"> ◆ PLM ◆ CCPS High Schools ◆ Municipalities ◆ Carroll Arts Council 	<ul style="list-style-type: none"> ◆ Staff time ◆ Funding for printing, prizes, refreshments, etc. ◆ Venue 	<ul style="list-style-type: none"> ◆ Booths for individual environmental groups ◆ Recycled Art Competition ◆ Held October 28, 2023
<input type="checkbox"/>	Engage students at McDaniel College to learn about and participate in stormwater outreach activities and projects	<ul style="list-style-type: none"> ◆ Were engagement opportunities created? YES or NO ◆ # of students who participated 	◆ Begin 2022, ongoing	◆ PLM	◆ Staff time	◆ To educate, to generate volunteers, and to encourage/recruit students to go into the stormwater and water quality field by providing hands-on experiences
<input type="checkbox"/>	Engage students at Carroll Community College to learn about and participate in stormwater outreach activities and projects	<ul style="list-style-type: none"> ◆ Were engagement opportunities created? YES or NO ◆ # of students who participated 	◆ Begin 2022, ongoing	◆ PLM	◆ Staff time	◆ To educate, to generate volunteers, and to encourage/recruit students to go into the stormwater and water quality field by providing hands-on experiences
<input type="checkbox"/>	Partner with local colleges and high schools to offer internships to students considering a career related to water quality	<ul style="list-style-type: none"> ◆ Were internship opportunities created? YES or NO ◆ # of students who participated 	◆ Begin 2022, ongoing	◆ PLM	◆ Staff time	◆ To encourage/recruit students to go into the stormwater and water quality field and provide hands-on experiences

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Educate businesses about permit requirements, good housekeeping measures, and pollution prevention.						
<input type="checkbox"/>	Develop self-inspection checklist for businesses to identify additional measures they could take	<ul style="list-style-type: none"> ◆ Was a checklist developed? YES or NO ◆ # of businesses that have inquired about it ◆ Is it readily available? YES or NO 	◆ Spring 2026	◆ PLM	◆ Staff time	
<input type="checkbox"/>	Update slide shows & associated handouts to be part of Department speakers' bureau*	<ul style="list-style-type: none"> ◆ Were slide shows created? YES or NO ◆ # of issues addressed before and after 	◆ Spring 2023	◆ PLM	◆ Staff time	Use slide show templates to "brand" NPDES public outreach efforts.
<input type="checkbox"/>	Update existing materials, as needed, to address good housekeeping measures for businesses in the target audience	<ul style="list-style-type: none"> ◆ Were materials updated? YES or NO ◆ # of issues addressed before and after 	◆ Ongoing	◆ PLM	◆ Staff time	
<input type="checkbox"/>	Develop an outreach campaign to commercial property management companies w/ varied businesses and sources of pollutants	<ul style="list-style-type: none"> ◆ Was a campaign developed? YES or NO ◆ # of materials developed ◆ # of businesses contacted 	◆ Fall 2025- Winter 2026			<ul style="list-style-type: none"> ◆ Individual letters ◆ BMP guidance documents

PLM = Planning & Land Management; ITS = Information Technology Services; EAC = Environmental Advisory Council

*Note: The speakers' bureau is a group of staff that is versed on water quality topics that may impact businesses and are available to speak to business groups upon request.

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

7.2. Best Salt Management Practices – Public Education Program (PART IV.D.4.d.ii.)

The fifth-generation permit requires the County and co-permittees to develop and distribute best salt management practices outreach for education homeowners within the county.

Suggested Programs or Activities: Salt Management Practices for Property Owners

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Develop educational materials related to best salt management practices.						
<input type="checkbox"/>	...for homeowners	<ul style="list-style-type: none"> ◆ Was a public outreach piece developed? YES or NO ◆ Is it easily accessible? YES or NO 	◆ Fall 2022	◆ PLM	◆ Staff time	Materials to be developed by EAC, in coordination w/ PLM. To be available online & hardcopies.
<input type="checkbox"/>	...for businesses	<ul style="list-style-type: none"> ◆ Was a public outreach piece developed? YES or NO ◆ Is it easily accessible? YES or NO 	◆ Fall 2023	<ul style="list-style-type: none"> ◆ PLM ◆ Municipalities 	◆ Staff time	

PLM = Planning & Land Management; DPW = Dept. of Public Works

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

7.3. Litter & Recycling – Public Education Program (PART IV.D.5.c.vii and viii.)

DPW's Recycling Program addressed all three "Rs" of reducing the solid waste stream – reduce, reuse, and recycle. Related efforts address a wide range of daily residential and business activities.

Suggested Programs or Activities: Litter & Recycling

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Continue to deliver effective Reduce/Reuse/Recycle public outreach campaign.						
<input type="checkbox"/>	Take advantage of and share existing resources and initiatives available through Keep America Beautiful (KAB)	<ul style="list-style-type: none"> ◆ Are KAB materials & initiatives shared? YES or NO 	◆ Ongoing	◆ DPW, Recycling	◆ Staff time	Anti-litter organization (www.kab.org)
Objective: Continue to provide educational materials related to litter & recycling.						
<input type="checkbox"/>	Develop additional materials to focus on reducing the amount of litter that reaches waterways	<ul style="list-style-type: none"> ◆ Were materials developed? YES or NO ◆ Are they readily accessible? YES or NO 	◆ Fall 2022	<ul style="list-style-type: none"> ◆ PLM ◆ DPW, Recycling 	◆ Staff time	Materials to be developed by EAC, in coordination w/ DPW. To be available online & hardcopies.
<input type="checkbox"/>	Update and refresh comprehensive guide to recycling in Carroll County	<ul style="list-style-type: none"> ◆ Were materials developed? YES or NO ◆ Are they readily accessible? YES or NO 	◆ Fall 2022	<ul style="list-style-type: none"> ◆ PLM ◆ DPW, Recycling 	◆ Staff time	Materials to be developed by EAC, in coordination w/ DPW. To be available online & hardcopies.
Objective: Continue to improve and foster the Adopt-a-Road campaign.						
<input type="checkbox"/>	Update the Adopt-a-Road video on the website	◆ Video update completed? YES or NO	◆ 2023	<ul style="list-style-type: none"> ◆ DPW ◆ Digital Media Manager 	◆ Staff time	Update video and post online for public

PLM = Planning & Land Management; DPW = Dept. of Public Works

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

7.4. Public Participation – Public Participation in TMDL Stormwater Implementation Plans (PART IV.F.4.)

Carroll County staff completed restoration plans per the requirements of the fourth-generation permit, and they were approved by MDE. These plans will be updated as needed and required by the permit, and public participation opportunities and processes will be consistent with permit requirements. Carroll County and its municipal partners will provide outreach to the public and other stakeholders, including other jurisdictions or agencies holding stormwater WLAs in the same watersheds, regarding its TMDL stormwater implementation plans (as they are now called in the permit). For any new TMDLs established, Carroll County will solicit input from the public, collaborate with stakeholders, and incorporate any relevant comments that can air in achieving local stormwater WLAs, in accordance with requirements of the permit. The suggested programs and activities below are consistent with permit requirements and are intended to create awareness and provide opportunities for public participation in the restoration plan process.

Suggested Programs or Activities: Public Participation in TMDL Stormwater Implementation Plans

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Provide opportunities for public participation during the development of watershed assessments and restoration plans.						
<input type="checkbox"/>	Maintain list of interested parties for notification of TMDL development actions	<ul style="list-style-type: none"> ◆ Is list available? YES or NO ◆ Are parties added as interest is expressed? YES or NO 	<ul style="list-style-type: none"> ◆ Initial list developed – Summer 2023 ◆ Thereafter... ongoing 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	
<input type="checkbox"/>	Provide notice on County's webpage outlining how public may obtain information on development of TMDL stormwater implementation plans and opportunities for comment	<ul style="list-style-type: none"> ◆ Was notice provided on website at beginning of planning process? YES or NO 	<ul style="list-style-type: none"> ◆ At beginning of each plan process (notice) ◆ When draft is available for public comment 	<ul style="list-style-type: none"> ◆ PLM ◆ CAO 	<ul style="list-style-type: none"> ◆ Staff time ◆ Legal ad (\$\$) 	Notice to be posted on PLM webpage at beginning of process. Once draft available for public review and comment, notice to be posted on PLM website and CAO website.
<input type="checkbox"/>	Provide copies of TMDL stormwater implementation plans to interested parties upon request	<ul style="list-style-type: none"> ◆ Were copies available online? YES or NO ◆ Were copies or links provided upon request? YES or NO 	<ul style="list-style-type: none"> ◆ Ongoing, as requested 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	Copies to be provided via link to the plan on website or via sending a PDF, unless requestor does not have internet access

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
<input type="checkbox"/>	Allow minimum 30-day comment period before finalizing TMDL stormwater implementation plans	<ul style="list-style-type: none"> ◆ Was 30-day comment period provided? YES or NO 	<ul style="list-style-type: none"> ◆ As draft plans are completed 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	Post plans online with dates and contact for public comments
<input type="checkbox"/>	Document in final TMDL stormwater implementation plans how County provided public outreach and adequately address all relevant comments	<ul style="list-style-type: none"> ◆ Was public outreach process documented in final plan? YES or NO ◆ Does plan contain documentation that relevant comments were addressed? YES or NO 	<ul style="list-style-type: none"> ◆ When each draft is finalized 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	Summarize substantive comments received and substantive changes made as a result
<input type="checkbox"/>	Revise/update existing, approved restoration plans as needed and per MDE guidance	<ul style="list-style-type: none"> ◆ Were plans update? YES or NO ◆ Were revisions approved by MDE as needed? YES or NO 	<ul style="list-style-type: none"> ◆ As needed; ongoing 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	https://mde.maryland.gov/programs/Water/TMDL/DataCenter/Pages/TMDLStormwaterImplementation.aspx



PLM = Planning & Land Management; CAO = County Attorney's Office

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)



7.5. Partnerships – Special Partnerships to Promote Action, Awareness, & Recognition

Carroll County continues its long-standing tradition of nurturing a cooperative relationship with its municipalities. Partnerships between the County and the municipalities, such as Water Resource Coordination Council (WRCC) and the joint permit status, will continue to bolster Carroll’s strong public outreach efforts. Partnerships with other agencies, County boards and commissions, and the local community will provide additional avenues to reach the community with efforts to raise awareness and engage the public in actions that improve water quality.

Suggested Programs or Activities: Partnerships

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
Objective: Continue to build or improve existing partnerships between the County and other entities to promote action, awareness, and recognition.						
<input type="checkbox"/>	County & Municipalities: WRCC	<ul style="list-style-type: none"> ◆ WRCC continues to meet? YES or NO 	◆ Ongoing	◆ PLM 	◆ Staff time	Formed in 2007; County, municipalities, & Health Dept; meets monthly to discuss water resource issues; open to public
<input type="checkbox"/>	County & Municipalities: Environmental Advisory Council (EAC)	<ul style="list-style-type: none"> ◆ EAC continues to meet? YES or NO ◆ EAC continues to provide educational materials & initiatives? YES or NO 	◆ Ongoing	◆ PLM 	◆ Staff time	Appointed by BCC; meets monthly to discuss environmental issues of concern to BCC; open to public; public education is one role; sponsors and coordinates workshops for stormwater outreach campaign
<input type="checkbox"/>	County & Municipalities: MS4 Memorandum of Agreement (MOA)	<ul style="list-style-type: none"> ◆ Original agreement reaffirmed/re-signed after 4th-generation permit to continue with 5th-generation permit? YES or NO ◆ Projects completed per MOA? YES or NO 	◆ Ongoing	◆ PLM	◆ Staff time	Originally signed October 21, 2014, by County and all municipalities, and reaffirmed October 7, 2021; joint permit; cooperative relationship to implement stormwater mitigation projects

Carroll County & Municipalities: NPDES MS4 Public Outreach Plan (POP)

<input checked="" type="checkbox"/>	Activity / Product	Potential Evaluation Indicators	Time Frame / Due Date	Agencies Involved	Resources Needed	Status / Comments
<input type="checkbox"/>	PLM staff & Economic Development staff	<ul style="list-style-type: none"> ◆ Econ Dev provided assistance? YES or NO 	<ul style="list-style-type: none"> ◆ Ongoing 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	Work together to get word out to businesses about events and materials related to regulated community
<input type="checkbox"/>	PLM staff & DPW staff (Facilities, Roads, Solid Waste)	<ul style="list-style-type: none"> ◆ DPW provided needed documentation? YES or NO ◆ DPW continued Recycling public campaign? YES or NO 	<ul style="list-style-type: none"> ◆ Ongoing 	<ul style="list-style-type: none"> ◆ PLM ◆ DPW 	<ul style="list-style-type: none"> ◆ Staff time 	DPW responsible for solid waste & recycling program; work together to document and summarize efforts related to permit
<input type="checkbox"/>	Public Engagement - Volunteer Opportunities: Individuals / Groups	<ul style="list-style-type: none"> ◆ Opportunities for public engagement available? YES or NO 	<ul style="list-style-type: none"> ◆ Ongoing 	<ul style="list-style-type: none"> ◆ PLM 	<ul style="list-style-type: none"> ◆ Staff time 	Opportunities for tree planting, stream clean-up, tree maintenance, serve on local boards and commissions, etc.