

Carroll County Maryland



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



2024 ANNUAL REPORT

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Carroll County
**NPDES ANNUAL
REPORT**
2024



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

2024 NPDES MS4 Permit Annual Report

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, 2023, to June 30, 2024.

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MDE 2023 Annual Report Assessment Response

On July 3, 2024, the Maryland Department of the Environment (MDE) acknowledged receipt of the Carroll County 2023 Annual Report. The letter acknowledged the work performed by the County and did not have any significant comments or concerns to be addressed.

Minor comments included:

- Request to remove historic BMP inspection records from the submitted geodatabase.
- The number of grading permits documented in the written narrative did not match the number reported in the geodatabase. 131 versus 123 respectively. This should be resolved.
- MDE requested that more specific information regarding stream restoration projects the first year following completion, including pre- and post-site conditions, project design, and all credit calculations.

These comments are addressed with this annual report.

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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 management practices, control techniques and systems, design and engineering methods, and

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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.

Within PLM, the Bureau of Resource Management (BRM) provides vital NPDES MS4 operational and technical support, including fieldwork, GIS operations, monitoring, inspections,

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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.

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.

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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.*

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.

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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 G**, "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 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.

The latest version of the schema was provided by MDE in fall of 2024. 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 F. The County will continue to work with MDE to refine the database design and perform quality assurance reviews

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of the data. Further opportunities remain for improving the GDB and its functionality, and the County requests that MDE formalize the identified issues with the next schema release.

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, 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. At the conclusion of the last permit year, there were 3,788 active BMPs across the County (1,059 structural practices and 2,729 ESD practices). The BMP feature class contains 3,833 features, 45 of which are "planned" BMPs for restoration crediting. Of the 3,788 active BMPs, 3,709 are new development BMPs (987 structural and 2,722 ESD), and 79 are Restoration BMPs (72 structural and 7 ESD). All facilities, drainage areas (3,803 total), and outfalls have been mapped, and associated data are provided on the Appendix B CD.

These values include those from the City of Taneytown, which maintains its own stormwater review, inspection, and maintenance program independent of the County. Taneytown currently has 46 active regular stormwater BMPs (35 structural and 11 ESD), two of which are Restoration BMPs. 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 last 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, when the previous permit expired, has been applied to the current fifth-generation permit. During this time period, the County has restored 1,081 impervious acres, which is equivalent to treating 13.4% 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, 2024, are 3,398. 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.

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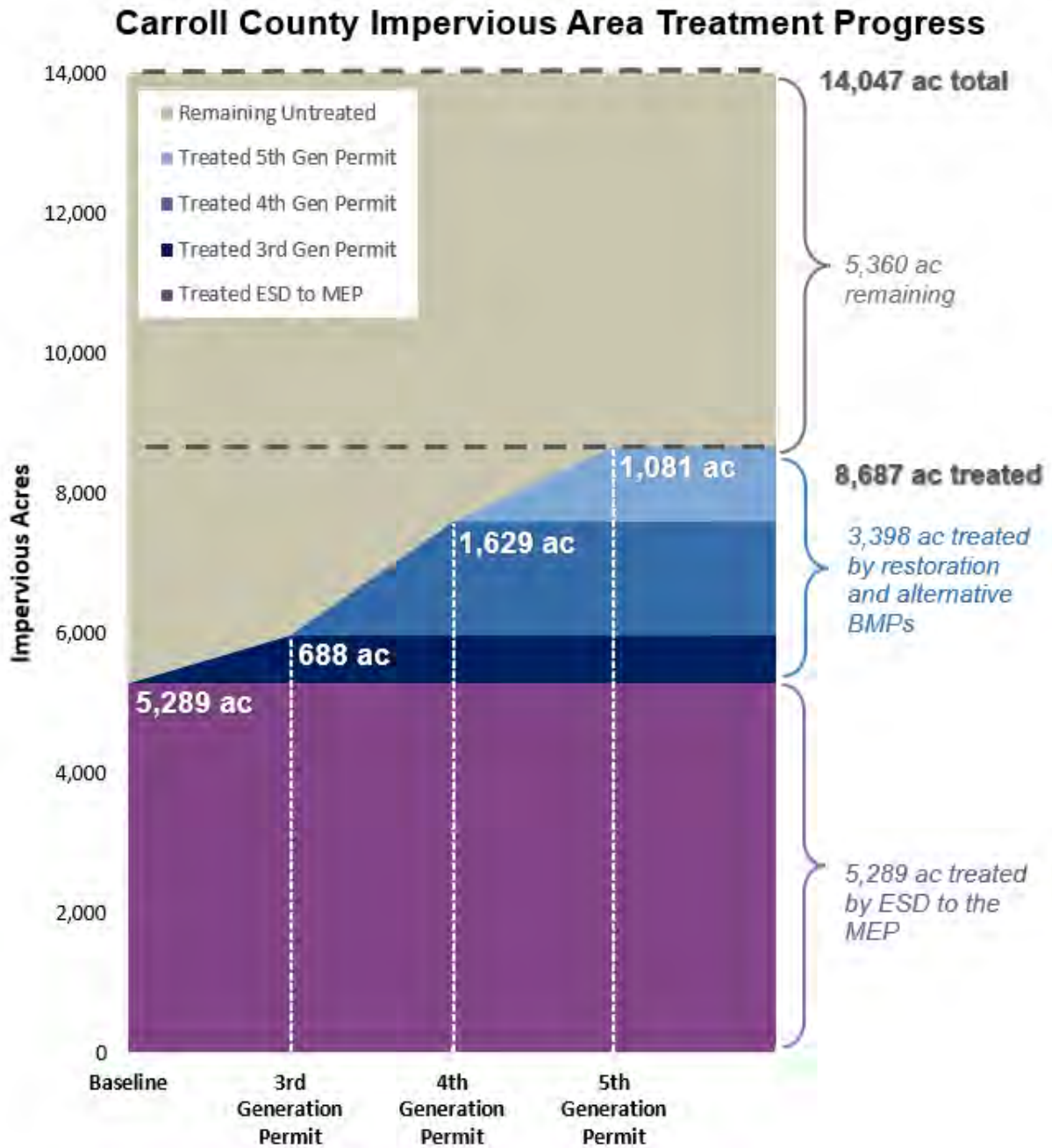


Figure 1: Carroll County Permit Impervious Surface Analysis

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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.

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

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

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During the last permit year, construction was completed on one structural stormwater management restoration project and numerous alternative practices, treating 99.7 acres of untreated impervious area. 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 Stormwater Program Engineers, Stormwater Reviewer, and the Stormwater Management Review Assistant. Review and approval of stormwater management during this permit year consisted of 126 plan reviews, 15 structural as-built approvals, and 204 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.

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.

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Inspections of facilities in the County and seven of the eight municipalities are handled by the 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 410 inspections this year on 320 individual structural facilities. Follow-up inspections are performed to ensure compliance has been achieved in a timely matter. Of those 320 structural facilities, 19 facilities needed corrective action, and 13 were brought into compliance as of June 30, 2024. In cases where violations still existed, 2 facilities were issued Notices of Violation. At the conclusion of FY2024, there were 1,023 structural stormwater management facilities on the list to be inspected. Of these, 348 will be inspected during FY2025, 345 will be inspected in FY2026, and 330 will be inspected in FY2027.

Currently, there are 2,717 non-structural ESD practices throughout the County. In FY2024, 808 inspections were performed on 780 practices. Of these, 40 ESD practices needed corrective action, and 9 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 1,113 are planned to be inspected in FY2025, 620 in FY2026, and 984 in FY2027.

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.

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

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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 105 grading permits issued (49 of which were greater than 1 acre of disturbance) and 2,806 sediment control inspections performed. All inspections are recorded and field investigations reports sent, regardless of the site conditions. There were 334 total violations recorded. In 30 cases, Stop Work Orders were posted for violations, which in most cases required compliance within 36 hours. There were no court cases nor fines collected, and there are no outstanding violations currently 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 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

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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.” For improved program implementation going forward, a comprehensive evaluation of the IDDE program’s procedures was performed and updated in a revised 2024 IDDE Guidance Manual. The manual is submitted with this annual report and found on the Appendix B CD for MDE review. The updated document incorporates previously approved elements of the IDDE program including a section for the Visual Survey component. Updated standard operating procedures are included for outfall screening and reported illicit discharge investigations with guidance on addressing sanitary sewer overflows and the MS4.

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. Standard operating procedures (SOPs) used this permit year are included in the County’s 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 eight 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 109 outfalls were screened for illicit discharges. For the Carroll County Phase I MS4 Permit, 101 outfalls were screened. Of these, 53 outfalls were in the County and 48 within co-permittee municipalities. Carroll County MS4 permit outfall screenings were distributed among seven watersheds: Liberty Reservoir (33), Double Pipe Creek (20), South Branch Patapsco River (26), Upper Monocacy River (7), Prettyboy Reservoir (10), Loch Raven Reservoir (4), 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 G for screening details of these outfalls. See outfall screening map in Appendix C for all location details.

There were 16 outfalls with dry-weather flows, each of which was chemically analyzed using a field screening test for the parameters defined by the permit. One illicit discharge was detected with an elevated chlorine level of 0.6 mg/L. Investigation by the municipal co-permittee DPW Utility Maintenance Department located, repaired, and eliminated a municipal potable water line leak. All other flows were attributed to groundwater sources and/or BMP stormwater facility retention flows. One outfall with slightly elevated trace amount of chlorine in a residential area was noted but 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.

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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. 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 received written approval from MDE for the prioritization process and screening plan submitted with the 2023 Annual Report and is now implementing this approach under current permit term.

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 Litter Management Stormwater Pollution Prevention BMP flyer was developed for businesses during the permit term and is included in Appendix C.

A total of 102 visual surveys were conducted across five watersheds during the 2024 permit year. There were 96 commercial and 6 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, seven businesses were sent an MS4 stormwater pollution prevention educational letter and provided with good housekeeping and best management practice (BMP) guidance information related to their primary industry activities. One additional site was determined to have recently received MDE 20SW Industrial Stormwater general permit coverage.

Of the 102 sites surveyed this year, 60 will be retained in the inventory for their high pollution potential. The remaining 42 properties will be removed for having no or low potential for significant pollutants, no exposure conditions, or having 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 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 or existing illicit pollutant discharges in the MS4. A pollutant discharge database is in place and managed by the 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 Westminster Maintenance Shop in 2024 and MS4 Permit and Reporting Water Programs Division in June of 2023 to discuss coordination between MS4s for resolving interjurisdictional investigations.

During the last permit year, 34 IDDE discharge complaints were processed. Two were on-going investigations that reached enforcement conclusion. Thirty-two new IDDE discharge complaints were received during the permit year, a 52% increase in reporting from the previous year. Of the 34 cases: 18 were from citizens via Stormwater Hotline or County or Municipal agencies, 14 from trained County and Municipal employees, and two from other regulatory agencies (MDE, EPA, and CC Health Department). Of these complaints, seven were determined to be non-illicit discharges, three were potential illicit discharges, and 24 were confirmed illicit discharges. The illicit events included: 11 commercial, 10 residential, two industrial, and one institutional area. Twenty-four illicit discharges, a 71% increase from the previous year, were successfully eliminated through County, municipal, and other interagency enforcement efforts during the permit year. Improved reporting, tracking and integration of sanitary sewer overflows to the MS4 in the IDDE program included eight incidents for the year. Specific protocols unique to processing SSOs to the MS4 have been added to the revised 2024 IDDE Guidance Manual submitted on Appendix B CD. The increased reporting and confirmed illicit discharges are attributed to program evaluation and enhancement through better integration of sanitary sewer overflow protocols, public education and outreach, employee/staff training for illicit discharge awareness, and interaction with multiple state agencies in the effort to protect and effectively improve water quality. 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.

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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

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. During the MS4 permit year, facilities with existing 12SW permits continued to operate under MDE’s administrative extension during the permit renewal process while each co-permittee evaluated their facilities under the new 20SW permit requirements to determine permit coverage. Co-permittees also evaluated any other potential facility to determine if coverage was needed at this time. **Table 3** lists 10 facility registrations under the 20SW permit renewal process, and one No Exposure (NE) Certification for Exclusion registration for the Town of Mount Airy WWTP.

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	Issued	MDE Registration: 01/12/24 20SW1755/MDR001755
County Maintenance Center	Yes	Issued	MDE Registration:02/29/24 20SW1861/MDR001861
County Northern Municipal Landfill	Yes	Issued	MDE Registration:03/11/24 12SW0660/MDR000660
Manchester Public Works Maintenance Shop	Yes	Issued	MDE Registration: 06/05/23 20SW2201A/MDR02201
Mount Airy Public Works Maintenance Shop	Yes	Issued	MDE Registration: 08/15/2023 20SW2257/MDR002257
Mount Airy Public Works WWTP	Yes*	Issued * No Exposure Certification	MDE Registration: 08/20/24 20NE2258/MDR002258

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County- or Municipal- Owned Facility	NOI Submitted	MDE Review Status	MDE REGISTRATION
Taneytown Public Works Maintenance Facility	Yes	Issued	MDE Registration: 02/26/24 20SW2263 / MDR001743
Taneytown Public Works WWTP	Yes	Issued	MDE Registration: 01/29/24 20SW1743 / MDR001743
Westminster Public Works Streets Maintenance Shop	Yes	Issued	MDE Registration: 01/26/24 20SW2292/MDR002292
Westminster Public Works WWTP	Yes	Issued	MDE Registration: 02/25/24 20SW2252 / MDR002252
Westminster Public Works Utilities	Yes	Issued	MDE Registration: 02/25/24 20SW2455 / MDR002455

Under the Industrial Stormwater General Permit, registered facilities have Stormwater Pollution Prevention Plans (SWPPP) that include site and key staff information, potential sources of pollutants, structural and non-structural good housekeeping BMPs, employee training, and recordkeeping. 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 during the MS4 permit reporting year, and the number of employees trained on-site for co-permittee industrial stormwater permitted facilities, which totaled 235 staff.

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

12/20SW Permitted Facility	Last Visual Quarterly Inspection Date	# Employees SWPPP Training 2024 Permit Year
County Regional Airport	04/03/24	1
County Maintenance Center	06/21/24	126
County Northern Municipal Landfill	06/05/24	15
Manchester Public Works Maintenance Shop	04/03/24	12
Mount Airy Public Works Maintenance Shop	01/20/24	10
Mount Airy Public Works WWTP	01/20/24	3
Taneytown Public Works Maintenance Facility	05/14/24	9
Taneytown Public Works WWTP	04/19/24	4
Westminster Public Works Streets Maintenance Shop	04/16/24	26
Westminster Public Works WTTP	05/15/24	15
Westminster Public Works Utilities	03/06/24	14
Total		235

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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 continued 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 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 several County agencies and the eight municipal co-permittees. 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. In the November 2023 Workshop, presentations included: "Local Winter Weather Operations & Maintenance Activities" by MD SHA District 7 Westminster Maintenance Shop's Engineer and staff, "MDE Compliance Permit Updates and Comments" by MDE, and "What's In Your Toolbox? - Adjustments in Property management and Maintenance Best Management Practices to Prevent and Reduce Pollutants" by County and Municipal property management and maintenance personnel through a variety of short presentations from practical experience. The agenda for the Fall 2023 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 284 County and municipal employees received training that covered the MS4 permit, general stormwater pollution prevention, good housekeeping BMPs,

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and IDDE. Of those 284 employees, 235 received 20SW Industrial Stormwater SWPPP training as described in the previous section, and 198 staff (123 County and 75 municipal) participated in winter weather salt management training. A total of 41 contractors also participated in salt management training: 28 CC Bureau of Roads Operations, nine CC Department of Recreation and Parks Maintenance, one CC Facilities, two Union Bridge and one Westminster.

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 BRM 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.

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 main building complexes and other related structures. 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 County 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, 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 main natural resource-related park venues and all other County recreational parks and athletic fields. 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)	✓ (2,5)	✓ (6,7)	✓ (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)	✓ (5)	✓ (6,8)	✓ (9,10,11,12,14,15)	✓ (17)	✓ (18)
	✓ Farm Museum (3)	✓ (5)	✓ (6,8)	✓ (9,10,11,12,14,15)	✓ (17)	✓ (18)
Hampstead	✓ (1,2,3,4)	✓ (1,2,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Manchester	✓ (1,2,3,4)	✓ (1,2,4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Mount Airy	✓ (1,2,3,4)	✓ (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)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Taneytown	✓ (1,2,3,4)	✓ (4,5)	✓ (6,7)	✓ (9,10,11,12,14,15,16)	✓ (17)	✓ (18)
Union Bridge	✓ (1,2,3,4)	✓ (1,4,5)	✓ (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 checks, 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 106 lane miles were swept countywide at varying frequencies, totaling 2,972 linear miles of sweeping during FY2024. 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 co-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 841 storm drain inlets were cleaned countywide using manual or vacuum methods during the permit reporting year, resulting in 17.95 tons of collected debris. **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 2024 permit year, total overall herbicide usage associated with vegetation management and maintenance activities increased slightly from 171.23 gallons to 171.36 gallons of concentrate. This was a 0.08% overall increase from the previous year reporting under the Carroll County MS4. Herbicide applications varied slightly as maintenance activities and practices have settled 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 guardrails, 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 2024 permit year. The fully implemented guardrail safety weed control program used 95 gallons of herbicide concentrate, for a 12% increase 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, the Bureau of Facilities used 0.67 gallons of herbicide concentrate for weed control for an 82% decrease from the prior permit year.

The Carroll County Bureau of Parks Maintenance manages pollution reduction efforts at three natural resource-related parks venues (e.g. Piney Run Park) and other County recreational parks and athletic fields, 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, increased hand trimming, mulching, and weed pulling vegetation management with no herbicide applications during the permit year 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 all municipal co-permittee vegetation maintenance programs varies and fluctuates by municipality with a 10% decrease for the permit year. The City of Westminster's reduced herbicide usage is partially influenced by its commitment to becoming a "Bee City USA" affiliate in 2021 and employing alternative vegetation management practices. The Town of Manchester has installed weed barrier and stone hardscape under some sections of guardrails

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to control vegetation and weed growth. The Town of Sykesville noted playground areas are manually or mechanically weeded.

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 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. A total of 198 employees under the MS4 permit (123 from County agencies and 75 from municipalities), as well as 41 contractors, received salt management training during the permit year.

Total road salt usage for the MS4 was 8,967 tons during the permit year, which corresponds to a 466% increase from the previous year. This was primarily due to significant snowfall in January and the type of precipitation and duration of winter weather conditions. CC Roads Operations reported three winter weather events where materials were applied. Other County agencies and municipalities reported between two and seven events where salt and/or brine were applied due to climatic variations throughout the County. The County and municipal co-permittees continue to improve efforts to reduce the use of solid deicers through improved equipment technology, ongoing training, improved salt brine mixing equipment, tracking and record keeping, and effective decision making by managers and staff. Reported salt brine manufactured from the solid tons was 47,114 gallons, a 112% 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 Workshop for the 2023/2024 winter season on Wednesday, November 8, 2023, from 1:00 to 3:00 P.M. at the Carroll County Maintenance Facility. The event provided an opportunity for education for elected officials, 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 included salt brine mixing demonstrations, salt spreader calibration demonstrations, and facility and winter weather equipment tours.

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 based on SHA's SMP updates and other resources. 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/>.

Carroll County Roads Operations hosted a Snow-Salt Management Practices training event on November 13, 2023, for pertinent County staff and contractors. Eighty-three County Roads Operations staff and 28 contractors participated in the winter weather pre-season training. 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. The county is divided into 50 snowplow routes. Training also includes calibration of salt truck equipment, SOPs for snow removal, brine preparation and application, material tracking logs for both County staff and contractors.

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 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

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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. County Bureau of Facilities salt training includes 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 applied in an environmentally safe manner.

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 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

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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 2024 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, 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 to "Keep Carroll Clean" are provided by the County. During the last permit year, 14 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 549 hours on roadside trash pickup. Additionally, the Bureau of Facilities provides trash and litter receptacles at facilities where they are considered practicable. Trash nuisance remediation in the County is primarily complaint-driven and site-specific. Contractors hired by the Carroll County DPW's Roads Operations assist to abate the trash. In the last permit year, 15 complaints were received, and one site was abated by County contractors.

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

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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 Waste drop-off events took place on October 21, 2023, and April 20, 2024. 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 again during the spring, 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 on Saturday, April 27, 2024. Composting information was available for residents as well as a demonstration for reducing waste. A second sale was also held during the fall, with pickup coinciding with the third annual Environmental

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Symposium. A demonstration on composting was hosted by Girl Scout Troop 1290 during the event.

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 14.83 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 kitchen- or contractor-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	Girl Scout Troop 2343 Bennet Cerf Park Cleanup	Girl Scout members collected litter at the Bennet Cerf Park in Westminster	Public	80
	Little Pipe Creek Cleanup	Westminster- Monocacy River Board members volunteered to collect litter in the headwaters of Little Pipe Creek	Public	645
	Town of Mount Airy "Let's Talk Trash" Event	Town Wide 4/20/2024- Challenge between 5 other towns on the same day to collect trash	Both	5940
	Town of Mount Airy Rails 2 Trail West Clean Up Day	5/11/2024 Rails 2 Trails West	Both	623
	Town of New Windsor Beautification Day	Yearly event to weed, clean up, mulch and plant flowers & shrubs at 4 Town Parks and 1 Open Space Area	Both	100

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Category	Maintenance Program or Event Name	General Location & Additional Details	Staff or Public	Total Weight (lbs)
	Town of Sykesville SPARC Spring Clean up	Town of Sykesville, Sandosky Road & South Branch Park areas	Public	200
	City of Westminster Downtown Spring Cleanup	Downtown Westminster	Public	280
	Town of Mount Airy Main Street Clean-Up	Citizens, staff, and local business owners performed a litter clean-up in downtown Mount Airy	Both	60
	Charlotte's Quest Nature Center Cleanup	Volunteers collected litter around the Charlotte's Quest Nature Center and along hiking trails	Public	250
	Panther Park Clean Up	Hampstead volunteers performed a litter cleanup at Panther Park	Staff	500
Group Litter Cleanup	Helping Hands Keep Our Parks Green Program	Regular litter cleanups conducted at 5 County parks	Public	500
	Friends of Liberty Reservoir Monthly Cleanup Events	Liberty Reservoir and nearby areas- Members of "Friends of Liberty Reservoir" perform group cleanups frequently throughout the year.	Public	3890
	Hampstead Main Street Cleanup	Main Street Hampstead- Business owners regularly perform litter cleanups together throughout the year	Public	625
	CC Roads Department Adopt-A-Road Program	Year-round volunteer program administered by County DPW	Public	2652
Staff Litter Cleanup	Town of New Windsor DPW Staff Cleanups	Town of New Windsor staff performs litter cleanup throughout the year at various areas and parks	Staff	200
	Town of Sykesville DPW Staff Cleanups	Town of Sykesville staff perform litter cleanups throughout the year at various areas and parks	Staff	400
	Taneytown DPW picked up litter along Antrim Boulevard	2/23/24 Antrim Boulevard from MD 140 to Trevanion Rd.	Staff	40

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Category	Maintenance Program or Event Name	General Location & Additional Details	Staff or Public	Total Weight (lbs)
	Town of Union Bridge Staff Cleanups	Town of Union Bridge staff perform litter cleanups throughout the year at various areas and parks	Staff	120
	Town of Union Bridge Staff Cleanups	Tire material collected along the roadway in Union Bridge	Staff	50
	City of Westminster Staff Litter Collection	The city of Westminster has 2 full-time employees dedicated to cleaning city streets, sidewalks, and parks of litter	Staff	8404
	Mount Airy Farmer's Market Clean-Up	Staff performed a litter clean-up at the Mount Airy Farmer's Market	Staff	40
	Town of Manchester Christmas Tree Park Clean-Up	Staff cleaned up litter after 4th of July fireworks event	Staff	50
	Town of Manchester York Street Clean-Up	Staff performed 2 litter clean-up events along York Street in Manchester, MD	Staff	20
	Town of Manchester Main Street Clean-Up	Staff cleaned up litter along Main Street in Manchester, MD	Staff	10
	Town of Manchester Westminster Street Clean-Up	Staff performed 3 litter clean-up events along Westminster Street in Manchester, MD	Staff	125
Storm Drain Cleaning	Town of Hampstead Storm Drain Cleaning	Town-wide throughout the year	Staff	1890
	Town of Manchester Storm Drain Cleaning	Town-wide throughout the year	Staff	538
	Town of Union Bridge Storm Drain Cleaning	Town-wide throughout the year	Staff	57
	City of Westminster Storm Drain Cleaning	City-wide throughout the year	Staff	335
SWM Facility Maintenance	Town of Hampstead Stormwater Facilities	Three staff cleanup events at Dams #503 & #505	Staff	370
	City of Westminster Stormwater Facilities	Two staff cleanup events at Langdon and Magna Way stormwater ponds	Staff	660
Total Weight (tons)				14.83


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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-npdes/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-npdes/
 - “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 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.

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- **“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-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.

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 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.

- “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,

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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 FY2024 events can be found in **Table 7**. The table also lists regularly scheduled events and outreach efforts.

Table 7
Carroll County Public Outreach Events FY2024

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
Outreach Events								
Taneytown - Family Food Truck Friday	Memorial Park - provided pamphlets that discussed stormwater pollution prevention	7/21/23 5pm to 8pm	2	200	1	3	N/A	Pamphlets
Mount Airy Main Street Clean-Up	Citizens, staff, and local business owners performed a litter clean-up in downtown Mount Airy	8/30/2023	Unknown	Unknown	Unknown	4	N/A	Staff time, gloves, trash bags
Celebree School Stream Bugs Presentation	Celebree School of Westminster - CC BRM Staff provided hands-on outreach to preschoolers with aquatic insects	9/7/23 10am to 12pm	1	20	1	2	N/A	Staff time, posters
New Windsor - Music on the Main	Town and County staff provided brochures & information to the public related to pollution prevention and stormwater.	10/7/2023 1pm to 7pm	7	450	8	6	N/A	Brochures & pamphlets
New Windsor - Bulk Trash Day	Residents bring bulk trash to Public Works facility on Geer Lane	10/7/2023 8am to 12pm	2	Unknown	2	4	N/A	Roll off dumpsters
UMD Freshwater Biology Guest Lecture	University of Maryland - CC BRM Staff taught a guest lecture for Freshwater Biology on urbanization and freshwaters.	10/12/2023 12pm to 1pm	1	20	2	1	N/A	Staff Time, PowerPoint
Carroll County Household Hazardous Waste Event - Fall	Carroll County Maintenance Center; Household hazardous waste collection and paper shredding	10/21/2023 8am to 12pm	1	Unknown	Unknown	4	N/A	Staff Time
Carroll County Environmental Symposium	Carroll County Ag Center; Student Recycled Art Contest; Water Resource Booth; Environmental Group networking event	10/28/23 9am to 12pm	10	150	100	3	\$2,000	Staff time, handouts, incentives, prizes

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
Taneytown Harvest Festival	Memorial Park, Taneytown - CC BRM Staff hosted the Water Resource Booth	10/30/2023 11am to 3pm	3	300	3	4	N/A	Staff time, handouts, posters
Howard County Conservancy Stormwater Presentation	Woodstock, MD - CC BRM Staff presented to Conservancy volunteers on stormwater restoration	1/10/2024 10am to 12pm	2	15	3	2	N/A	Staff Time, PowerPoint
Harvest Farms Stormwater Outreach	Provided educational materials to the Harvest Farms HOA on stormwater management	2/7/2024	2	Unknown	1	N/A	N/A	Staff time
Hampstead - Stormwater BMP Outreach to Local Businesses	Robert's Field Shopping Center - Town staff provided outreach information to businesses covering stormwater pollution prevention measures	2/23/2024	2	7	N/A	N/A	N/A	Staff time, handouts, mailed letters
Westminster - Langdon Pond Clean-Up	Langdon Stormwater Pond litter cleanup	4/12/2024	2	6	0	2	\$10	Trash Truck, Tipping Fees
Monocacy River Board - Little Pipe Creek Clean-Up	Carroll County Ag Center - Volunteers collected litter from the headwaters of Little Pipe Creek	4/18/2024 6pm to 8pm	3	6	1	2	N/A	Staff time, trash bags, gloves
Household Hazardous Waste Event - Spring	Carroll County Maintenance Center; Household hazardous waste collection and paper shredding	4/20/2024 8am to 12pm	1	Unknown	Unknown	4	N/A	Staff Time
Sykesville - SPARC Spring Clean up	Town of Sykesville: Sandosky Road, South Branch Park	4/20/24 9am to 1pm	2	20	N/A	4	NA	Staff Time
Mount Airy - Let's Talk Trash Challenge	Town of Mount Airy - citizens and municipal staff cleaned up litter and debris town-wide	4/20/2024	Unknown	Unknown	N/A	4	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
Earth Day Event - Bear Branch Nature Center	Bear Branch Nature Center; CC BRM staff hosted the Water Resource Booth	4/21/2024 10am to 3pm	4	100	4	5	N/A	Staff time, handouts, posters
Carroll County Rain Barrel & Composter Sale	Carroll County Office Building; Citizens purchased discounted Rain Barrels and Composters	4/27/2024 8am to 1pm	3	Unknown	Unknown	5	N/A	Staff Time
Westminster - Downtown Spring Cleanup	Downtown Westminster litter cleanup	4/27/2024	8	20	2	4	\$500	Trash Bags, Pickers, Trash Truck, Gloves, Safety Vests
New Windsor - Shred Day	Sponsored by ACNB and held in their parking lot	Annually in Spring	0	4	N/A	4	N/A	Vendor shred truck
New Windsor - Town Beautification Day	Town of New Windsor - citizens and staff weeded, cleaned up, mulched, and planted flowers at four town parks and one open space	Annually in Spring	4	Unknown	N/A	5	N/A	Staff time
Taneytown Fishing Derby	Roberts Mill Park; City provided pamphlets about stormwater pollution prevention	5/4/24 8am to 12pm	11	120	1	4	N/A	Pamphlets
Westminster Flower and Jazz Festival	Downtown Westminster; CC BRM staff hosted the Water Resource Booth	5/11/2024 10am to 4pm	5	10000	3	6	N/A	Staff time, handouts, posters
Mount Airy - Rails to Trails West Clean-Up	Town of Mount Airy - citizens and staff conducted a litter clean-up event along the Rails to Trails area	5/11/2024	Unknown	Unknown	N/A	4	N/A	Staff time
Taneytown Wine Festival	Memorial Park; City provided pamphlets about stormwater pollution prevention	6/8/24 11am to 4pm	13	350	1	5	N/A	Pamphlets
Family Summer Bash	Carroll County Farm Museum; CC BRM hosted the Water Resource Booth	6/28/2024 5:30 to 9:30pm	4	300	4	4	N/A	Staff time, handouts, posters

Name of Event	Location & Description	Date/Time	# Staff Involved	# Other Participants	Prep Time (hours)	Event Length (hours)	Cost of Materials	Resources Used
4H G.O.E.S. Field Day	Winfield, MD - CC BRM Staff hosted a station educating children on aquatic insects and stream health	6/30/2024 6pm to 8pm	1	45	2	2	N/A	Staff time, posters
Hampstead Main Street Clean-Up	Main Street - Hampstead - litter cleanup	Multiple/ Year-Round	5	5	0	N/A	N/A	Trash Bags, Pickers, Trash Truck, Gloves, Safety Vests
Mount Airy - Weed Warriors	Town of Mount Airy - citizens and staff conducted invasive plant control workdays at various locations to preserve native plant biodiversity and canopy cover.	Multiple/ Year-round	Unknown	Unknown	Unknown	Unknown	N/A	Staff time, gloves
Mount Airy - Adopt-A-Road	Town of Mount Airy - citizens and staff conduct quarterly litter clean-ups on four roadways around the town.	Multiple/ Year-round	Unknown	Unknown	Unknown	Unknown	Unknown	Staff time, gloves, trash bags
Manchester - Charlotte's Quest Nature Center Cleanup	Town of Manchester - Volunteers collected litter around the Charlotte's Quest Nature Center and along hiking trails	Multiple/ Year-round	N/A	Unknown	N/A	Unknown	N/A	Gloves, trash bags
Ongoing Outreach Initiatives and Programs								
Carroll County Adopt-A-Road Program	CC DPW volunteer groups conduct litter cleanups to keep roadways and streams clean.	Multiple/ Year-round	5	14	N/A	N/A	N/A	Staff time, trash bags, other materials
Bureau of Resource Management 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	250	N/A	N/A	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
Carroll Environment Facebook Page	Posts almost daily. Topics include restoration, stormwater, flooding, water resources, recycling, etc.	Multiple times per week	7	589	N/A	N/A	N/A	Staff time
Carroll Co. Farm Museum Stormwater 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
Environmental Advisory Committee 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
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
New Windsor - Town Bulletin Board and Information Table	Located in Town Hall. Various brochures with information on storm water pollution, water conservation, recycling, etc.	Year-round	1	0	N/A	N/A	N/A	Informational brochures & pamphlets
Mount Airy - Sustainability Commission Meetings	Town of Mount Airy - Sustainability Commission members conduct regular meetings with town residents to	Multiple/ Year-round	Unknown	Unknown	Unknown	N/A	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
	discuss and plan environmentally friendly initiatives addressing litter, invasive plants, and water, among other topics.							
Mount Airy - Recreation & Parks Board Meetings	Town of Mount Airy - monthly meetings where various park topics are discussed along with ongoing environmental program around the town.	Multiple/ Year-round	Unknown	Unknown	Unknown	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 550 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 2023 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 full Public Outreach Plan was submitted with the first annual report (FY2023) of the fifth-generation permit.

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. ▪ The second Symposium and planning of the third Symposium occurred during this reporting year.
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. ▪ The second Symposium and planning of the third Symposium occurred during this reporting year.
	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 have hosted several field lectures with McDaniel College students at restoration project locations throughout the County.
	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.
	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.

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Objective	Activity/Program	Page	Implementation
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.
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

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Objective	Activity/Program	Page	Implementation
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 is developed each year 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. One 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 action, awareness, and recognition	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 meets monthly.
	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.


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Objective	Activity/Program	Page	Implementation
	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 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.

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 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 1**, 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, 2024, and provide 1,081 acres of treatment as part of the County's current fifth-generation permit.

Projects planned or in design that are scheduled for completion between 2025 and 2030 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 698 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 2024

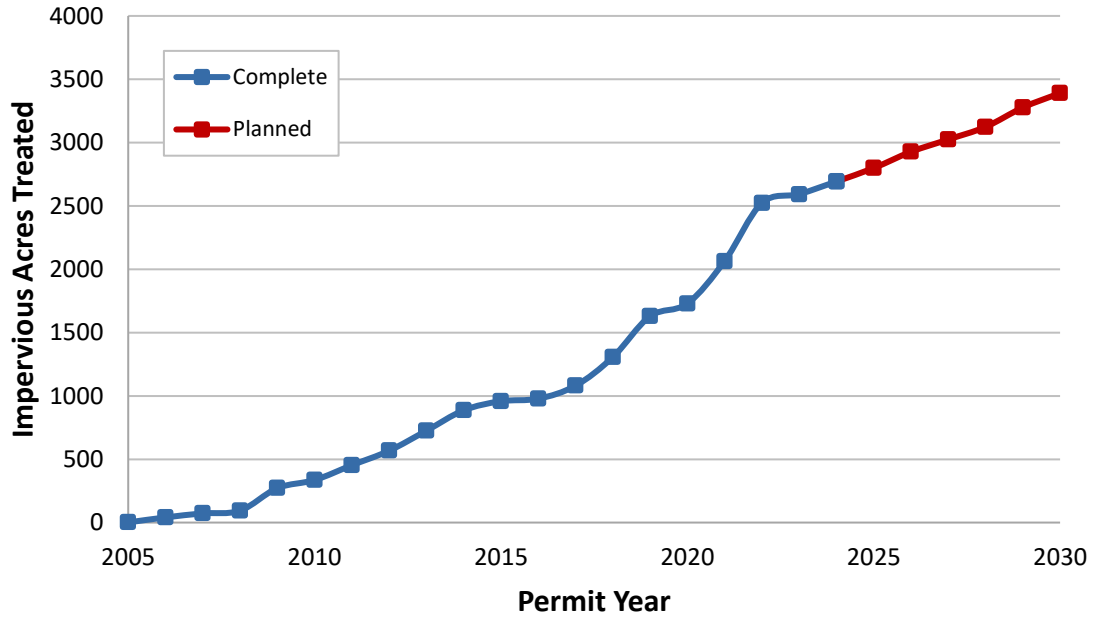


Figure 2: Impervious Surface Acres Treated: Projects Completed and Planned

Table 10
Listing of NPDES Watershed Restoration Efforts
July 2024

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
2011	Arthur Ridge	Retrofit	Complete	6.60	S Branch Patapsco River

Carroll County Second Permit Requirements - Completed December 31, 2019

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
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
2017	Farm Museum - Bioretention B	New Construction	Complete	2.55	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 – 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	
2019	Septic Upgrades to 2019	Retrofit	Complete	57.20	

Carroll County Second Permit Requirements - Completed December 31, 2019

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
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, 2024

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
2024	Brynwood SR	Stream Restoration	Complete	65.54	Liberty Reservoir
2024	Stone Manor Pump Station	Stream Restoration	Complete	4.20	Liberty Reservoir
2024	Sun Valley II Retrofit	Retrofit	Complete	7.99	Double Pipe Creek
2020-2024	Tree Plantings	Tree Plantings	Complete	120.42	
2020-2024	Forest Conservation	Protections	Complete	32.28	
2020-2024	Riparian Conservation Landscaping	Protections	Complete	12.27	
2020-2024	Non-Riparian Conservation Landscaping	Protections	Complete	12.50	

Listing of Watershed Restoration Efforts January 1, 2020 to July 1, 2024

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2020-2024	Septic Upgrades	Retrofit	Complete	10.24	
2021-2024	Inlet Cleaning (Increase over last permit)	Inlet Cleaning	Complete	5.27	
2021-2024	Street Sweeping (Increase over last permit)	Street Sweeping	Complete	12.30	
Completed toward next permit				1080.98	

Carroll County Projects in Planning

Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2025	Century High School Retrofit	Retrofit	Design	30.41	Liberty Reservoir
2025	Hampstead Valley 4	New Construction	Design	28.03	Loch Raven Reservoir
2025	Hampstead Valley 4 SR	Stream Restoration	Design	7.18	Loch Raven Reservoir
2025	Melstone Valley Retrofit	Retrofit	Design	3.11	S Branch Patapsco River
2025	Oklahoma Sediment	Outfall Stabilization	Under Construction	2.64	Liberty Reservoir
2025	St George's Gate Retrofit	Retrofit	Under Construction	10.13	Liberty Reservoir
2025	Tree Plantings 2025	Tree Planting	Planned	12.50	
2025	Windemere	Retrofit	Design	12.43	Liberty Reservoir
2026	Friendship Valley Elementary	Retrofit	Design	11.61	Liberty Reservoir
2026	Hampstead Valley 1 Retrofit	Retrofit	Design	17.09	Loch Raven Reservoir
2026	Meadow Ridge (2)	Retrofit	Design	7.22	Double Pipe Creek
2026	Public Safety Training Center	Retrofit	Design	19.27	Liberty Reservoir
2026	Roberts Field Wet Pond Retrofit	Retrofit	Design	43.01	Loch Raven Reservoir
2026	Roberts Field Wet Pond SR	Stream Restoration	Design	17.50	Loch Raven Reservoir
2026	Tree Plantings 2026	Tree Planting	Planned	12.50	
2027	Hampstead Valley 2 & 3 SR	Stream Restoration	Planned	13.50	Loch Raven Reservoir
2027	Manchester East	New Construction	Design	49.41	Prettyboy Reservoir
2027	Piney Ridge Village	Retrofit	Planned	11.21	S Branch Patapsco River
2027	Public Safety Complex	New Construction	Design	5.28	Liberty Reservoir
2027	Tree Plantings 2027	Tree Planting	Planned	12.50	
2027	Wakefield Valley Park	New Construction	Planned	5.54	Double Pipe Creek
2028	New Windsor Wetland	New Construction	Design	23.45	Double Pipe Creek
2028	North Carroll Farms 4	Retrofit	Planned	6.89	Prettyboy Reservoir

Carroll County Projects in Planning					
Year	Project Name	Project Type	Project Status	Impervious Area Credit	MDE Watershed
2028	Rt 97 Restoration	New Construction	Planned	7.65	Liberty Reservoir
2028	Tree Plantings 2028	Tree Planting	Planned	12.50	
2028	Windsong Estates	New Construction	Planned	11.76	Lower Monocacy River
2028	Winters Street	Retrofit	Planned	36.63	Liberty Reservoir
2029	Farm Museum Pond	Retrofit	Planned	38.73	Double Pipe Creek
2029	Hampstead Regional	Retrofit	Planned	95.66	Liberty Reservoir
2029	Tree Plantings 2029	Tree Planting	Planned	12.50	
2029	Valley Vista	New Construction	Planned	6.39	Prettyboy Reservoir
2030	Avondale Run Phase 2	Retrofit	Planned	5.81	Double Pipe Creek
2030	BTR (Black and Decker)	New Construction	Planned	46.35	Liberty Reservoir
2030	Edgewood 7	Retrofit	Planned	3.65	Liberty Reservoir
2030	Evapco	Retrofit	Planned	28.35	Upper Monocacy River
2030	Tree Plantings 2030	Tree Planting	Planned	12.50	
2030	Westminster Market	Retrofit	Planned	17.10	Liberty Reservoir
Anticipated impervious treatment				697.96	

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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 1,081 acres of impervious treatment for the current permit, the County has met 88% 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 3 (FY2025) is provided in **Table 11**. Next year, the County anticipates treating an additional 106 impervious acres, which will result in completion of 98% of the restoration requirement for the permit term.

Table 11
Year 3 BMP Portfolio – FY2025

BMP ID	BMP Name	BMP Type	# BMPs	Length Restored (ft), Lane miles (miles), or Mass Loading (lbs)	Impervious Acre Credits
CR22ALN000002	Oklahoma Sediment	STRE	1	1000	2.64
CR21RST000004	St George's Gate Retrofit	FSND	1	N/A	10.13
CR22RST000001	Century High School Retrofit	FSND	1	N/A	30.41
CR21RST000003	Hampstead Valley 4	FSND	1	N/A	28.03
CR21ALN000004	Hampstead Valley 4 SR	STRE	1	359	7.18
CR18RST000011	Melstone Valley Retrofit	MSGW	1	N/A	3.11
CR23RST000003	Windemere	FSND	1	N/A	12.43
Multiple	Tree Plantings 2025	FPU	1	N/A	12.50
Total Planned IA Credit:					106.41

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

The State of Maryland has developed a database of discharge data collected by several permit holders to characterize stormwater runoff associated with various stormwater management efforts. 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 and assessing impacts to the receiving water body, as described further below.

Study Area and Requirements

The discharge characterization for the BMP effectiveness monitoring is implemented as part of the Assessment of Controls outlined within Part IV.G. of the permit, 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. Through the conclusion of the County's fourth generation MS4 permit, monitoring had been located downstream of the Air Business Center stormwater management facility, just north of Westminster. With the issuance of the fifth-generation permit and changes in monitoring requirements and parameters from MDE, the County recognized this 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 to be retrofitted through the County's restoration program.

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 upper-

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most extent of the watershed. The location of the monitoring stations and other watershed features are shown in **Figure 4**.

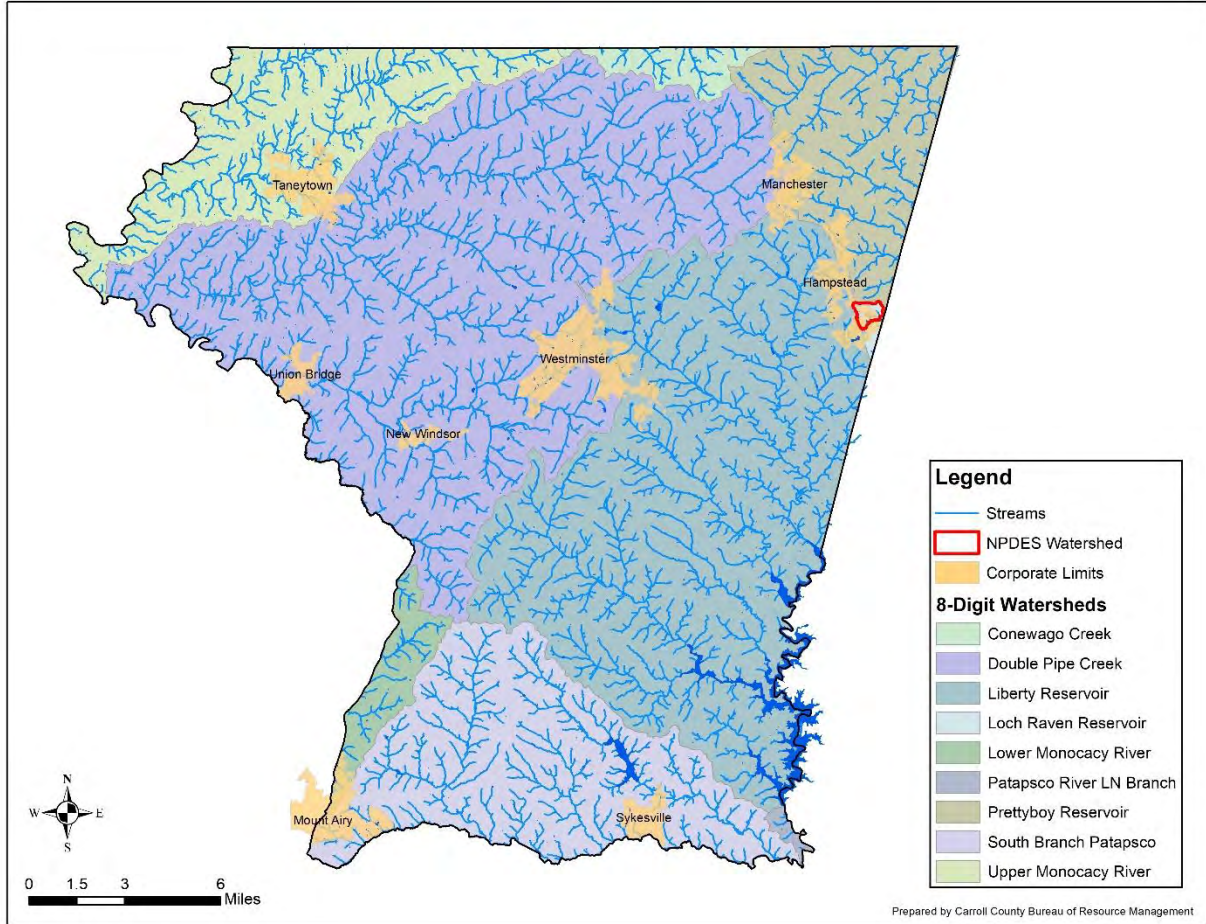


Figure 3: Carroll County NPDES Discharge Characterization Location

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

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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:

- 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 each reporting year above the instream station and consists of the following elements:

- Assessment of benthic macroinvertebrates to assess stream health.
- Completion of a spring habitat assessment; and
- Completion of a summer physical 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, located 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 RG3 Rain Gauge Data Logger, which is operated and maintained by County staff. This rain gauge is located approximately one quarter of a mile 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 for these sampling locations began in January 2023.

The outfall station is equipped with an ISCO model 4230 bubble flow meter that records hydrologic data by converting the hydrostatic pressure required to maintain the bubble rate to stream stage and 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 5-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 are 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. Distances between cross-sectional stations range from approximately 75 feet to 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 2024, 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.

Only one previous year of geomorphological data had been collected at this study location prior to this reporting year. 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. Required data are provided in the supplemental Monitoring Databases, as required by MDE.

Event dates for this reporting year are shown in **Table 13**. Twelve total sampling events are reported, eight of which were storm events. No flow was observed for the four outfall baseflow events. Dashes are populated in the table below for these occurrences. Temperature and pH measurements were not recorded for one event 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)
2023-07	8/3/23	Base Flow	-	-	7.48	62.8
2023-08	9/17/23	Storm	7.85	65.7	7.56	63.0
2023-09	9/23/23	Storm	8.02	64.2	7.60	59.4
2023-10	11/16/23	Base Flow	-	-	7.72	46.7
2023-11	11/21/23	Storm	7.61	46.2	7.29	44.3
2023-12	12/10/23	Storm	9.08	42.5	7.18	43.2
2024-01	1/9/24	Storm	8.78	39.9	7.35	40.3
2024-02	2/8/24	Base Flow	-	-	7.58	42.5
2024-03	2/12/24	Storm	8.33	44.9	7.41	43.8
2024-04	5/9/24	Storm	N/A	N/A	7.40	58.7
2024-05	5/18/24	Storm	8.25	64.0	7.95	57.9
2024-06	6/13/24	Base Flow	-	-	7.41	60.6

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 continue to 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 Field Sampling Manual (2024) 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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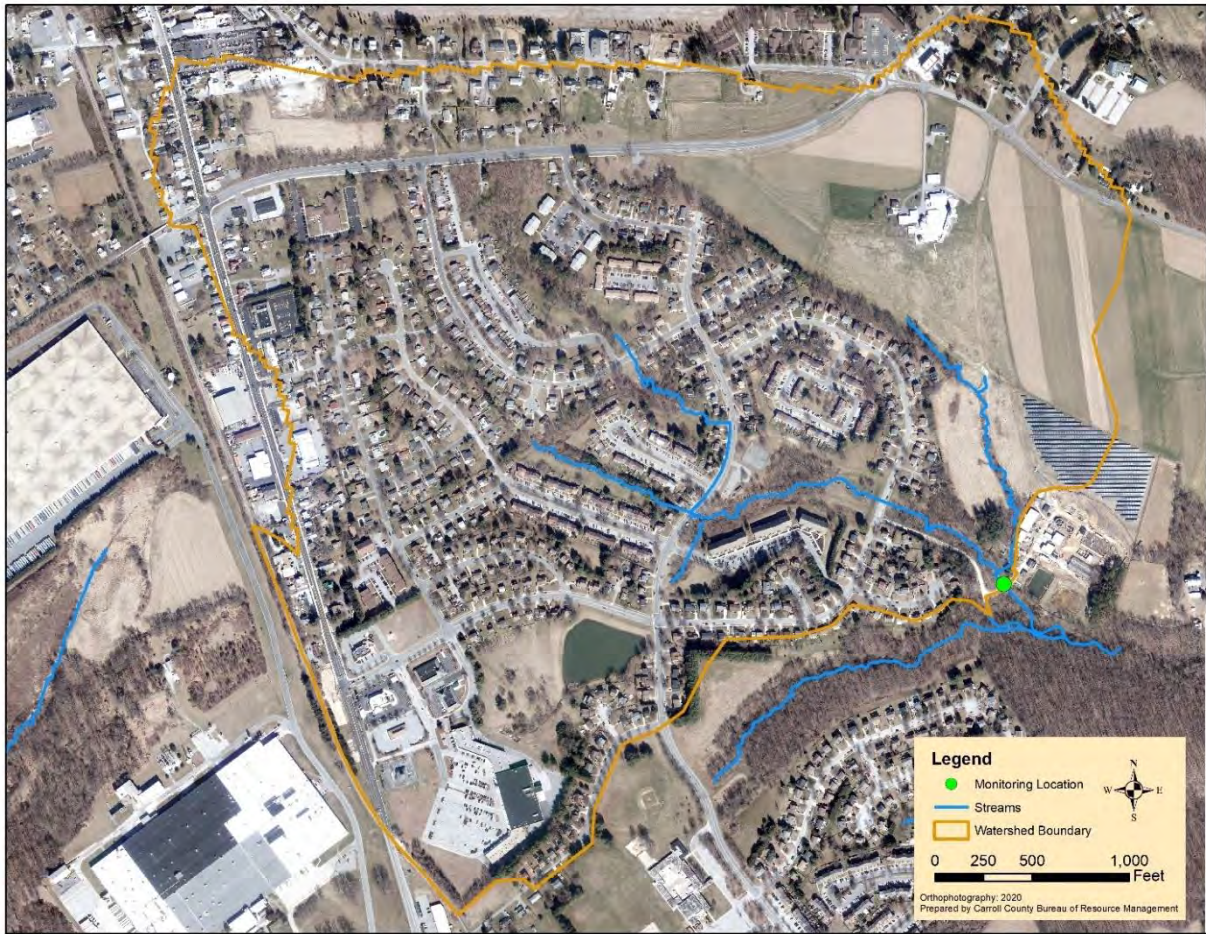


Figure 6: Biological Monitoring Station Locations

**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 2024 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 43.22 inches, a 4.66-inch deficit from the mean yearly total. Relative to mean monthly precipitation totals, December 2023 was the wettest month, with a surplus of 2.05 inches, while October 2023 was the driest month, with a deficit of 2.54 inches. Relative to the 30-year record (1991 – 2020), this reporting year was the twelfth-driest year for total precipitation.

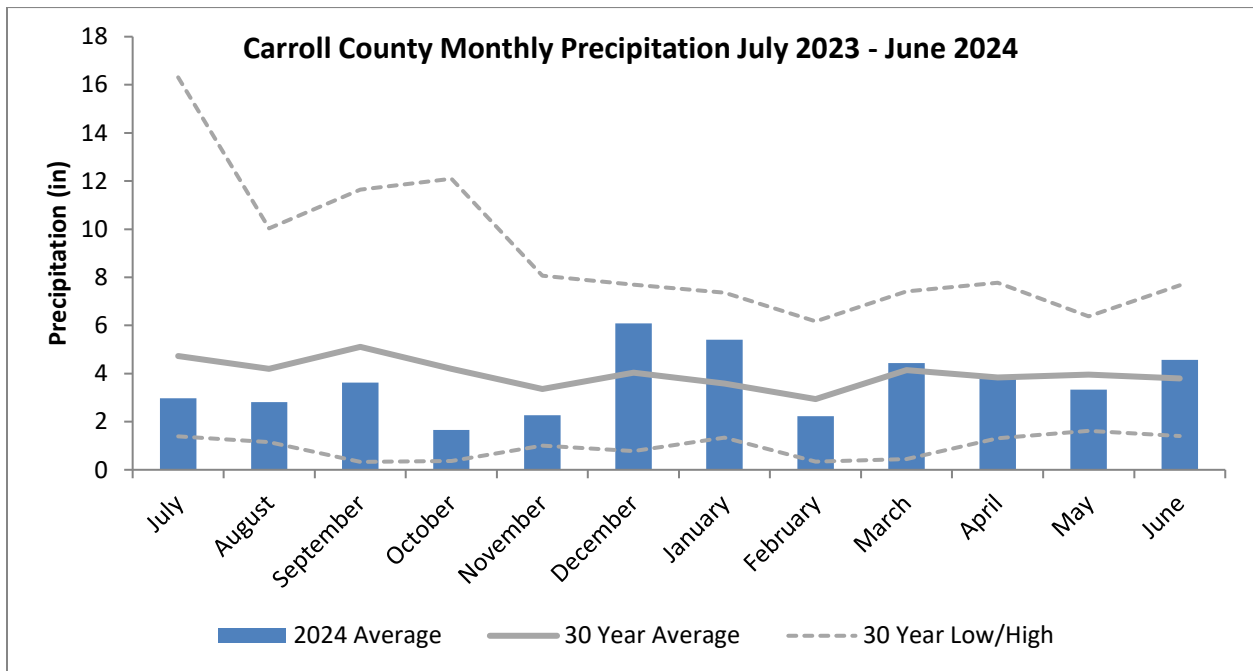


Figure 7: Monthly Precipitation Summary for the 2024 Reporting Period

Monthly temperature data for the 2024 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 56.1°F, which was 2.5°F warmer than the 30-year annual average and 1.1°F warmer than the 2023 reporting year. One month was cooler than average, November 2023, which averaged 0.8°F cooler than normal. 11 months were warmer than average temperatures, with a mean of 2.8°F warmer than normal. December 2023 and March 2024 were the warmest relative to each month's respective average temperatures, with a 5.0°F and 4.6°F increase above normal temperatures, respectively. Relative to the 30-year record (1991 – 2020), this reporting year was the warmest year.

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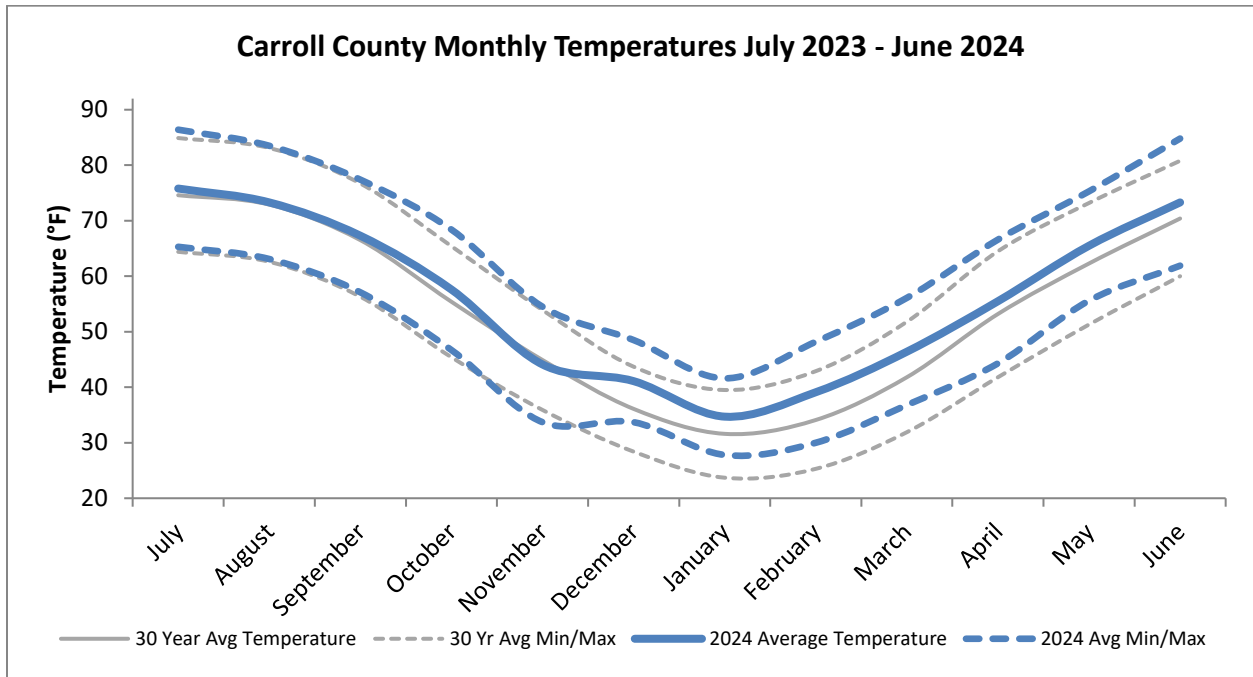


Figure 8: Monthly Temperature Summary for the 2024 Reporting Period

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 **Figure 9** and **Figure 10**, respectively. A deficit of 4.66 inches of precipitation was observed during this reporting period relative to the average year. While the period from February 2023 through June 2024 was only slightly below normal, most of the deficit occurred between July 2023 and November 2023. A surplus was observed for December 2023 and January 2024, however. The overall reporting period had a total of 115 individual storm events. The criteria for a storm event require 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 0.11 inches of observed precipitation over approximately three hours. This resulted in a typical rainfall intensity of 0.05 inches per hour. While there were numerous small events, there were only 27 events with greater than 0.5 inches of recorded precipitation, and only 13 of those were events greater than 1 inch. The 2.57 inches of observed precipitation during the storm event on December 17-18, 2023 was the largest of the reporting period. The storm event (greater than 0.1 inch total precipitation) with the highest precipitation intensity occurred on August 7, 2023, when 1.03 inches of rain was observed over 1.75 hours, a rainfall intensity of 0.85 inches per hour.

Typical stage heights at the outfall monitoring station were approximately 0 inches, or 0 gpm; the outfall station was dry the majority of reporting period due to the precipitation deficit. Peak discharge occurred on November 21, 2023, when a stage height of 9.0 inches was recorded. The resulting discharge was 5,741 gpm. During this storm event 1.89 inches of precipitation fell over 14 hours; peak discharge was observed after a 30-minute period of heavy rain during the event

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where a precipitation intensity of 0.63 inches of rain per hour was recorded. Four other storm events with a discharge greater than 1,000 gpm occurred during the reporting period. These occurred on August 7, 2023 (2,007 gpm), April 3, 2024 (1,853 gpm), July 9, 2023 (1,556 gpm), and December 17-18, 2023 (1,219 gpm).

Typical stage heights observed for the instream monitoring station were approximately 1.61 inches, or 220 gpm. Peak discharge at this monitoring station occurred during the storm event on December 17, 2023. During this storm, 2.57 inches of precipitation fell over 15.5 hours. Peak observed stage height was 14.5 inches, and peak discharge was 26,042 gpm. Peak observed discharge for most storm events at the instream station were less than 10,000 gpm; only one other storm event had a peak discharge measurement greater than 10,000 gpm. The storm event on April 3, 2024, had a peak discharge of 21,079 gpm, while there were seven additional events with peak discharge ranging from 10,000 to 20,000 gpm.

Total, seasonal, and categorical discharges for each monitoring station can be found in **Table 17**. Stormwater contribution from the outfall pond was only 10% of the total instream discharge for this reporting period. During baseflow, only 3% of the total instream discharge was contributed by the outfall, while this increased to 17% 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, 47% of the total flow volume at the instream station was observed during storm events, a 17% increase from the previous reporting year. 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 84% of the total flow volume during the reporting period was measured during these storm events.

Table 17
Categorical Discharges and Stage Heights

	Outfall	Instream	Difference	Outfall Contribution (%)
Total (gal)	14,360,045	149,570,471	135,570,471	10%
Avg Stage (in.)	0.33	1.61	1.28	-
Median Stage (in.)	0	1.54	1.54	-
Avg Q (gpm)	28	314	286	-
Median Q (gpm)	0	220	220	-
Summer Q (gal)	1,316,231	16,583,908	15,267,677	8%
Autumn Q (gal)	4,421,885	32,949,571	28,527,686	13%
Winter Q (gal)	5,334,846	55,448,673	50,113,827	10%
Spring Q (gal)	3,287,083	44,588,320	41,301,237	7%
Baseflow	2,315,141	78,986,534	76,671,393	17%
Storm Events	12,044,904	70,583,937	58,539,033	3%

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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 current pre-retrofit reporting year. As discussed above, the maximum discharge at the outfall monitoring station was 5,741 gpm on November 21, 2023. A total of 104,070 stage/discharge measurements were recorded during this reporting period. Of these measurements, 93% were below 100 gpm. Additionally, 60,559 of the stage/discharge measurements (58%) were 0 gpm during this period, where no flow was observed. Of the stage/discharge measurements recorded when flow was observed, 84% were still below 100 gpm. A 4.66-inch deficit was observed, particularly from July 2023 through November 2023.

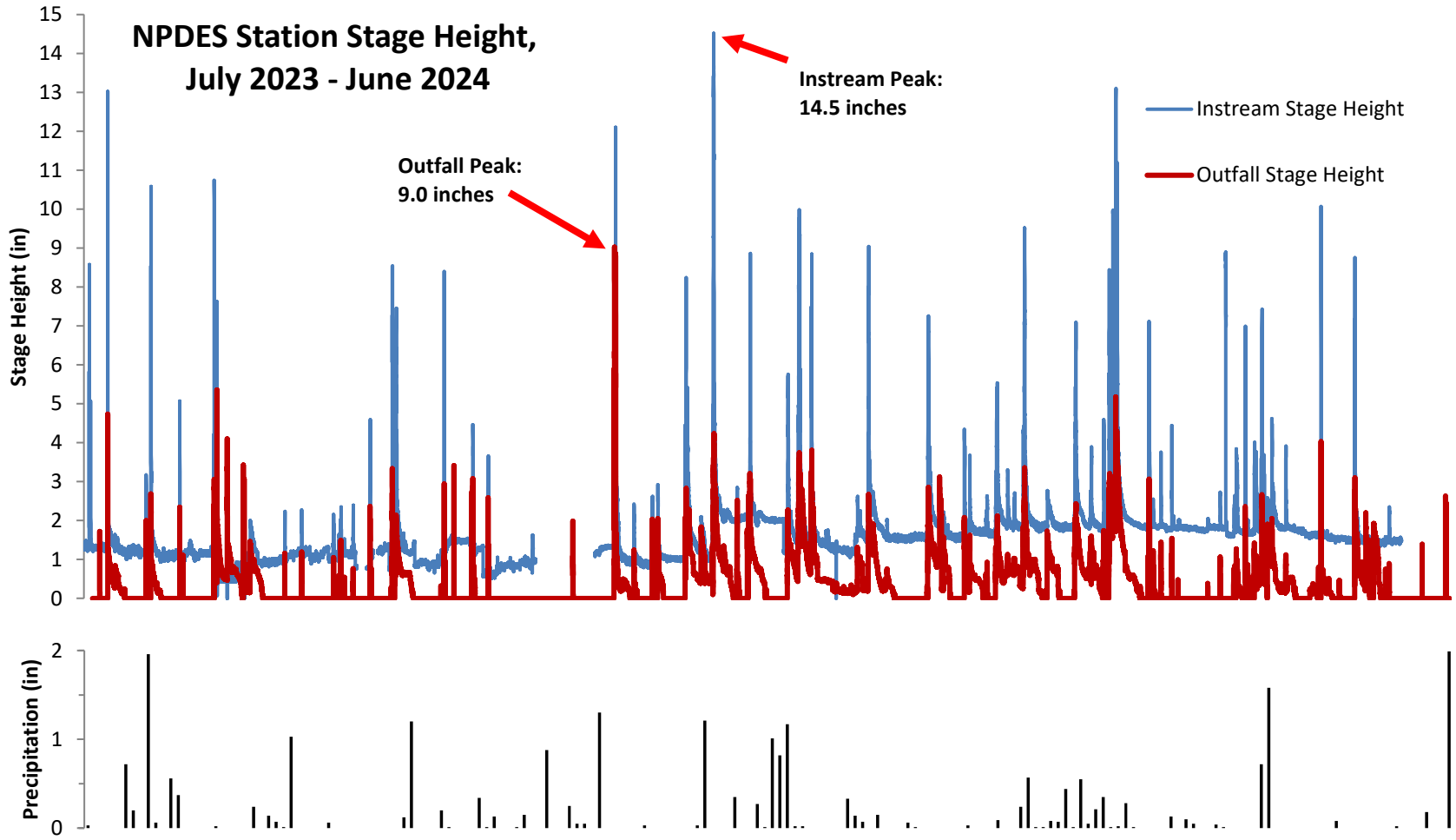


Figure 9: Stage Heights and Daily Precipitation for NPDES Monitoring Stations for the 2024 Reporting Year

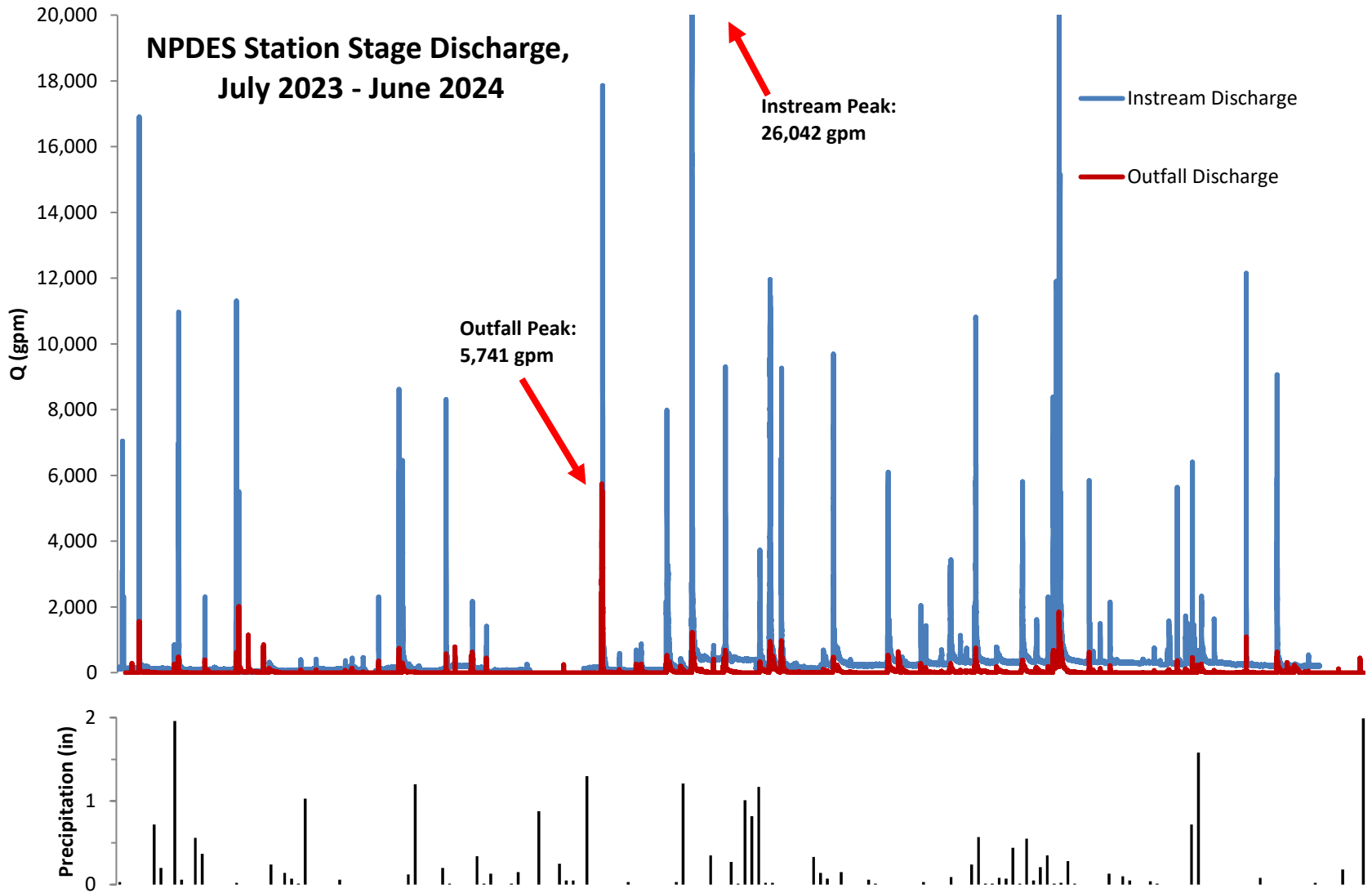


Figure 10: Discharge and Daily Precipitation for NPDES Monitoring Stations for the 2024 Reporting Year

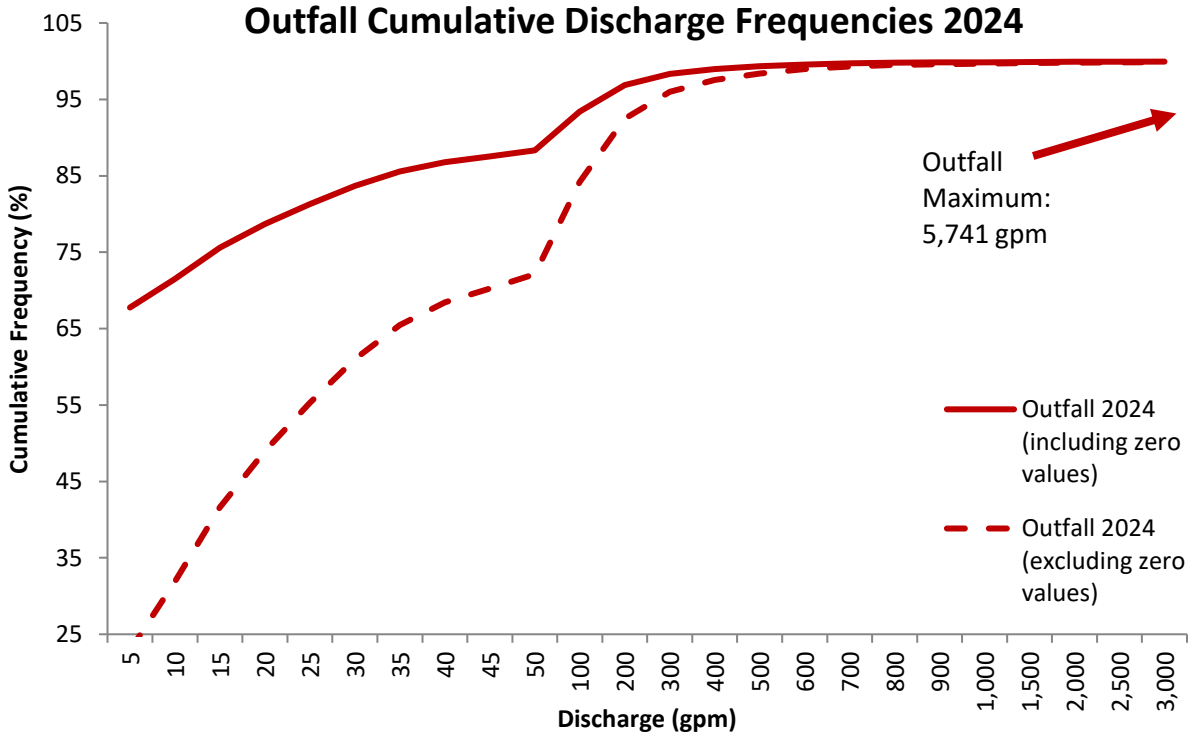


Figure 11: Outfall Discharge Frequencies for 2024 Reporting Year

An examination of individual events on the hydrograph demonstrates the distinct mechanisms driving changes in cumulative frequencies. As this is only the second reporting year for the long-term monitoring component at this study location, there is no before-after or year-year data to compare. **Figure 12** represents a typical hydrograph for a moderate high intensity storm event on August 7, 2023. For this storm event, 1.03 inches of precipitation was observed over 1.75 hours (0.59 in/hr), 83% of which was observed over the first 15 minutes of the event. Peak discharge typically occurs at the outfall station 10 to 15 minutes before the peak at the instream station. This event's relatively high intensity and prior local precipitation before this event however, likely caused the similar response times at both stations. 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. Prior to this event, the wet pond elevation was above the spillway and flow was observed at the outfall station.

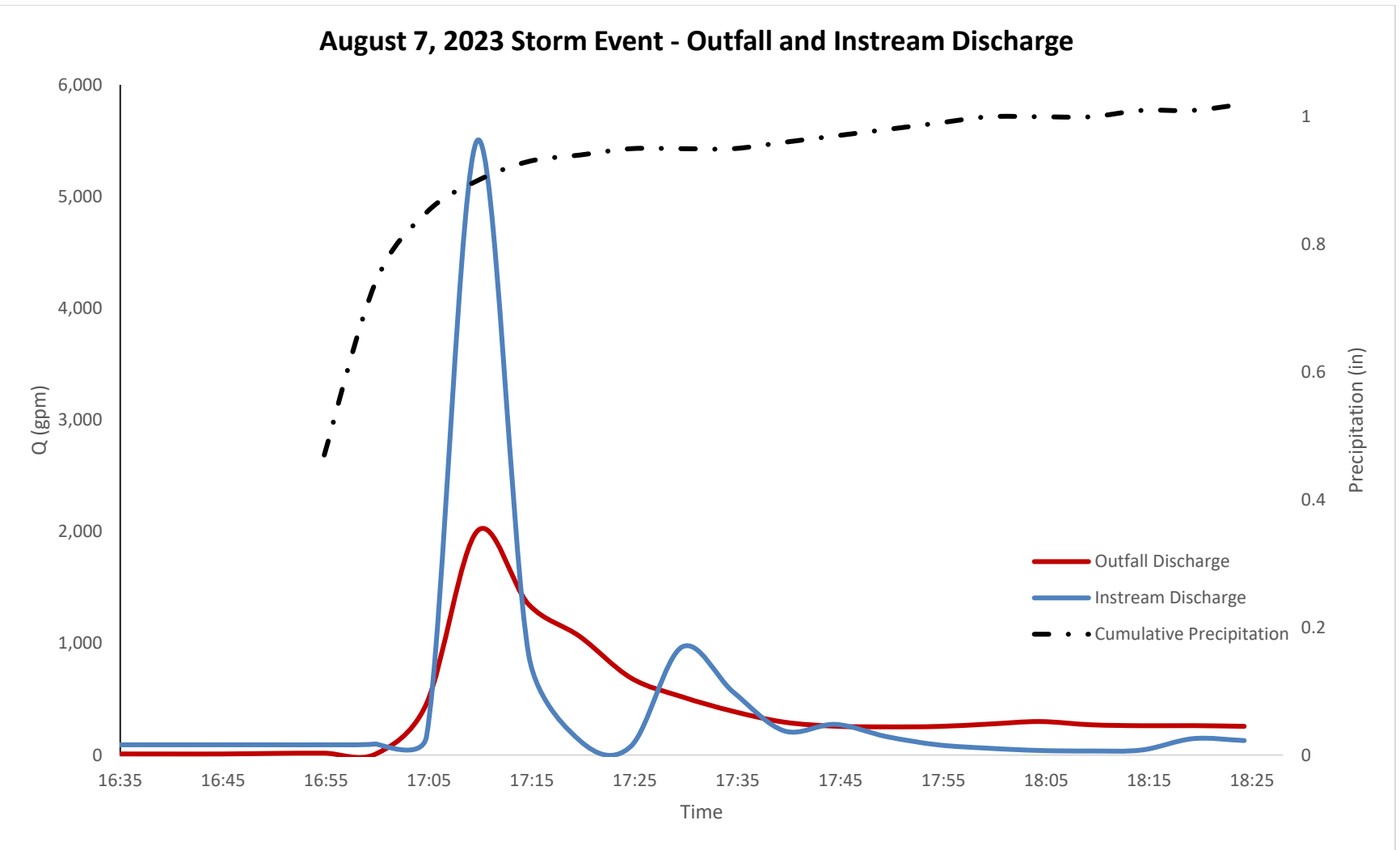


Figure 12: Individual Storm Event Hydrograph (8/7/2023, 1.03")

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Geomorphological

Geomorphological monitoring, through cross sectional surveys, is designed to detect changes to the stream's channel and banks over time. This reporting year was the first survey performed at the monumented cross sections following the 2023 baseline year survey. The nine flagged cross sections within the study site are shown in **Figure 5**, and results from this year's surveyed cross-section data collection are provided in Appendix D.

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 are 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 and 2024 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 and 2024 reporting years for each stream segment.

Figure 14 displays the longitudinal stream profile for elevation and depth of deposition or incision 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 for reference. Gradation changed only slightly at all of the cross-sections from the initial 2023 survey, and no location changed more than 0.2 foot. In the outfall segment, all three cross-sections surveyed showed very slight incision of no more than 0.1 foot. In the instream segment, slight incision was observed at most of the cross-sections, however, two cross-sections had some minor deposition. Cross-section 5, located just upstream of the location where the outfall segment converges with the instream segment, had 0.1 feet of deposition. Cross-section 9, located just upstream of the instream station, also had some minor deposition, aggrading 0.18 feet.

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Cross-section 1, located just downstream of the outfall monitoring station, had only very slight observed changes from 2023 to 2024. While the thalweg elevation decreased 0.06 feet, the cross-sectional profile aggraded 0.17 square feet. Only a very slight lateral change occurred at this cross-section during the year. Cross-section 2 also had a very slight decrease in thalweg elevation, although unlike cross-section 1, there was a moderate sediment loss at this location. 2.32 square feet of sediment was lost along the length of the cross-section, though most of this was from slight widening and not incision. Cross-section 3, located in the northwest section of the instream segment, displayed the largest change relative to the other cross-sections surveyed. Though only a very minor decrease in the thalweg elevation, 19.54 square feet of sediment was lost along the cross-section. The main channel widened by about 10 feet and along the whole left bank of the stream. Cross-section 4, located just downstream of cross-section 3, had a relatively minor decrease in thalweg elevation and minor aggradation across the cross-section; 0.7 square feet of sediment was gained, and the channel bank narrowed during the reporting year. Only slight changes were observed in cross-section 5 over the year. The shape of the stream channel remained largely the same, but aggradation occurred along the bottom of the channel, resulting in 0.67 square feet of sediment gain. Cross-section 6 had a more moderate aggradation during the year. About 2.37 square feet of sediment was gained along the cross-section. The channel moved approximately two feet towards the left bank, making the bank more vertical, and aggraded along the right bank. A similar pattern was observed at cross-section 7. Moderate aggradation occurred at 3.35 square feet along the right bank, though the stream channel did not move as in cross-section 6. Cross-section 8 showed little change on morphologic shape, but 1.82 square feet of sediment gain was observed along the cross-section. Cross-section 9, located upstream of the instream monitoring station, had a moderate amount of aggradation during the year. Similar to other cross-sections, aggradation occurred along the right bank, and the channel moved towards the left bank; the thalweg moved approximately eight feet.

Along both the outfall and instream segments, sediment was lost in the upstream cross-sections, while aggradation occurred at the downstream cross-sections (6-9). The stream channel at cross-sections 3, 6, 7, and 9 moved toward the left bank, however only cross-section 3 showed a loss of sediment. Slight widening was also observed at stations 2 and 3. The sum sediment loss of all the stations was 10 square feet; most of which was from cross-section 3 which had a relatively high sediment loss while other cross-sections showed moderate aggradation.

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Table 18
Cross Section Station Results for 2024

Instream Segment						Outfall Segment					
St.	Distance (ft)	2023 Elev	2023 Slope	2024 Elev	2024 Slope	St.	Distance (ft)	2023 Elev	2023 Slope	2024 Elev	2024 Slope
XS3	0	775.56	-	775.56	-	OF	0	773.80	-	773.80	-
XS4	411	770.16	1.31%	770.08	1.32%	XS1	321	763.35	3.26%	763.29	3.27%
XS5	654	753.45	2.56%	753.55	2.53%	XS2	488	754.89	1.73%	754.80	1.74%
XS6	299	745.04	2.81%	745.02	2.85%	XS6	483	745.04	2.04%	745.02	2.02%
XS7	72	743.88	1.61%	743.77	1.74%						
XS8	373	736.43	2.00%	736.41	1.97%						
XS9	419	727.53	2.12%	727.71	2.08%						
IS	261	722.07	2.09%	722.07	2.16%						

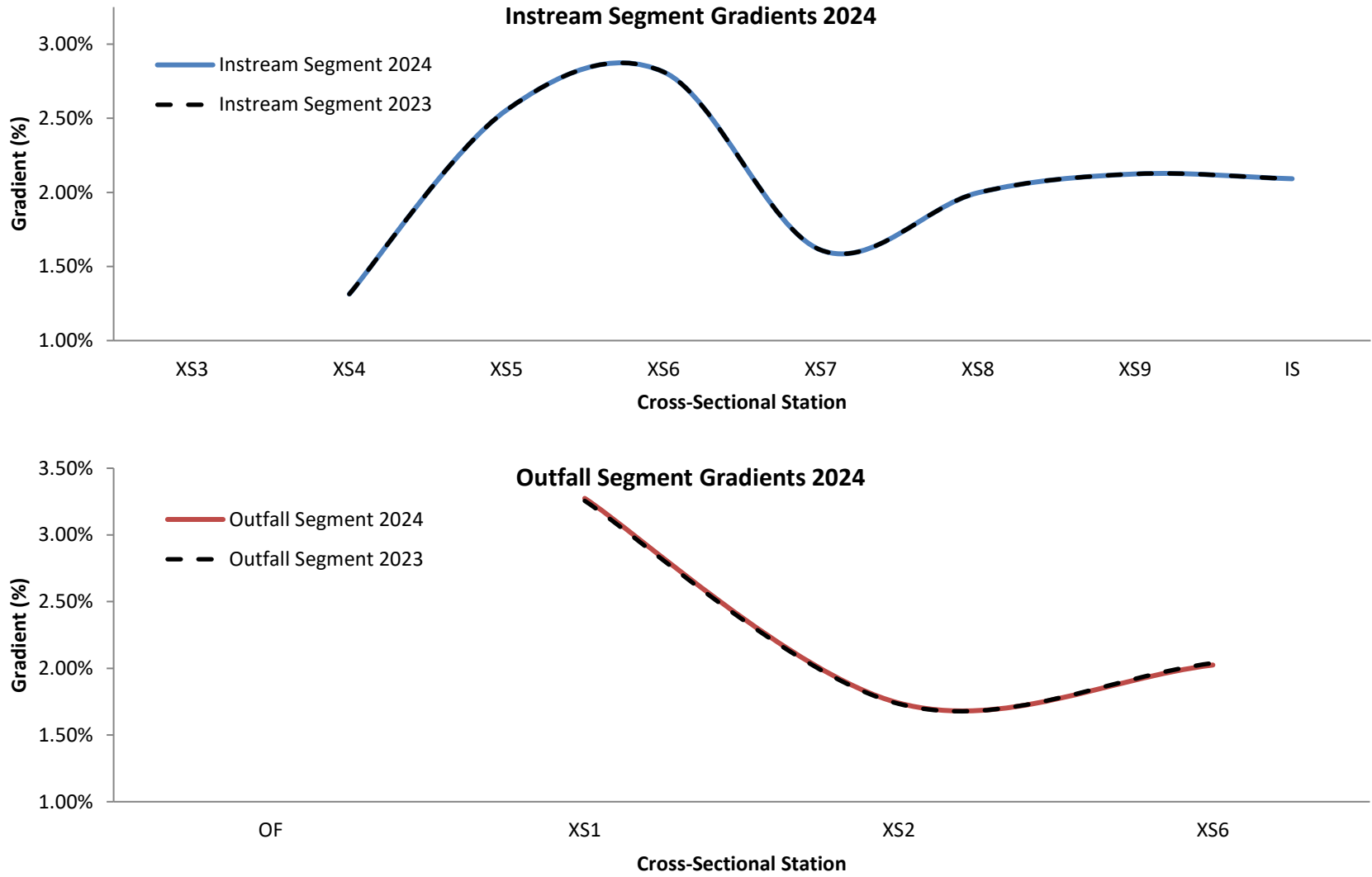


Figure 13: Instream and Outfall Stream Segment Gradients 2024

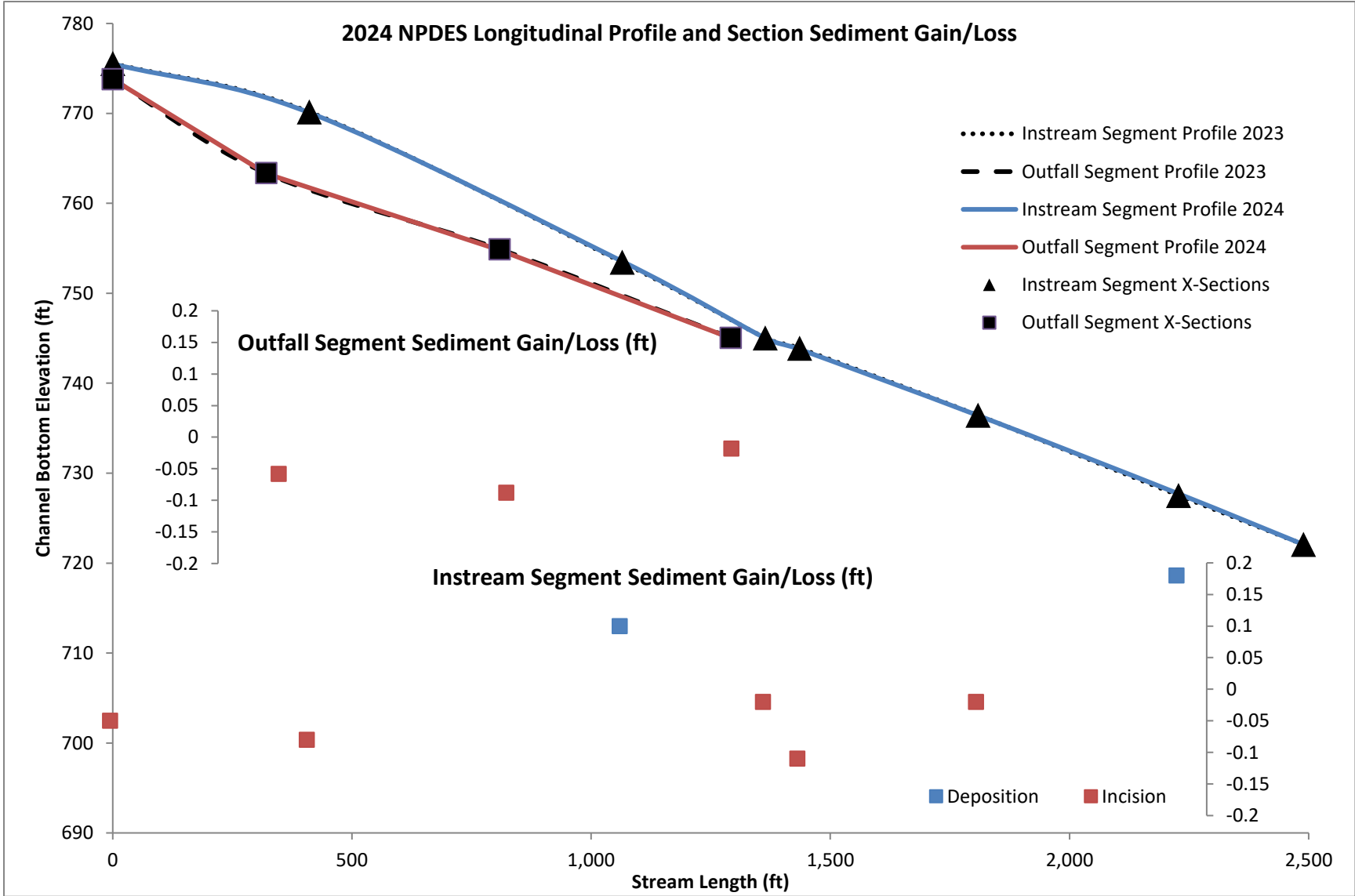


Figure 14: Longitudinal Profile for Instream and Outfall Stream Segments 2024

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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. Due to the outfall station having no flow during baseflow events, no comparison can be made between the two stations for baseflow conditions. During first flush of storm events, however, the water temperatures and pH measurements were consistently higher than those observed at the instream station. pH was observed to be higher at the outfall station for every storm event during this reporting year by an average of 0.8°F. Water temperatures were also higher at the outfall station by an average of 2.2°F. Water temperatures were observed up to 6.1°F higher at the outfall station during the warmer months due to solar heating of the wet pond and road pavement. During some of the colder months, the difference was smaller or the outfall temperatures were less than those observed at the instream station.

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)
2023-07	8/3/23	Base Flow	-	-	7.48	62.8
2023-08	9/17/23	Storm	7.85	65.7	7.56	63.0
2023-09	9/23/23	Storm	8.02	64.2	7.60	59.4
2023-10	11/16/23	Base Flow	-	-	7.72	46.7
2023-11	11/21/23	Storm	7.61	46.2	7.29	44.3
2023-12	12/10/23	Storm	9.08	42.5	7.18	43.2
2024-01	1/9/24	Storm	8.78	39.9	7.35	40.3
2024-02	2/8/24	Base Flow	-	-	7.58	42.5
2024-03	2/12/24	Storm	8.33	44.9	7.41	43.8
2024-04	5/9/24	Storm	N/A	N/A	7.40	58.7
2024-05	5/18/24	Storm	8.25	64.0	7.95	57.9
2024-06	6/13/24	Base Flow	-	-	7.41	60.6

In March 2023, a YSI EXO1 sonde was deployed upstream of the instream station to record the required continuous parameters. At 15-minute intervals, temperature, pH, and specific conductance are recorded *in situ*. The measurements are displayed in **Figure 15** below. Data for two example storm events are displayed in **Figure 16** and **Figure 17**. **Figure 16** shows discharge, temperature, pH, and specific conductance for a storm event on January 6, 2024, during which 0.9 inches of snow/rain was observed. **Figure 17** shows discharge, temperature, pH, and specific conductance for a storm event on July 21, 2023, during which 0.76 inches of rain was observed.

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The overall temperature trend decreased from September to February and increased from February to September, as expected. Typical diurnal cycles were also observed. Stormwater runoff during the warmer time periods generally increased the water temperature within the stream, but sometimes during winter events, temperature decreased at the beginning of storm events. For example, during the storm on January 6, 2024, shown in **Figure 16**, instream temperatures dropped four degrees through the storm. During the summer storm event on July 21, 2023, shown in **Figure 17**, temperatures increased four degrees, with the peak coinciding with peak discharge.

There was no overall significant trend for pH during this time, though expected diurnal 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 January 6, 2024, shown in **Figure 16**, pH dropped by 0.2 at the onset of the event, coinciding with a spike in specific conductance. As the storm continued, pH increased by 0.35, with the peak coinciding with the hydrologic peak at the instream station. During the storm event on July 21, 2023, shown in **Figure 17**, pH increased by 0.3 during the hydrologic peaks at the instream station and fell back to baseflow levels as discharge decreased.

There was also no overall long-term trend for specific conductivity during this time, though expected diurnal cycles were present. The 2023-2024 winter was relatively warm, but several de-icing events did occur, and several large short-term spikes of elevated specific conductance were observed at the instream station. Conductance was higher at night and lower during the day, the inverse of pH. Specific conductance displayed an inverse relationship to stormwater volume relative to temperature and pH. As stormwater dilutes the ions present, electrical conductance drops. During the storm event on January 6, 2024, shown in **Figure 16**, specific conductance at the instream station peaked during the ascending hydrologic limb of the storm event, changing from 638 μ S/cm to 3,614 μ S/cm. During the hydrologic peak at the instream station and the remainder of the event, specific conductance decreased back to baseline levels as the road salts were diluted. During the storm event on July 21, 2023, shown in **Figure 17**, there was no increase in specific conductance. As the storm event proceeded, specific conductance dropped from 650 μ S/cm to 60 μ S/cm as dilution occurred, before increasing back to baseline levels after the storm event concluded.

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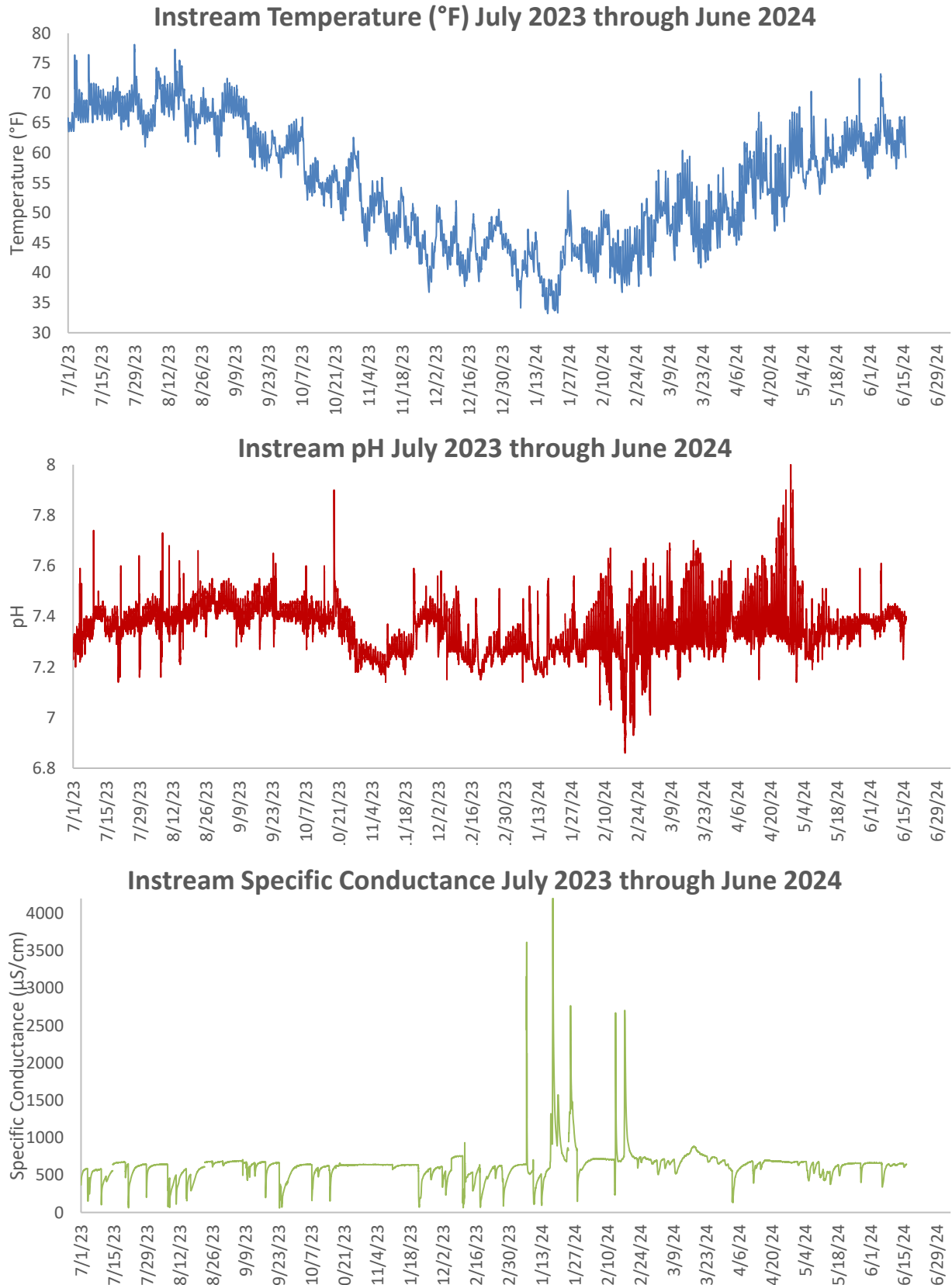


Figure 15: 2024 Instream Temperature, pH, and Specific Conductance Measurements

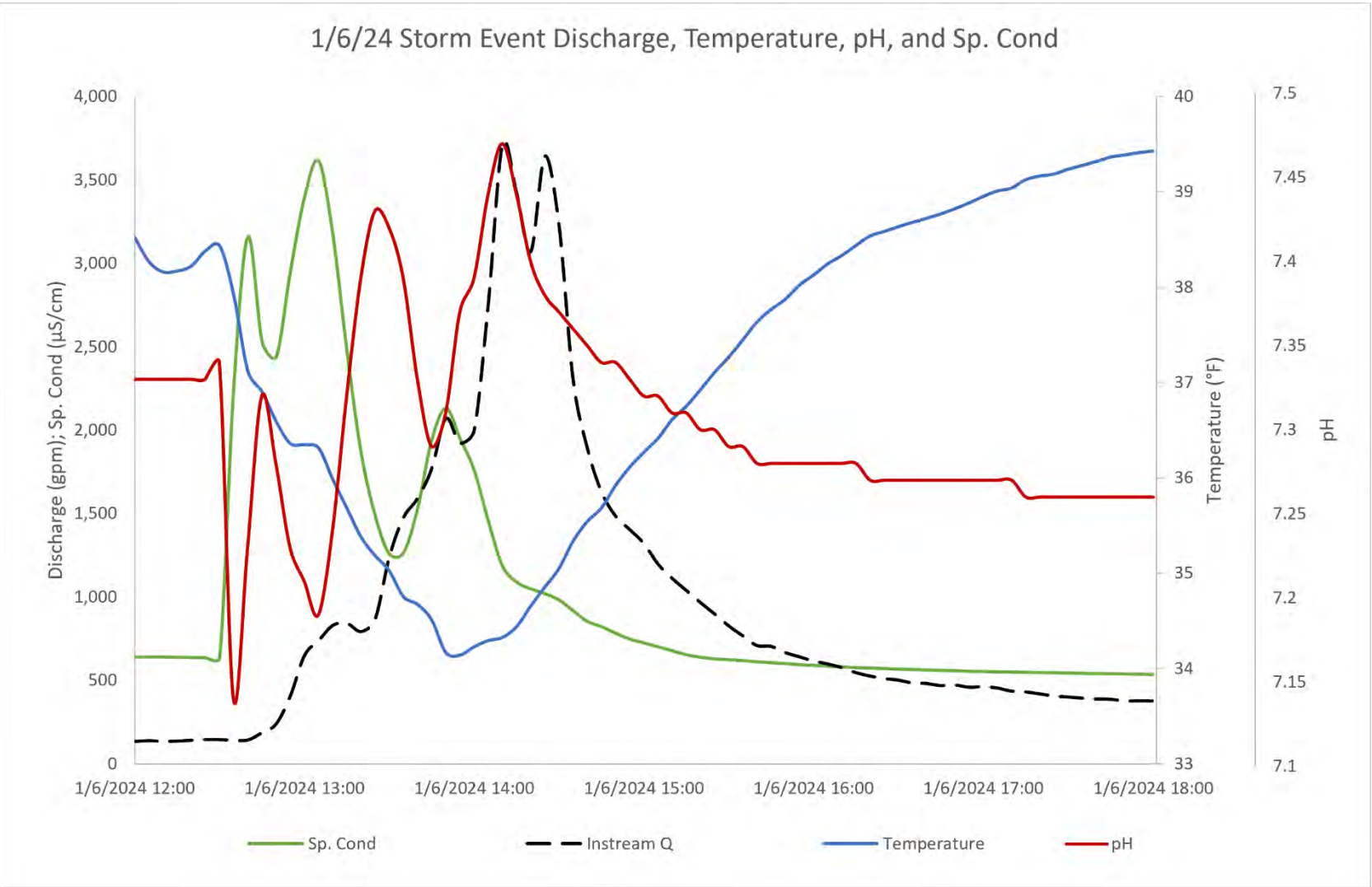


Figure 16: Discharge, Temperature, pH, and Specific Conductance During 1/6/24 Storm Event

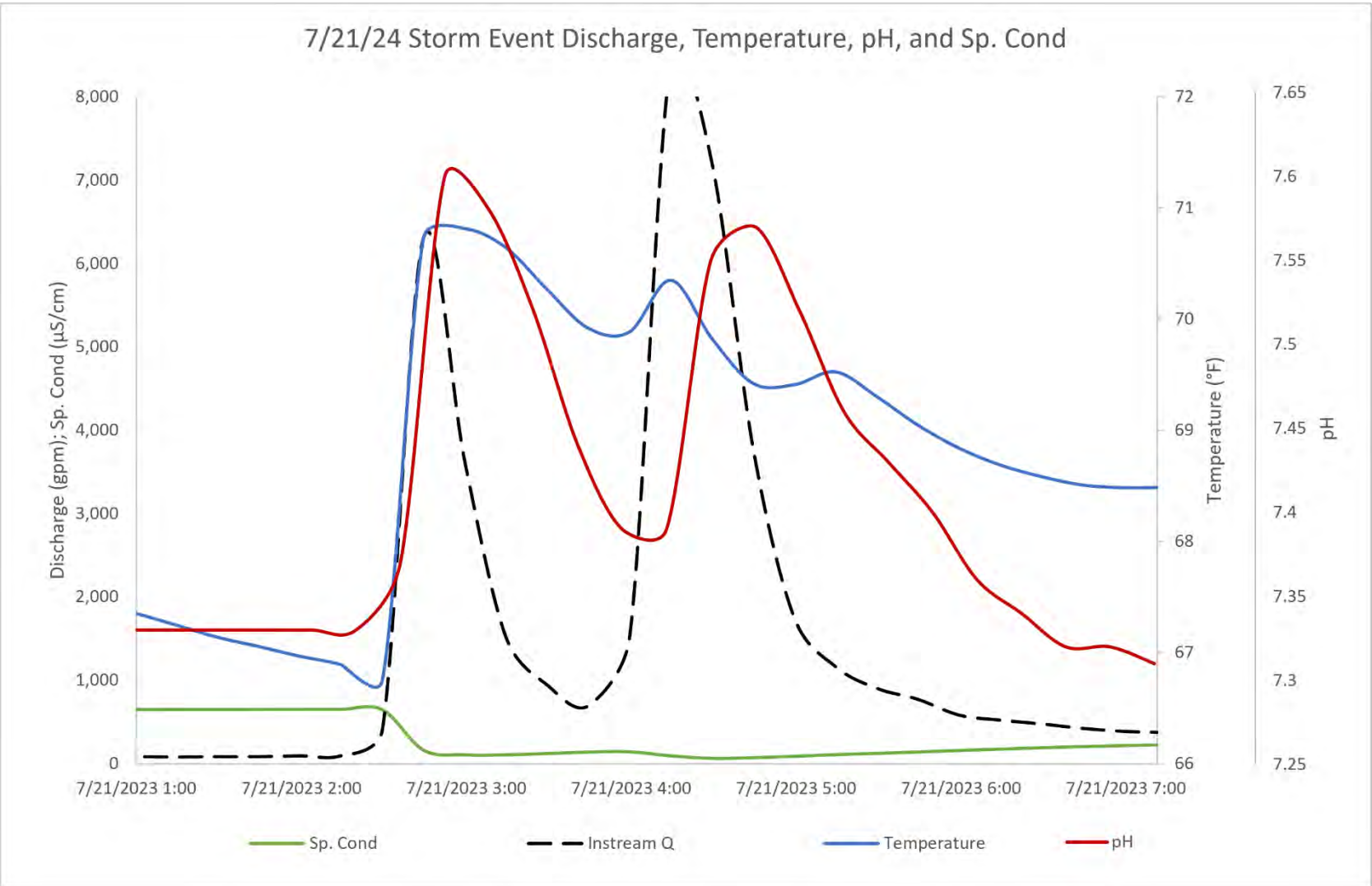


Figure 17: Discharge, Temperature, pH, and Specific Conductance During 7/21/24 Storm Event

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Event Mean Concentrations

The event mean concentration (EMC) values and ranges for the eight storm flow events for this reporting year are displayed in **Table 20**. Of the observed analytes, nitrate/nitrite, total nitrogen, and chloride were the only three to show a significant difference between the two stations during storm events for this reporting year. In this case, nitrate/nitrite was significantly greater at the instream station; Total nitrogen (TN) was significantly greater at the instream station also, primarily due to the nitrate/nitrite component used to calculate TN. When constituent analytes used to calculate TN were below detection, the reporting limit was used. Chloride was also greater at the instream station during storm events. It should be noted that many E. coli samples collected during the reporting year were not analyzed within the parameters holding time and are likely reported as greater than the actual conditions. EMC values and ranges for the four baseflow events for this reporting year are displayed in **Table 21**. The minimum EMC for each analyte at the outfall station was zero because the Robert’s Field outfall was dry during all four baseflow samples during this reporting year. For many analytes at the instream station, the reporting limit was used as the minimum EMC value, which represent samples below detection.

Table 20
EMC Values for Storm Events

Event Mean Concentration		Outfall Station			Instream Station			Significance
Analyte	Units	Mean	Min	Max	Mean	Min	Max	p-value
BOD	mg/L	10.07	2.76	30.36	7.69	2.25	31.59	0.203
TSS	mg/L	35.00	8.91	63.00	71.28	11.50	218.01	0.215
Ortho-P	mg/L	0.06	0.01	0.19	0.07	0.01	0.13	0.827
Total P	mg/L	0.18	0.08	0.31	0.22	0.07	0.39	0.390
Ammonia	mg/L	0.21	0.20	0.26	0.20	0.20	0.20	0.351
NO₂/NO₃	mg/L	0.2	0.05	0.70	2.32	0.77	4.55	0.002
TKN	mg/L	0.74	0.50	1.36	0.67	0.50	0.93	0.611
TN	mg/L	0.94	0.55	1.66	3.00	0.55	5.48	0.001
Chloride	mg/L	37.90	1.28	113.40	72.35	27.44	176.29	0.012
E. coli	Mpn/dL	5,128	40	25,125	2,611	1,919	4,437	0.570

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Table 21
EMC Values for Baseflow Events

Event Mean Concentration		Outfall Station			Instream Station			Significance
Analyte	Units	Mean	Min	Max	Mean	Min	Max	p-value
BOD	mg/L	0	0	0	2.00	2.00	2.00	-
TSS	mg/L	0	0	0	1.00	1.00	1.00	-
Ortho-P	mg/L	0	0	0	0.01	0.01	0.01	-
Total P	mg/L	0	0	0	0.04	0.02	0.06	-
Ammonia	mg/L	0	0	0	0.20	0.20	0.20	-
NO ₂ /NO ₃	mg/L	0	0	0	6.93	6.40	7.40	-
TKN	mg/L	0	0	0	0.50	0.50	0.50	-
TN	mg/L	0	0	0	7.43	6.90	7.90	-
Chloride	mg/L	0	0	0	142.50	130.00	150.00	-
E. Coli	Mpn/dL	0	0	0	106	20	210	-

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 provided in **Table 22**. 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 are overestimated, as the reporting limit value is 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 2024 report. Outfall contributions of several parameters were less than 10% of instream loadings; these parameters include TSS, nitrate/nitrite, TN, and chloride. Only 1% of estimated nitrite/nitrate loading at the instream station was contributed by the outfall station. 5% of the total instream loading for TN was contributed by the outfall station; however, with the large number of left censored TKN samples for both stations, this estimate is largely replicative of nitrite/nitrate. Nitrate/nitrite EMC was one of only two analytes that were significantly different between stations. TSS and chloride also have outfall contributions of less than 10%, with 8% and 9% contributions, respectively. The baseflow loadings for nitrate/nitrite and chloride at the instream station were 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 9% of the total chloride loading at the instream station. While generally low, this loading is 4% higher than the previous reporting period, which was warmer during the winter season. It would be expected that this

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contribution would increase during years with winter seasons with numerous snow or ice events. Other analyte contributions ranged from 14% to 22% during storm events, with BOD and TKN being the analytes with the greatest contribution from the outfall monitoring station. It should be noted that many E. coli samples collected during the reporting year were not analyzed within the parameter's holding time and are likely reported as greater than the actual conditions.

Table 22
Annual Pollutant Loads

Annual Pollutant Loading (lbs/yr; mpn/year for E. coli)											
	Type	BOD	TKN	NO ₂ /NO ₃	Am	TN	TP	OP	TSS	Cl	E. coli
Outfall	Base	-	-	-	-	-	-	-	-	-	-
	Storm	1,012	75	20	21	94	18	6	3,519	3,810	2.34x10 ¹²
	<i>Total</i>	>1,012	>75	>20	>21	>94	>18	>6	>3,519	>3,810	>2.34x10 ¹²
Instream	Base	1,318	330	4,568	132	4,898	26	7	659	93,931	1.80x10 ⁹
	Storm	4,532	396	1,367	118	1,767	131	39	41,985	42,615	1.15x10 ¹²
	<i>Total</i>	5,850	726	5,935	250	6,665	157	46	42,644	136,546	1.15x10 ¹²

Seasonal Pollutant Loads

Seasonal discharge for each monitoring station is provided in **Figure 18**. 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 winter season had the greatest stormwater volume, followed by spring, autumn, then summer. This corresponds to the surplus/deficit for each season during this reporting period. Seasonal loadings based on the EMC values and seasonal discharges from **Figure 18** are located in **Table 23**. It should be noted that E. coli EMC values were not calculated for the storm events during summer 2023. Prior to autumn 2023, E. coli was analyzed as a first flush sample only.

For the outfall monitoring station, loading was the lowest during the summer season, which corresponds to the significant precipitation deficit during that season. TKN, nitrate/nitrite, TN, and TSS were highest during the spring season, despite being the season with the second largest stormwater volume. This season had some of the larger storm events of the reporting period, however. Chloride loading was much greater during the winter season, followed by the spring season, likely due to road deicers applied near the outfall monitoring station and the increased stormwater volume during those two seasons. TP, Ortho-P, and BOD were the only two analytes to have the largest loadings in autumn. It should be noted that only storm event EMC values were used to estimate loadings for the outfall station as no flow was observed during baseflow events. Loading at the instream station followed a very similar paradigm as the outfall station for BOD, nitrate/nitrite, TN, and chloride. TKN, TP, and Ortho-P loadings, however, were largest in the winter season. Chloride loading patterns were almost identical to the outfall station per season, which follows the seasonal stormwater volume, but were likely influenced by seasonal deicing events, for which this year had several. Approximately 15,000 more pounds of chloride was estimated in the winter than summer. Baseflow loading was relatively even seasonally for chloride, but storm event EMC values were much greater during the winter and spring seasons, again suggesting influence from roadway deicers.

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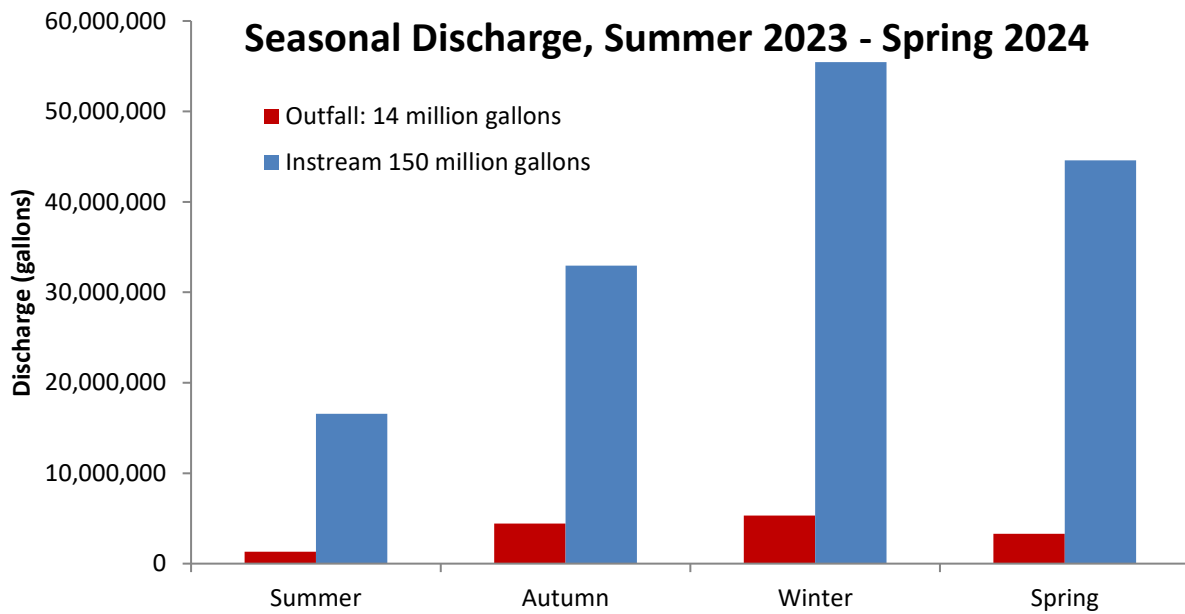


Figure 18: Seasonal Discharge for the 2024 Reporting Year

**Table 23
Seasonal Pollutant Loads for the 2024 Reporting Year**

Seasonal Pollutant Loading (lbs; mpn for E. coli)											
	Season	BOD	TKN	NO ₂ /NO ₃	Am	TN	TP	OP	TSS	Cl	E. coli
Outfall	Summer	34	4	2.0	1	6	1.0	0.2	207	52	-
	Autumn	584	17	3.6	7	21	6.8	3.5	650	623	2.8x10 ⁵
	Winter	168	18	2.3	7	20	3.3	0.6	810	2,726	2.2x10 ⁴
	Spring	308	31	6.5	6	38	6.1	2.0	1,477	1,169	3.7x10 ⁶
	Total	>1,094	>70	>14.5	>21	>85	>17.1	>6.3	>3,143	>4,569	>4x10⁶
Instream	Summer	329	49	342	15	392	16.0	4.0	5,640	6,718	1.4x10 ¹⁰
	Autumn	2,706	120	422	37	542	42.2	13.7	17,218	9,936	1.6x10 ¹²
	Winter	1,241	177	630	59	806	57.9	23.0	11,724	32,370	2.4x10 ¹²
	Spring	577	130	961	42	1,091	16.1	2.4	2,407	21,840	2.2x10 ¹²
	Total	4,854	476	2,355	153	2,830	132.0	43.0	36,989	70,864	6.3x10¹²

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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 from 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 are provided in **Table 15**.

The biological health of the stream reach upstream of the instream monitoring station is summarized by **Table 24**. For the 2024 reporting year, the stream reach received a stream health rating of poor and an IBI score of 2.00. The number of taxa category scored a 5 for this reporting year, with a total of 28 taxa observed. The stream reach scored fair for the quantity of Ephemeroptera, Plecoptera, and Trichoptera taxa, with only six unique taxa observed. This is particularly true for the quantity of Ephemeroptera taxa; only one individual from the taxon *Baetis*, a moderately tolerant taxon, was found. All other metrics scored poorly. Compared to the previous year, for which the stream reach received an overall score of 3.00, only one metric was improved – total number of taxa. However, the overall number of individuals collected dropped from 134 to 120. While the score for the number of EPT stayed the same, the percent of clingers dropped from 36.4% to 21.6%, resulting in a poor score.

Table 24
IBI Score for the 2024 Reporting Year

Metric	Result	Score
Number of Taxa	28	5
Number of EPT	6	3
Number Ephemeroptera	1	1
% Intolerant Urban	2.6	1
% Chironomidae	74.2	1
% Clingers	21.6	1
Total Score		12
IBI Score		2.00
Narrative Rating		Poor

The habitat scoring was conducted during the summer index period on September 17, 2024, just upstream from the instream monitoring station. This occurred at the same location as the biological sampling that was conducted during the Spring of 2024. The habitat assessment results for the instream station are summarized in **Table 25**. The scores are out of a maximum 160 points, based on the eight parameters in **Table 16**. For the 2024 reporting year, the instream station had an overall score of 92 out of a total possible 160. The parameters were split between the marginal and sub-optimal category. The weakest parameter for the instream station was for the site’s trash rating, which was “9 – Marginal,” due to the abundant presence of trash throughout the stream. Pool/glide/eddy quality and velocity/depth diversity were also two of the lowest-rated categories of habitat parameters. Gravel/cobble particles within the stream section were surrounded by approximately 35% by fine sediments. The parameter with the highest

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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.

Table 25
Summer 2024 Habitat Assessment Results

Parameter	In-stream	Category
Instream Habitat	11	Sub-Optimal
Epifaunal Substrate	11	Sub-Optimal
Velocity/Depth Diversity	10	Marginal
Pool/Glide/Eddy Quality	10	Marginal
Riffle/Run Quality	11	Sub-Optimal
Embeddedness	13	Sub-Optimal
Shading	17	Optimal
Trash Rating	9	Marginal
<i>Total Score (max. of 160)</i>	92	
<i>Score (percent)</i>	58%	

2. Watershed Assessment Monitoring

The County submitted the Watershed Assessment Monitoring Plan to MDE for review on April 30, 2024, and received approval from the Department on July 18, 2024. Watershed Assessment Monitoring will assess water quality at the watershed level within all TMDL watersheds to detect trends in stream biology and habitat, bacteria, and chlorides. Monitoring will follow all requirements and parameters identified within MDE’s October 2021 NPDES MS4 monitoring guidelines for BMP Effectiveness and Watershed Assessment Monitoring. All respective monitoring data will be reported utilizing the template spreadsheets developed by 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 26 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 26
Operating Expenses

Operating Program Elements	Expenditures
Administration - Salaries and Benefits	\$1,419,206.58
Operation and Maintenance - Mowing, Gasoline, Repairs/Parts	\$147,166.98
Public Education and Outreach	\$3,108.79
Lab Testing/Supplies, Contract Services, Small Equipment, Conferences	\$40,361.84
Debt Service Interest	\$559,802
Total Operating Expenditures for FY2024	\$2,169,646.19

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 in this program, provided in **Table 27**, are principally associated with the permit’s Watershed Assessment and Restoration requirements.

Table 27
Capital Expenses

Capital Programs	Expenditures
Watershed Assessment and Improvement (NPDES)	\$2,710,316
Stormwater Facility Renovations	\$41,500
Total Capital Expenditures for FY2024	\$2,751,816

Cumulative capital expenditures for the program since 2005 can be found in **Table 28**. The approved FY2025-2030 CIP estimates of program funds can be found in **Table 29** and **Table 30**. It is important to note that the funding beyond FY2025 is subject to future budget review and approval processes. Therefore, no guarantee is made to future appropriations beyond FY2025.

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Approved Community Investment Plan 2025 – 2030

Table 28
Total NPDES MS4 Capital Expenditures
Carroll County, Maryland
July 15, 2005 through June 30, 2024

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
7/1/23 to 6/30/24	\$2,751,816.39
Total permit expenditures, to date	\$53,490,702.47
Grants received	\$16,744,320.95
Actual County expenditures	\$36,746,381.52

Table 29
Watershed Assessment and Improvement (NPDES)

Program Elements	FY25	FY26	FY27	FY28	FY29	FY30	Prior Allocation	Total Cost
Engineering & Design	375,000	505,000	355,000	500,000	725,000	400,000		2,860,000
Land Acquisition								0
Site Work								0
Construction	3,182,010	3,185,010	3,469,500	3,460,720	3,400,000	3,900,000	16,602,709	37,199,949
Equipment & Furnishings								0
Other								0
Total	3,557,010	3,690,010	3,824,500	3,960,720	4,125,000	4,300,000	16,602,709	40,059,949

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The Stormwater Management Facility Renovation Program CIP (**Table 30**) has renovated 64 of the 194 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 \$1,981,500 has been spent on this renovation effort.

Table 30
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
Total	300,000	300,000	300,000	300,000	300,000	300,000	0	1,800,000

Table 31 provides a project list and the status of the individual projects in the approved capital budget for the Stormwater Management Facility Renovation Program.

Table 31
Stormwater Management Facility Renovation Program
2016-2030

<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
2024	Clipper Hills	South Branch Patapsco
2024	Arthur's Ridge	South Branch Patapsco

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2024	CC Commerce Center	Liberty Reservoir
2024	Hickory Ridge	Liberty Reservoir
2024	Oak Creek Phase I	Liberty Reservoir
2024	Candlelight	South Branch Patapsco
2024	Jenna Estates Sec.2, Ph I	South Branch Patapsco
Planned Projects		
Year	Project Name	MDE 8-Digit Watershed
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
2030	Spruce Meadows WQ #3	Liberty Reservoir

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2030	Spruce Meadows Pond #4	Liberty Reservoir
2030	Doves Crest Swale #1	Double Pipe Creek
2030	Doves Crest Swale #2	Double Pipe Creek
2030	Doves Crest Infiltration	Double Pipe Creek
2030	Piney Creek Parkway WQ Trench	South Branch Patapsco

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.

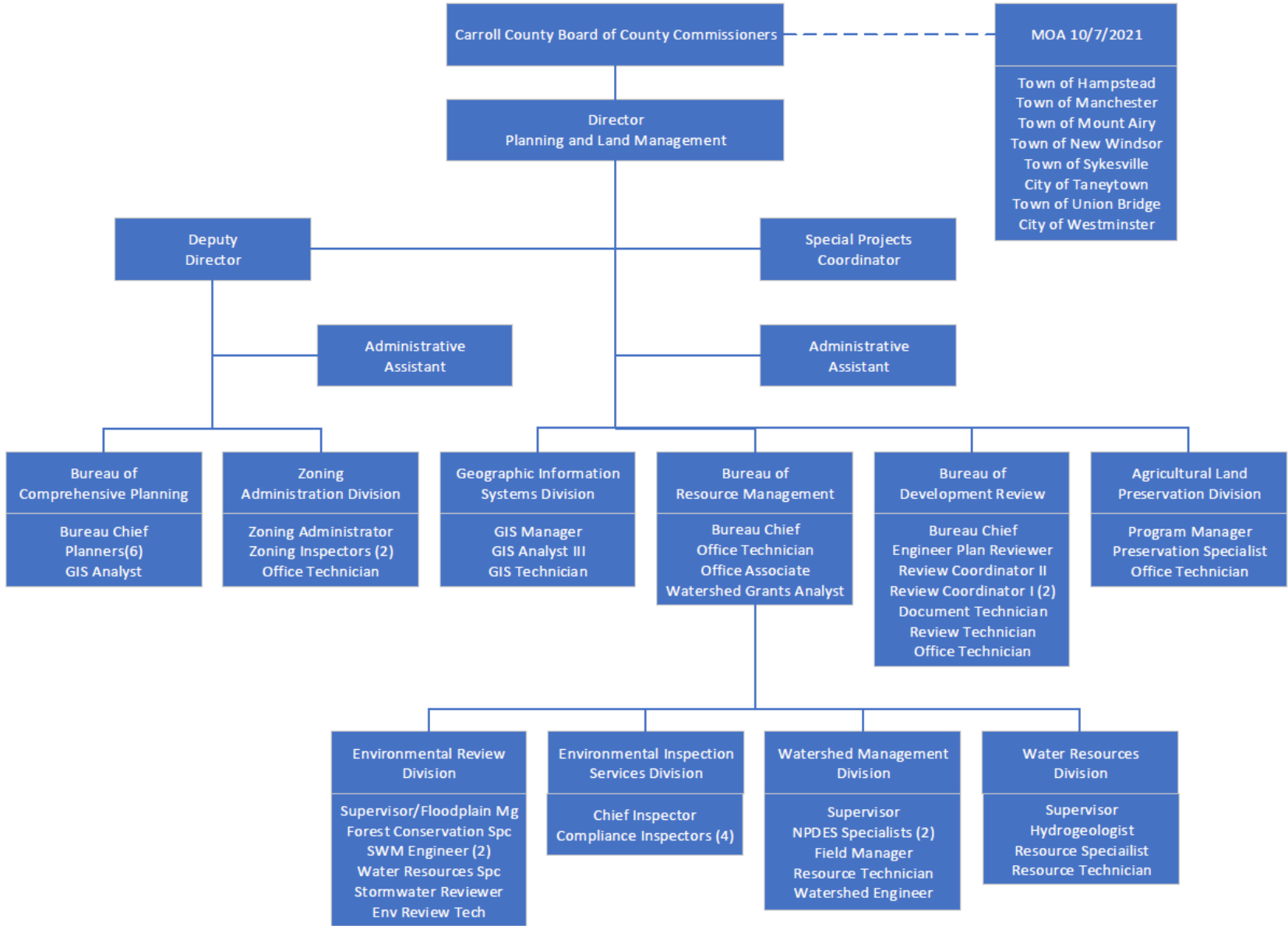
Maryland State legislative requirements for land use and planning are reviewed and managed by the Bureau of Comprehensive Planning. Requirements are incorporated into the County Master Plan and County code as appropriate to ensure compliance with State guidelines.

Appendix A:
Organizational Chart

Organizational Chart:
Department of Planning and Land Management

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Appendix A

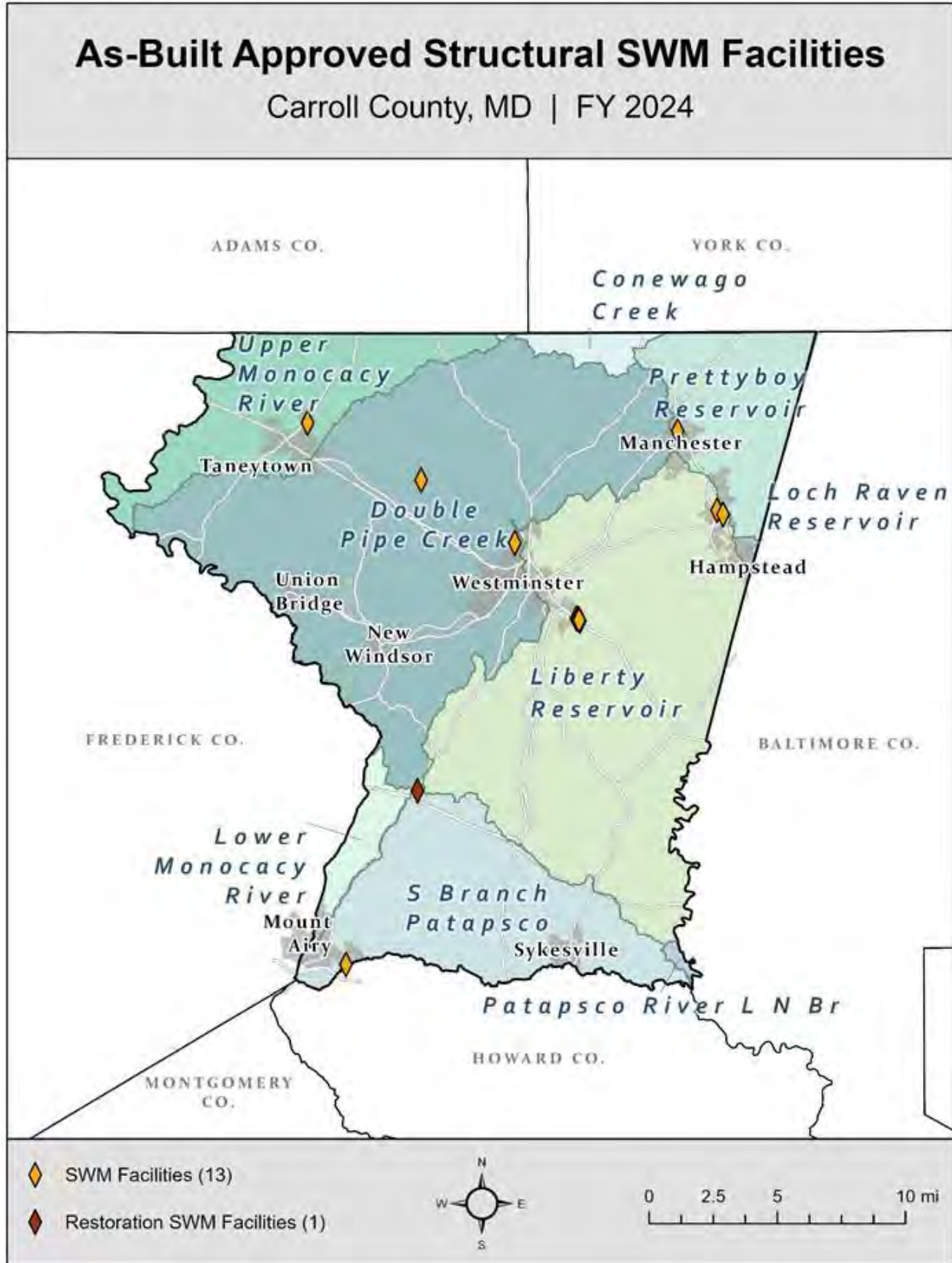


Appendix B: *Supplemental Data*

Carroll County 2024 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**
- **Carroll County Monitoring Databases**
- **Carroll County IDDE Guidance Manual**
- **Stream Restoration Crediting Documentation**

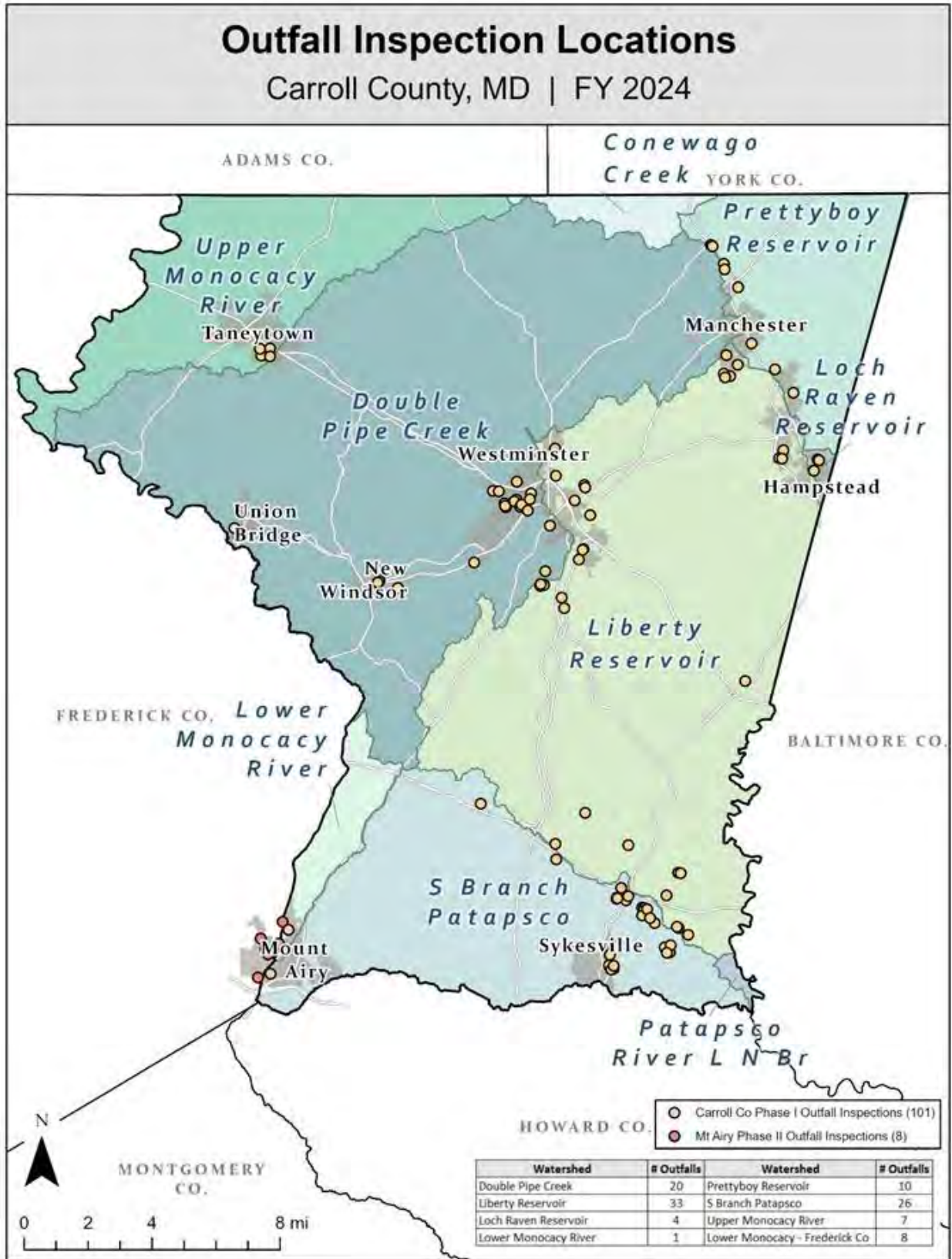
Carroll County, Maryland 2024 As-Built Approved SWM Facilities Map



Appendix C: *Illicit Discharge Detection and Elimination*

Illicit Discharge Detection and Elimination (IDDE)

- **2024 Outfall Location Map**
- **2024 Illicit Discharge Outfall Screening Actions Taken**
- **2024 Commercial/Industrial Visual Survey Location Map**
- **2024 Commercial/Industrial Visual Survey Summary**
- **2024 Illicit Discharge Incident Report Summary**
- **2024 NPDES Annual Manager/Supervisory Level Stormwater Pollution Prevention Training Agenda**
- **Revised 2024 IDDE Guidance Manual Cover (See Appendix B for PDF file)**
- **Litter Management – Stormwater Pollution Prevention BMPs**

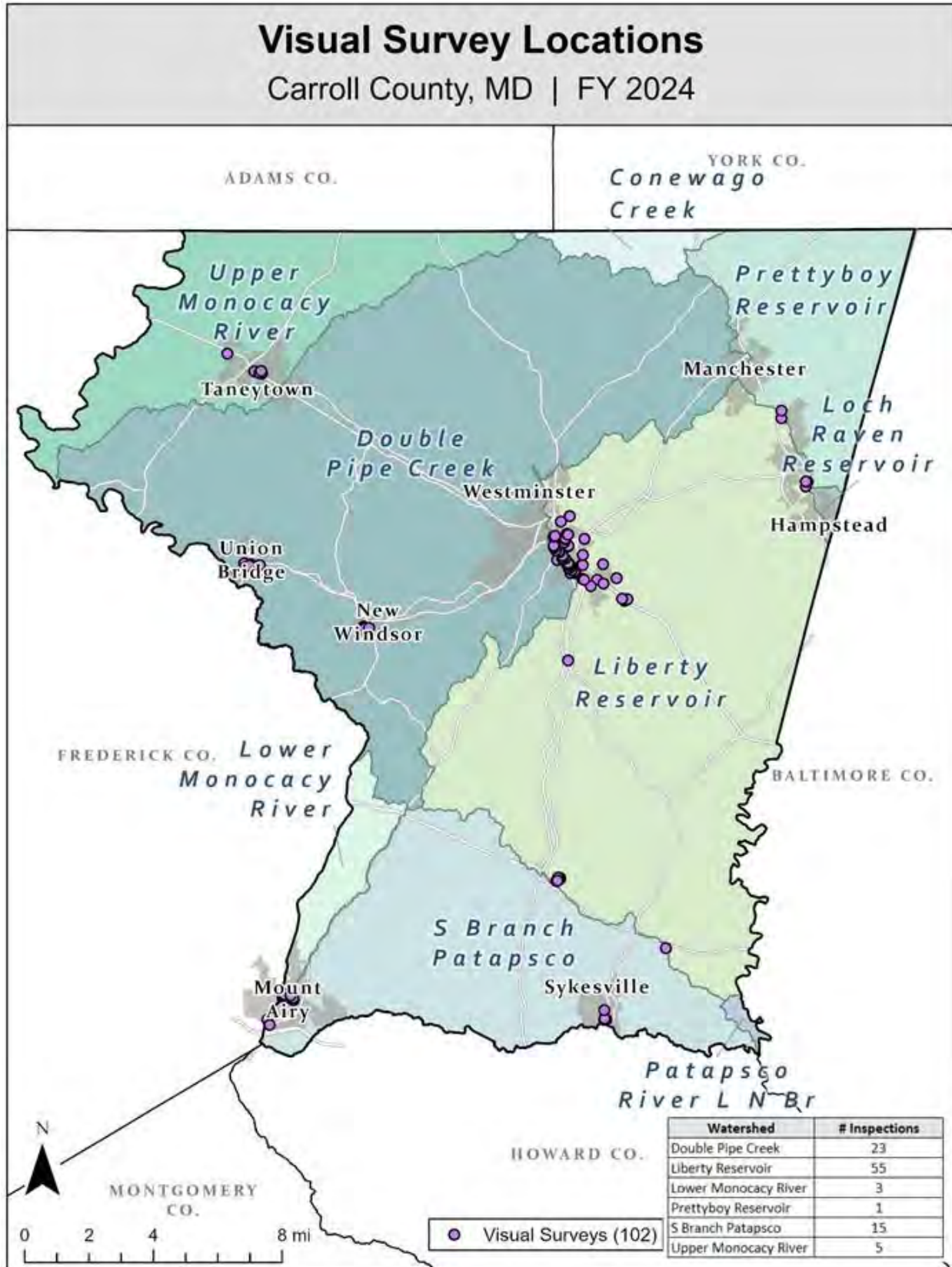


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2024 Illicit Discharge Outfall Screening Actions Taken July 1, 2023 – June 30, 2024

Outfall/NPDES Study Point	Action Taken
W145	Illicit Discharge/ City Westminster public water supply loss detected. City of Westminster Utilities Department located, repaired, and eliminated.

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2024 Commercial Industrial Visual Survey Summary Visual Survey Areas Requiring Follow-up Actions Processed from July 1, 2023 – June 30, 2024

This table presents the 7 of 101 Commercial/Industrial Visual Surveys recommended for follow-up*.
No Illicit Discharges Observed / Potential Pollutant Source/Activity

Visual Survey Action # / Unique Site ID #	Date	Land Use	Activity/ Location/ Watershed	Potential Significant Pollutant Source	Follow-Up Action/Status
VS-24-0001 707025106	12/28/23	C	Baltimore Blvd, Westminster, MD	Auto Collision Repair Shop - Outdoor storage loading and unloading lot for vehicle and wrecked vehicles. No Illicit Discharge.	Sent MS4 Educational Letter w/ Auto Industry Good Housekeeping BMP Pollution Prevention Information & MDE Stormwater Pollution Prevention Guidance Document
VS-24-0002 707031270	12/28/23	C	John Street, Westminster, MD	Automotive Repair Business - Outdoor storage, 55-gallon drum, equipment, and other container storage. No Illicit Discharge.	Sent MS4 Educational Letter w/ Auto Industry Good Housekeeping BMP Pollution Prevention Information & MDE Stormwater Pollution Prevention Guidance Document
VS-24-0003 708035326	12/28/23	C	Hanover Pike, Hampstead, MD	Garage, Auto/Lawn Parts, Equipment Repair Shop and Salvage Yard. No Illicit Discharge.	Confirmed site has MDE 20SW Permit #20SW3759 under Brodbecks Garage - MDE permitted. No Letter necessary.
VS-24-0004 707035411	12/28/23	C	Old Westminster Pike Westminster, MD	Automotive Transmission, Undercoating and Window Tinting Shops – Outdoor Storage barrels and equipment. No Illicit Discharge.	Sent MS4 Educational Letter w/ Auto Industry Good Housekeeping BMP Pollution Prevention Information & MDE Stormwater Pollution Prevention Guidance Document

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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-24-0005</u> 714041796	12/28/23	C	Enterprise Street, Sykesville, MD	Automotive Body Repair Shop Outdoor Storage of Vehicles and wrecked vehicles. Suspected outdoor washing. No Illicit Discharge.	Sent MS4 Educational Letter w/ Auto Industry Good Housekeeping BMP Pollution Prevention Information & MDE Stormwater Pollution Prevention Guidance Document
<u>VS-24-0006</u> 714041818	12/28/23	C	Adam Smith Street Sykesville, MD	Automotive Repair Shop and Parts Store. Vehicles awaiting service parking overflow in public street and yard. Outdoor equipment storage area. Possible outdoor vehicle washing.	Sent MS4 Educational Letter w/ Auto Industry Good Housekeeping BMP Pollution Prevention Information & MDE Stormwater Pollution Prevention Guidance Document
<u>VS-24-0007</u> 708026912	02/05/24	C	Ridge Road Eldersburg, MD	Rear of Shopping Center Complex Property Management & Maintenance Staging Area: Outdoor Equipment and Temporary Salt Material Storage. No Illicit Discharge.	Sent MS4 Educational Letter w/ Auto Industry Good Housekeeping BMP Pollution Prevention Information. Salt Pile BMP Flyer, and MDE Stormwater Pollution Prevention Guidance Document
<u>VS-23-0007</u> 708026912 <i>On-going monitoring from previous year.</i>	04/16/24	C	Hanover Pike	On-going monitoring from previous year. Rear of multiple restaurants at shopping center. Fats/Grease problem eliminated. Possible equipment washing.	Sent MS4 Educational Letter w/ Food Industry Good Housekeeping BMP Pollution Prevention Information including outdoor kitchen equipment washing.

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2024 Illicit Discharge Incident Report Summary Illicit Discharge Complaints Processed from July 1, 2023 – June 30, 2024

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-22-0001 (On-Going)	<p>Citizen reported observation of brown foam and stream discoloration with concern for potential upstream sanitary sewer issue.</p> <p>Reported: 02/15/22</p>	<p>On-going joint investigation w/MDE Compliance confirmed elevated levels of phosphorus and orthophosphates from a private property pond (for emergency fire water supply) that also collects regional and on-site stormwater runoff discharging to Deep Run. The non-SWM BMP pond determined to be on MDE Dam Safety list of low hazard dams with outstanding corrective measures. Required engineering study confirmed structural issue with pipe exiting the riser allowing pond surface water to slowly dewater with sediment to the outfall. Property owner required to contact MDE Dam Safety Compliance Division to address and permit repair of failing riser and sediment issue and any outstanding MDE Dam Safety corrective requirements. The investigation with full cooperation of the property owner also determined no active industrial activity and no internal floor drains or utility sinks discharging to the pond. It was determined the property's fire suppression system is routinely flushed to the pond with potable chlorinated water for fire required safety maintenance. The property owner required to contact MDE permits division to determine if 17HT permitting required and obtained a 17Ht permit implementing de-chlorination BMPs, etc. with MDE oversight.</p>	<p>Illicit Discharge Eliminated (Follow-up by MDE permitting agencies)</p> <p>Case Closed: 05/29/24</p> <p>LU: Industrial</p>	<p>Hanover Pike, Hampstead, MD (Municipal)</p>
PD-22-0015 (On-Going)	<p>MDE reported significant fish kill in State regulated waterway bordering municipality.</p> <p>Reported: 07/02/22</p>	<p>MDE performed initial biological and compliance investigation determining apparent source (pesticide) from a private property/business storage and loading area fronting waterbody with private storm drain inlet and storm drain-pipe discharge outfall directly to waterway. MDE reviewed w/local Municipal MS4 permit Co-Permittee and County CCBRM staff. MDE Compliance and Enforcement required corrective measures including fines for fish kill and 20SW Industrial Stormwater Permit registration w/SPPP for the business operations.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 01/11/24</p> <p>LU: Commercial</p>	<p>Near Main Street, Sykesville, MD (Municipal)</p>
PD-23-0010	<p>Citizen reported oil sheen and film on surface water below at stream low flow culvert crossing below RR bridge.</p> <p>Reported: 07/13/23</p>	<p>Investigation determined the low flow culvert crossing clogged with woody and grass organic debris decaying and causing brown foam on backed up stagnant pooled surface water. No rainbow sheen observed. Stormwater chem test negative. Oil/tar like odor from RR track treated timbers/ties above the stream crossing. Recommended removal of debris on this private driveway crossing to property owner.</p>	<p>Non-Illicit Discharge</p> <p>Case Closed 07/13/23</p> <p>LU: Residential</p>	<p>Spring Mill Rd, Westminster, MD</p>

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0011	County CCBRM staff reported large volume dewatering or flushing discharges from large supply tank via multiple hoses at a commercial property by a contractor to SWM facility to County storm drain system (MS4). Reported 07/19/23	Investigation determined dewatering of tank (potable on-site storage water supply for fire suppression was being performed “prior” to cleaning and flushing of the tank and confirmed No 17HT permit in place. Dewatering was stopped. Stormwater chlorine test less than 0.2ml. County staff reviewed w/MDE Compliance for guidance. MDE Compliance contacted business staff reviewing options resulting in coordinating with City of Westminster WWTP for authorization to receive the dewatering and cleaning discharges per pretreatment guidance via a public sanitary sewer connection satisfactory to MDE Compliance.	Potential Illicit Discharge Eliminated Case Closed: 07/20/23 LU: Commercial	Avondale Road Westminster, MD
PD-23-0012	Citizen reported a water discharging along edge of road to storm drain inlet with septic like odor. Reported: 07/18/23	Investigation found road edge dampened from previous day flow with small amount of green algae. No odor. A 3” PVC pipe observed between 5918 & 5922 Conover Road. Neighbor church downspouts connect to the pipe. May have sump pump connection. CC staff monitored and observed mowed grass on the road in this area with a feint organic decay souring odor that did not smell like septic. Multiple inspections over several weeks found no indicators of septic discharge. CC Roads crew to spot check when in area.	Non-Illicit Discharge Case Closed: 08/10/23 LU: Residential	Conover Road Harney, Md
PD-23-0013	CCBRM SWM Inspector staff reported puddle of white milky liquid at SWM BMP storm drain inflow pipe small plunge pool while performing BMP maintenance inspection. Reported: 07/21/23	Investigation determined floor wax stripper/finishing wastewater discharged from machine at the site’s storm drain system inlet by institution’s custodian. Enforcement under the SWM BMP Maintenance Inspection requiring corrective measures performed by the owner as follows: 1)Notified on-site personnel and institutional property management to immediately stop all wastewater discharges to the storm drain inlet (completed), 2) Produce SDS sheets, 3) Apply absorbent socks/pads soak up material in plunge pool, dispose in contractor trash bag, secured by duct tape for dumpster/landfill, 4) Letter issued requiring written response from the institution with statement/commitment to follow SDS data sheet with proper environmental disposal practices in future which was provided. Compliance achieved.	Illicit Discharge Eliminated Case Closed: 10/30/23 LU: Institutional	Salem Bottom RD Westminster, MD

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0014	County Citizen Services staff received a complaint from a tenant house resident stating septic discharge to ground and stream from an occupied RV camper parked in a barn at the property. Reported: 8/4/23	CC Health Department investigation confirmed gray water discharge to ground and stream with separate pipe connected to the property's septic tank system. Property owner confirmed allowing an individual to occupy camper noting confirming the discharge set up noted above. CCHD cited local health code violations. CC Code Enforcement addressed multiple violations related to zoning, building and permits, etc. Discharge activity eliminated.	Illicit Discharge Eliminated Case Closed: 9/28/24 LU: Residential	Ridge Road, Westminster, MD
PD-23-0015	Municipal staff reported on-going dumping of grass clippings along stream edge and into stream in park open space that backs up to residential homes. Reported: 7/24/23	Co-investigation with municipal staff confirmed grass and yard waste clippings and two small piles of soil along the top edge of stream. Determined equipment access to remove materials may cause more disturbance than leaving in place to decompose. Non-MS4 discharge however municipal code notification letter issued to all residential lot owners backing up to this stream in municipal open space regarding no dumping of yard waste or other materials, etc. in this area.	Potential Illicit Discharge Case Closed: 08/09/24 LU: Residential	Atlee Ridge RD New Windsor, MD (Municipal) Open Space
PD-23-0016	Municipal staff reported sanitary sewer grease overflow from restaurant onto pavement. Reported: 08/03/23	Co-investigation confirmed restaurant grease trap sanitary system backup (at rear of property) onto pavement and a dried stain from flow across parking lot and gravel street to low area in grassed area with puddle on manhole. Food particles observed. Slight odor present. Met owners on-site requiring corrective measures of emergency cleanout and pumping of tank and cleaning of grease trap system. Puddle to be vacuumed up by sanitary service contractor. Municipal code enforcement and public works staff confirmed owner response of completed actions.	Illicit Discharge Eliminated Case Closed: 08/09/23 LU: Commercial	South Main St., Mount Airy, MD (Municipal)
PD-23-0017	Municipal staff reported accidental spill from new cooking oil containers dropped during unloading at restaurant near rear service entrance and flowed onto public street. Reported: 07/24/23	Investigation confirmed spill and tracking by vehicles on street before owner was able to clean-up. Spill cleaned up by restaurant owner. Municipal DPW staff reviewed incident with business owner and dry clean up measures. Provided written Restaurant Good Housekeeping BMP flyer with instructions to have a spill kit with absorbents, pads and socks on site and ready if needed. Discussion w/owner also included kitchen equipment cleaning containment, floor mop disposal to the sanitary sewer (utility sink) and not onto pavement or ground.	Illicit Discharge Eliminated Case Closed: 08/09/23 LU: Commercial	Church Street, New Windsor, MD (Municipal)

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0018	<p>CC Health Department staff reported discharge from farm facility pipe to a stream with appearance and odor of sewage that may be related to farm activity. Other complaints regarding agricultural material handling.</p> <p>Reported: 08/03/23</p>	<p>Referral to another agency (MDE). As this discharge not near an MS4 system and direct to stream. CCBRM staff reviewed and referred this complaint with MDE Western Maryland surface water compliance staff who will follow up with CCHD, and the Maryland Department of Agriculture.</p>	<p>Non-MS4 Referral to another agency, MDE.</p> <p>Case Closed: 08/29/23</p> <p>LU: Agriculture</p>	Humbert Schoolhouse Road
PD-23-0019	<p>Municipal staff reported commercial trash truck w/leaking fuel line on public street.</p> <p>Reported: 08/11/23</p>	<p>Investigation observed small amount of fuel from leak on pavement where truck broke down due to mechanical failure. Small amount. Reviewed w/MDE compliance staff for guidance. Trash contractor addressed the truck leak with non-emergency response clean-up measures with absorbents, etc. Supervised by DPW.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 08/11/23</p> <p>LU: Commercial</p>	Jennifer Way, Sykesville, MD (Municipal)
PD-23-0020	<p>Citizen reported trees down due to heavy storm in stream blocking, diverting water around trees ponding water. Noticed oil in stream and concerned since commercial automotive garage upland in the drainage area.</p> <p>Reported: 09/01/23</p>	<p>CCBRM staff investigation located spring area adjacent to stream with iron floc bacterial presented oil-like sheen. Checked upland commercial garage pavement areas, public street and storm drain system that showed no physical indicators of auto fluid discharges. The garage area was neat and clean.</p>	<p>Non-Illicit Discharge</p> <p>Case Closed: 09/01/23</p> <p>LU: Residential</p>	Sykesville Road, Eldersburg, MD
PD-23-0021	<p>Municipal staff reported oil sheen on water flowing from parking lot onto public roadway reaching storm drain inlet. No activity observed.</p> <p>Reported: 09/08/23</p>	<p>CCBRM staff co-investigation w/municipal DPW staff observed staining at inlet, along road, and originating from a parked SUV in parking lot. Substance had dried by time of investigation. Met w/nearby automotive garage owner who confirmed they had power washed a vehicle earlier in the day. Owner was not aware this was not allowed. Staff explained regulations. Owner ensured no further outdoor washing would occur and discharges disposed of via sanitary. Business does have licensed contractor service to collect oil contaminated washing such as engine cleaning who processes by appropriate permits whom the County was familiar with. Reviewed Automotive Good Housekeeping BMPs including dry clean up measures, etc. No clean up action needed; volume was minimal. Spill kit on site.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 09/08/23</p> <p>LU: Commercial</p>	Long Lane, Manchester, MD (Municipal)

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0022	<p>Citizen complaint to EPA conveyed by MDE regarding concern for potential pollutant runoff from large number of vehicles and related activities at a resident's outbuilding and gravel lot with private pond.</p> <p>Reported: 09/18/23</p>	<p>Co-investigation by CCBRM and MDE compliance staff observed non-stabilized graded slope below building and gravel lot containing 30 plus vehicles w/one vehicle outside with hood up, no owner present. Small eroded swale west side of pond where emergency overflow occurs (pond has no outfall). Drainage to County road culvert severely eroded/scoured under pipe with sediment in lower end and outfall. Enforcement by County E & S requiring stabilization required and completed. CC Roads clean up sediment at road culvert outfall. The failing culvert will be replaced per existing replacement schedule in 6 months+/- . CC Zoning performed inspection, met with owner requiring all vehicles removed over the allowable limit. Completed. No automotive fluids on ground.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed 10/11/23</p> <p>LU: Residential</p>	Lake Drive, Westminster, MD
PD-23-0023	<p>Citizen reported standing water that stinks/smells described as septic or sewage in residential open space behind property.</p> <p>Reported: 09/26/23</p>	<p>Investigation by County Utilities to check nearest public sanitary sewer line and manholes for backups and or odors. Note: the sanitary sewer line does not run through the open space behind the property. All sewer mains were flowing as normal with no stinking odors observed. No physical indicators including odors observed in the area.</p>	<p>Non-Illicit Discharge</p> <p>Case Closed 09/26/23</p> <p>LU: Residential</p>	Sykesville Road Eldersburg, MD
PD-23-0024	<p>Citizen reported observing blue/gray water standing at the outfall of a 24" County storm drain pipe at a roadside ditch during a field inspection review for a site development project.</p> <p>Reported: 10/27/23</p>	<p>CCBRM staff investigated confirming the gray water discharge visually and by positive field chem test for detergents. No flow was observed over multiple monitoring events. Extensive storm drain investigation included physical inspection of manholes, inlets and video camera work but unable to determine a source. No further observations of gray water discharge were observed over a five-month period. Staff advised to inspect on further development review site visits.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed 03/22/24</p> <p>LU: Residential</p>	Sandymount RD Finksburg, MD
PD-23-0025	<p>Citizen reported odor and possible dumping black water from a camper parked along roadside next to a stream.</p> <p>Reported: 11/17/23</p>	<p>CCBRM staff investigated. Located camper alongside road near stream. Stream water clear. No odor or physical indicators of any discharge between camper and stream. No pollutants found.</p>	<p>Non-Illicit Discharge</p> <p>Case Closed: 11/17/23</p> <p>LU: Residential</p>	Bond Street, Westminster, MD

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-23-0026	County CCBRM Staff reported several bags of a solid granular material dumped near a stormwater conveyance curb opening in parking lot above a stormwater facility. Reported: 12/06/23	Staff investigation determined several broken bags of Calcite pH Neutralizer, a pure mineral and not harmful to the environment, dumped as noted. Consulted SDS sheet, notified commercial property manager who cleaned up, placed in heavy duty trash bag and tied off w/duct tape for dumpster.	Illicit Discharge Illegal Dumping Case Closed: 12/11/23 LU: Commercial	Center Street, Westminster, MD (Municipal)
PD-24-0001	CC DPW Utilities Staff reported private sanitary sewer overflow from restaurant at commercial shopping complex. Reported: 02/12/24	CCBRM and municipal staff co-investigation at restaurant. CC Health Department addressed the on-site restaurant compliance requirements closing the restaurant until sewer was cleared by professional and internal clean up. The outside flow was stopped noting some flow had traveled down roadway to private storm drain system that discharges to a stream. The restaurant staff was pressure washing the drive thru where the cleanout had leaked and part of the driveway flowing down to the inlet. Required the pressure washing stopped until absorbent socks to provide some containment. The outfall was checked and reviewed with MDE Compliance. The restaurant manager as directed reported SSO to appropriate agency within 5 days. Follow up outfall observation days following incident with no issues	Illicit Discharge Eliminated Case Closed: 02/16/24 LU: Commercial	North Woods Trail, Hampstead, MD (Municipal)
PD-24-0002	Citizen reported via CC "See Click Fix" that two sewer covers with water coming out of them onto parking lot with horrible smell at restaurant. Reported: 02/14/24	CCBRM EISD Inspector checked the site. No discharge at time of site from cleanout caps. Feint rancid odor detected. Recent construction work was completed in the area with new caps, etc. Manager noted no backups and everything functioning properly. No illicit discharges observed at this time. CCHD alerted.	Non-illicit Discharge Case Closed: 02/16/24 LU: Commercial	Liberty Road, Eldersburg, MD
PD-24-0003	Municipal staff reported asphalt "tack" emulsion tar sealant accidental spill onto street and into storm drain inlet from 5-gallon container in the back of a resident's work vehicle parked overnight on the street. Reported: 02/26/24	CCBRM and Municipal DPW staff co-investigation confirmed report with resident/employee of the parked work vehicle using a tack cleaner and absorbent pads. Small amount of tack emulsion and cleaner were observed in the inlet and some residual in the storm drain pipe section exiting the inlet connecting to a manhole structure with no contaminant. No flow or contaminant discharge from the manhole structure to the outfall and drainage swale. Contacted and reviewed plan with MDE compliance staff confirmation to have licensed environmental service plug the pipe at the manhole structure, clean and recover wastewater with a jet vacuum system and proper disposal. Municipal DPW staff provided supervision and final inspection through completion (same day).	Illicit Discharge Eliminated Case Closed: 02/28/24 LU: Residential	Farm Creek Road, Westminster, MD (Municipal)

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-24-0004	<p>CC DPW Utilities staff reported County sanitary sewer line break, blockage and SSO at street manhole resulting in clear effluent overflow onto street to County storm drain inlet and SWM facility occurring on 2/24/24.</p> <p>Reported: 02/26/24</p>	<p>CC Utilities reported the SSO response followed their SOPs with sanitary infrastructure repaired. MDE was contacted by CC Utilities who met staff on-site on 2/25/24. Follow-up inspection by CCBRM EISD inspector on 2/27/24 confirmed street and storm drain system including SWM facility and outfall to stream were clear.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 02/27/24</p> <p>LU: Residential Utilities</p>	Cable Drive, Eldersburg, MD
PD-24-0005	<p>Citizen reported dumping of trash and cement into stream in residential open space area.</p> <p>Reported: 02/28/24</p>	<p>Municipal staff investigation confirmed dumping of a small amount (5-8 gallons) concrete that had hardened along stream bank. CCBRM staff confirmed on stream bank only, not in stream as initially reported. Contacted MDE compliance staff to review. Municipal DPW staff removed the material for proper disposal. Unable to confirm source but suspected source was spoken with by local municipality. Letters sent to all nearby residents referencing illegal dumping and related fines for future incidents.</p>	<p>Illicit Discharge Illegal Dumping Eliminated</p> <p>Case Closed: 03/04/24</p> <p>LU: Residential</p>	Atlee Ridge Road New Windsor, MD (Municipal)

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Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-24-0006	<p>Citizen reported to MDE compliance regarding carpet cleaning wastewater being dumped at private storm drain inlet behind commercial store at shopping center.</p> <p>Reported: 03/13/24</p>	<p>1)MDE Compliance notified CCBRM requesting preliminary investigation performed on 3/13/24 (w/ MS4-Co-permittee municipal DPW staff) confirming storm drain outfall pool cloudy w/rainbow sheen and slightly elevated for chorine and additional concerns. MDE Compliance joint investigation performed 3/14/2024. MDE issued non-compliance letter to property owner/manager and tenants to cease all non-stormwater discharges, clean out storm drain inlet and basin behind a restaurant, address fats/grease management issues at two locations, turn construction dumpster around to prevent draining into an inlet. MDE notified CC Health Department re: health code concerns. Corrective measures completed.</p> <p>2)Following weekend 40 tires dumped at night in outfall area. Under police investigation, MDE notified, and municipal DPW coordinated tire removal.</p> <p>3)Follow up inspection found wastewater cleaner in one inlet behind restaurant. MDE consulted. CCBRM issued County code violation letter requiring; inlet cleanup, all rear storm drain inlets stenciled w/“No Dumping” and distributing a dual language “No Dumping Outside Inlets” BMP flyer to each tenant to address apparent language barrier for some employees and cleaning contractors. No further issues to date. (Flyer in Addendum)</p>	<p>Illicit Discharges Eliminated</p> <p>Case Closed: 07/29/24</p> <p>LU: Commercial</p> <p>Hotspot: Periodic monitoring by Municipal DPW</p>	<p>Hanover Pike Hampstead, MD (Municipal)</p>
PD-24-0007	<p>Citizen reported water overflowing out of cleanout caps at commercial shopping center toward MD97. No odors, discoloration, or pooling of water.</p> <p>Reported: 03/19/24</p>	<p>CCBRM staff investigated flow from small private septic system cleanouts. Surface flow w/septic odor draining into and around a storm drain inlet for another 50’ downgrade on commercial paved entrance confirmed. Property management staff on-site indicated local septic company enroute to address septic system problem. Requested CC Health Department personnel confirmed septic discharge. Flow not enough volume to reach stormwater facility. CCHD provided direction for septic company through repair and redirected flow to septic field. Property owner required by CCBRM to plug storm drainpipe down grade preventing discharge to SWM facility, and clean jet/vac inlets and pipes for proper disposal. Completed.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 03/20/24</p> <p>LU: Commercial</p>	<p>Gamber Road, Finksburg, MD</p>

2024 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-24-0008	CCBRM staff reported bright white foam/bubbles with rainbow sheen on stream during MBSS study. Reported: 03/25/24	CCBRM staff investigated on 03/26/2024. Bright white foam as reported not present. Field chem test indicator all negative. Reviewed upstream potential sources and able to confirm with municipality a pump failure occurred on March 25 th at approximately 7:30am their permitted WWTP effluent pumping station experienced a pump failure to a failed run float. Repairs were completed with pump switched back to spray irrigation fields within 30 minutes. During the timeframe effluent did reach Georges Run. The Ultraviolet disinfection system was operating. Less than 10,000 gallons was discharged per calculations. Non-reporting per permit.	Illicit Discharge Eliminated Municipal Case Closed: 03/28/24 LU: Industrial	Maple Grove RD Manchester, MD
PD-24-0009	Citizen reported automotive fluid from a vehicle. Reported: 04/22/24	Cancelled investigation. County staff determined citizen reported to MDE Compliance who addressed the complaint.	Potential Illicit Discharge Case Closed (Cancelled) 04/22/24	Gaither Road, Sykesville, MD
PD-24-0010	Citizen reported trash/litter blowing from commercial property to stormwater pond facility and mowing by commercial property shredding plastics into small pieces . Reported: 12/07/23	CCBRM and Municipal DPW staff performed a series of SWM facility litter site evaluations confirming variety of litter in SWM pond facility area and forebay area from multiple perimeter sources; commercial business, Magna Way/public roadway, and intentional dumping. CCBRM and Municipal personnel met w/business store local and regional management staff, reviewed regulations and recommendations for Good Housekeeping BMP adjustments to reduce litter. Follow-up meeting confirmed actions taken by business to include closed lid cans replacing open cans. Corporate, Regional and Day manager inspections now made to ensure no over-flowing receptacles at fuel islands and car vacuuming station, and perimeter litter checks. Business management addressing shredded litter with mowing contractor to prevent future incidents. CCBRM and City of Westminster performed SWM facility litter clean-up. Site will be monitored under the CC SWM Maintenance inspection process. County SWM facility mowing contractors are required and instructed to pick-up any litter/plastics prior to mowing. CCBRM to continue monitoring to determine if posted signs needed along Magna Way in the future.	Illicit Discharge Eliminated with on-going monitoring. Case Closed 11/05/2024 LU: Commercial	Magna Way Westminster, MD (Municipal)

2024 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-24-0011	<p>Citizen reported auto-work including pulling and replacing engines and transmissions, auto-fluids and pressure washing on driveway discharging to street and draining toward storm drain inlet.</p> <p>Reported: 4/30/24</p>	<p>CCBRM investigation confirmed vehicle on jacks in front lawn, in driveway, stains in driveway and stain running along curb and gutter to edge of inlet but not in the inlet. Some leaks/stains on driveway had absorbent on them but not cleaned up. Enforcement letter sent to cleanup stained areas using dry clean-up measures only. Zoning office notified and required removal of unauthorized vehicles and only work on personal vehicles, etc. Follow-up inspection found all stained areas cleaned up and vehicles removed.</p>	<p>Illicit Discharge Eliminated</p> <p>Case Closed: 05/02/24</p> <p>LU: Residential</p>	<p>Yorkshire Way, Westminster, Md</p>
PD-24-0012	<p>Citizen reported sanitary sewer overflow from a private residential development system to rear yard to CC Health Department to Municipal Utilities.</p> <p>Reported: 05/09/24</p>	<p>CCHD and City of Westminster Utilities investigated. It was determined not to be municipal sanitary sewer but a blockage in a new housing project's private sanitary line due to a plug inadvertently left in line by contractor. The SSO discharge upon inspection did not enter the storm drain system. The CCHD provided guidance for corrective actions which the developer/property construction management team completed for repair and clean-up including lime application treatment and later slope stabilization and grass seeding.</p>	<p>Illicit Discharge Eliminated</p> <p>LU: Residential</p> <p>Case Closed: 05/13/24</p>	<p>Mulligan Lane, Westminster, MD (Municipal)</p>
PD-24-0013	<p>Citizen reported dumping of pet waste along public roadside.</p> <p>Reported: 06/04/24</p>	<p>CCBRM investigation confirmed a scoopable type of clay cat litter waste along edge of public roadway near a common property line corner. Notification letter issued to two property owners with potential regulatory code violation information along with Homeowner BMP info on proper handling and disposal of pet waste. Follow-up inspections have noted the dumping has been discontinued. Staff will continue to make observations when in the area.</p>	<p>Illicit Discharge Eliminated</p> <p>LU: Residential</p> <p>Case Closed: 06/20/24</p>	<p>Slacks Road, Eldersburg, MD</p>
PD-24-0014	<p>Municipal staff reported commercial vehicle washing discharges onto street draining toward inlet.</p> <p>Reported: 05/17/24</p>	<p>CCBRM investigation confirmed activity at the commercial automotive business. Met with business owner, reviewed regulations, stopped discharges, and required proper treatment and connection to public sanitary sewer upon authorization by the local WWTP.</p>	<p>Illicit Discharge Eliminated</p> <p>LU: Commercial</p> <p>Case Closed: 08/20/24</p>	<p>Long Lane, Manchester, MD (Municipal)</p>

2024 NPDES MS4 Permit Annual Report

Case #	Complaint & Date	Action Taken	Status	Jurisdiction/ Location
PD-24-0015	<p>Citizen reported to Municipal Police Dept. an individual occupying a camper RV parked in a residential complex parking lot connected a pipe to the camper and discharged wastewater onto the ground.</p> <p>Reported: 06/20/24</p>	<p>Municipal code enforcement officer investigated with CC Health Department inspector and determined the owner of the camper had a family member come to the site and off-loaded the wastewater, but some spillage had occurred but cleaned it up. No physical indicators were observed. CC Health Department provided guidance information to the resident camper. The issue of resident living out of camper was being addressed separately per other municipal code.</p>	<p>Illicit Discharge Eliminated</p> <p>LU: Residential</p> <p>Case Closed: 06/24/24</p>	<p>Beck Drive Mount Airy, MD (Municipal)</p>

2024 NPDES MS4 Permit Annual Report



2023 NPDES MS4 Permit Annual Training Property Management & Maintenance *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 Permittee, and 12-SW Industrial Stormwater General Permit Holders

Friday, November 3, 2023

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

AGENDA

9:00 - 9:15 am	Welcome and NPDES MS4 Permit Overview & Updates	Christopher Heyn Director, Dept. Planning & Land Management Carroll County Government
9:15 - 10:00 am	MDOT SHA Local Winter Weather Operations & Maintenance Activities	Darian Branham & Staff Resident Maintenance Engineer SHA Distrit 7 - Westminster Shop Maryland Department of Transportation - State Highway Administration
Break (10)		
10:10 - 10:30 am	MDE Compliance - Permit Updates and Comments	Kevin Bull MDE Compliance Inspector Water and Science Administration MD Dept. of the Environment
10:30 - 10:50 am	Successful IDDE Program Implementation & Coordination	Claire Hirt Watershed Restoration Coordinator Bureau of Resource Management Carroll County Government
Break (10)		
11:00 - 11:50 am	What's In Your Toolbox? Adjustments in Property Management and Maintenance Best Management Practices to Prevent and Reduce Pollutants <ul style="list-style-type: none"> • Employee Training Requirements & Resources VidClip#1 Intro to RAINcheck - 12 Areas of GH/BMPs (1:50) VidClip#2 Spill Control & Response (2:20) • Municipal Vegetation Management -Town of Manchester DPW Parks • County Guardrail Vegetation Mgmt -CC DPW Bureau of Roads Operations • Inlet Maintenance Program - City of Westminster DPW Streets • CC Facilities Management & Maintenance - CC DPW Bureau of Facilities 	Glenn Edwards NPDES Compliance Specialist Bureau of Resource Management Carroll County Government Ken Black Jim Cook, Mike Biblehimer Zach Amess, Staff Justin Megonell, Brad Weikert
11:50 - 12:00 pm	Wrap Up Reminder Announcement - CC DPW Winter Weather Workshop Resources and Q&A	Christopher Heyn Director Dept. Planning & Land Management

Notes:



ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

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



DDDE

Carroll County Bureau of Resource Management

Revision: November 2024



COMMUNITY PARTNERS FOR CLEAN WATER

Litter Management

Stormwater Pollution Prevention Best Management Practices

NPDES MS4 Permit Measure: Public Education and Outreach on Stormwater Impacts
Subcategory: Education for Business Community (Adapted from EPA-832-0320)



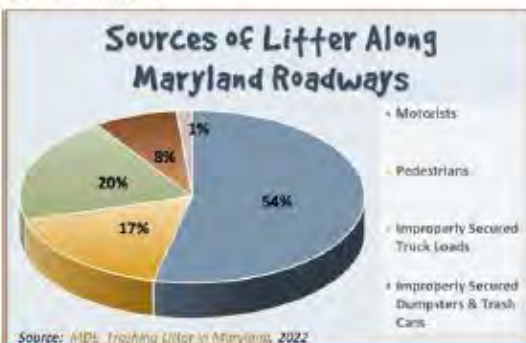
What Businesses Can Do To Reduce Litter

Businesses can be part of the solution to help reduce litter and prevent other potential pollutants from entering local streams, storm drain systems, and waterways. Clean surroundings and local waterways are important to your community's quality of life, good for business, improve the customer experience, and can raise property values. As a business owner or manager, we recognize you and your staff already play an important role in providing a healthy and positive customer experience. This fact sheet provides information and guidance your business may use to assess and promote effective litter management for your site with positive impact on water quality in your community's local streams and regional waterways.

Top 10 Types of Litter in Maryland

(Sources: Ocean Conservancy 2021 Report, CC Environmental Advisory Council "LitterLess - Resource Guide for Carroll County Residents")

1. Plastic bottle caps
2. Plastic beverage bottles
3. Food wrappers
4. Straws and stirrers
5. Cigarette butts
6. Aluminum beverage cans
7. Glass beverage bottles
8. Metal bottle caps
9. Plastic grocery bags
10. Other trash



Storm drain inlets are often collection points where grass clippings, leaves and litter can cause flooding and convey materials to waterways. Be sure to keep clean of debris for stormwater flow!

Why is Litter Management Important?



In many communities, litter has the potential to become a significant pollutant. Accidental or improper disposal can cause trash to blow overland and collect in waterways or be washed into storm drain systems, where large amounts can

concentrate in small areas. Trash can become litter when it accidentally falls out of trash bins, vehicles, dumpsters, garbage trucks, or when improperly discarded. Litter mars the aesthetics of a landscape and poses threats to waterways, wildlife and human health. For example, litter can be a choking hazard for wildlife or cause bacterial contamination from items such as food wrappers or discarded cleaning wipes. When litter clogs storm drain inlets, pipes, and stormwater management ponds, it can cause flooding and damage infrastructure. Plastic litter can also break down into microplastics, which are challenging to remove from the environment and can be potentially toxic when consumed.

Good Housekeeping Practices

Employ these Good Housekeeping Practices to help prevent litter and other potential pollutants from entering nearby waterways.

Three Simple Steps for Effective Litter Management

Businesses can take three simple steps to prevent pollutants such as litter from entering local waterways.



1. **Evaluate your site.** Using a plan sketch or aerial photo, walk your site and note the general direction of flow for stormwater runoff. Also identify inlets, curb openings, outfalls, stormwater facilities and waterways. Note the general wind direction.



2. **Identify any potential litter sources.** Note specific areas where litter tends to collect on-site or may routinely blow off-site, and determine the major types such as bottle caps, etc. Check nearby stormwater infrastructure (inlets, outfalls, etc.), ditches, streams, and waterways. Identify potential litter sources, such as trash receptacles, dumpsters, outdoor eating areas, storage sheds, and loading/unloading areas. Identify specific activities with potential to cause litter or other pollutants such as grease receptacles, fueling stations, drive through, and car cleaning areas.

Sample Business Activities	Common Pollutants					
	Bacteria	Erosion & Debris	Excess Nutrients	Heavy Metals	Oil & Grease	Toxic Chemicals
Engine Maintenance & Repair					✓	✓
Food Service & Production	✓	✓	✓		✓	✓
Gas Stations		✓			✓	✓
Washing Vehicles, Equipment, etc.	✓	✓			✓	✓
Waste Handling	✓	✓	✓		✓	✓
Landscaping		✓	✓	✓		✓
Parking lots, Sidewalks, Paved Drives	✓	✓	✓	✓		✓

Source: Adapted from Clean Water Patterns: Making your business or service water pollution and Pollution Prevention for the Discharge to Water, Inc. <http://www.cleanwaterpatterns.com/>, September 8, 2015.

3. **Take action.** If you have any areas that can improve litter management, put together a simple checklist of Good Housekeeping practices from the menu provided. Determine a schedule if needed, educate your staff, and begin implementation with your team. Follow up periodically with self inspections and make adjustments as needed.

Good Housekeeping Practices for Litter Management

- Provide customers and employees with an adequate number of trash, recycling, and cigarette receptacles in convenient locations.
- Check and collect trash from receptacles before overflowing. Ensure loose items on the ground are picked up and bags are sealed.
- If trash receptacles have lids, keep them secure.
- Keep dumpster lids and side doors closed. Regularly inspect waste management area for loose trash. Require trash haulers to pick up litter that falls out during transfer.
- After mowing, blow grass clippings onto lawn areas.
- Sweep sidewalks and high traffic areas periodically to remove debris. Sweep outside around front and back doors to control debris, cigarette butts, and loose litter. Dispose of materials in the garbage. Do not dispose of any materials in a storm drain.
- Regularly check on-site stormwater inlets and facilities for litter or improper dumping of liquids such as automotive fluids, or wastewater, consider labeling on-site storm drain inlets to remind everyone that only rain should enter storm drain systems.
- Use customer friendly signage to help direct customers to use good housekeeping measures.
- Provide training to employees. Make staff aware that litter management is everyone's responsibility not only as a good business practice but also as a stormwater pollution prevention measure to help protect local waterways and improve water quality.
- Perform regular on-site visual inspection for litter along the perimeter and neighboring properties. Look for windblown or improperly discarded trash, and safely collect if able or coordinate as needed. Look for opportunities to improve.

For more information, help, or guidance contact:



Carroll County Bureau of
Resource Management
225 N. Center Street, MD 21157
Phone: 410-386-2210

Or your municipality:

Hampstead	410-374-2761	Manchester	410-239-3200
Mount Airy	410-795-6012	New Windsor	410-635-6575
Sykesville	410-795-8959	Taneytown	410-751-1100
Union Bridge	410-775-2711	Westminster	410-848-9000

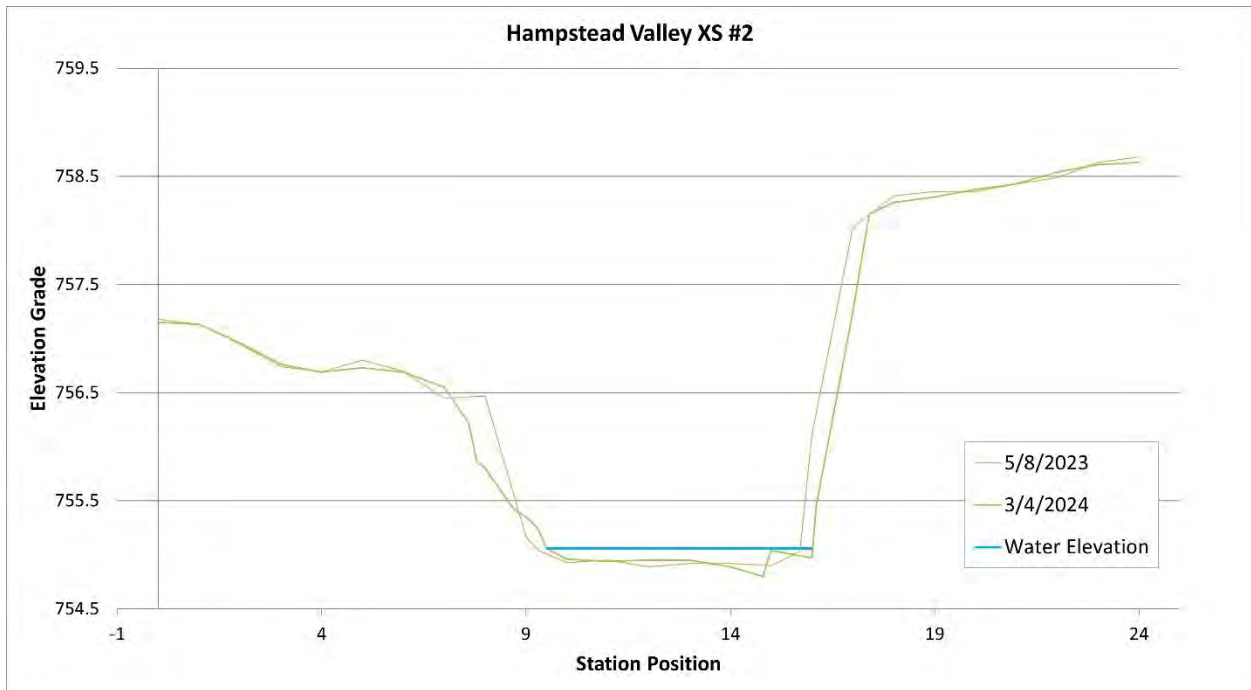
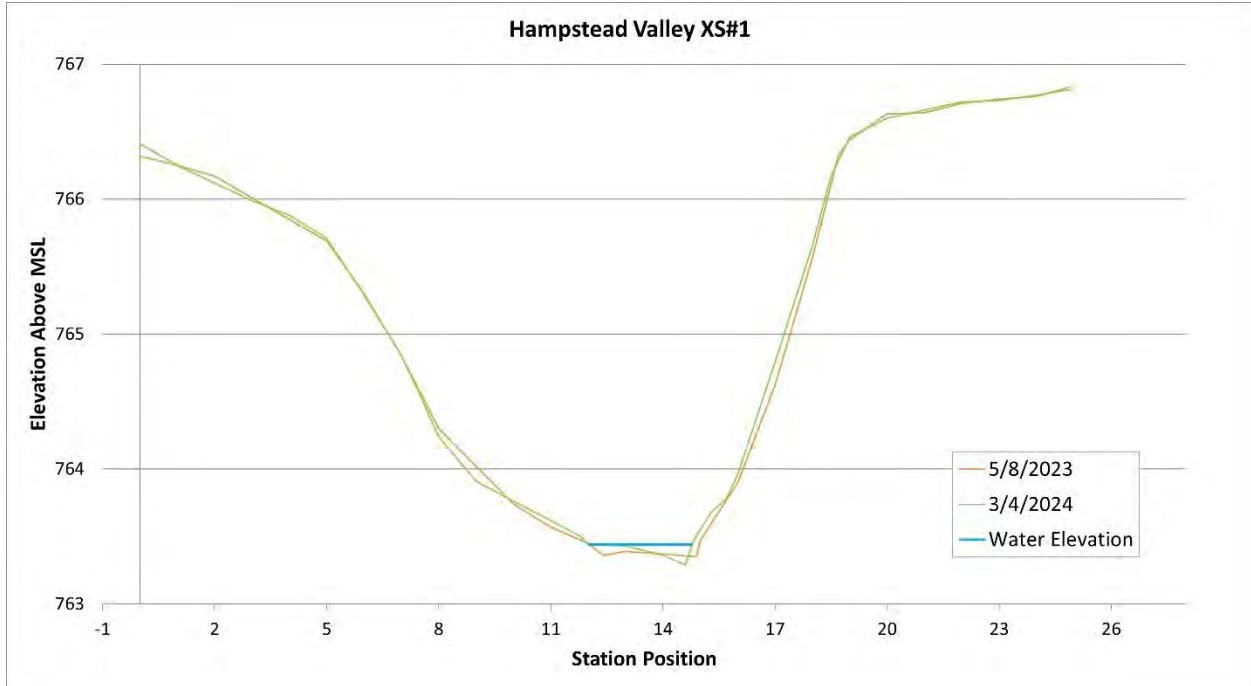
For general information about stormwater pollution prevention, visit the "Protecting Carroll County Waters" webpage at:
<http://www.carrollcountymd.gov/government/directory/planning-land-management/protecting-carroll-county-waters-npdes/>

Appendix D: *Monumented Cross Sections*

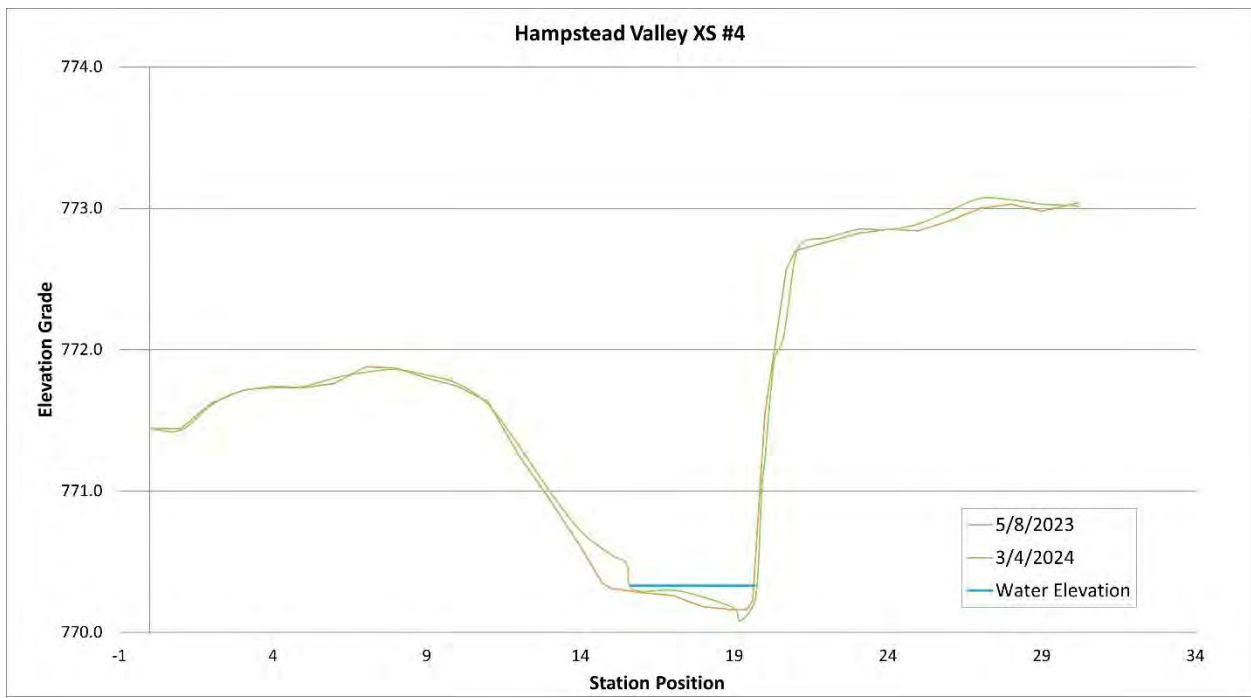
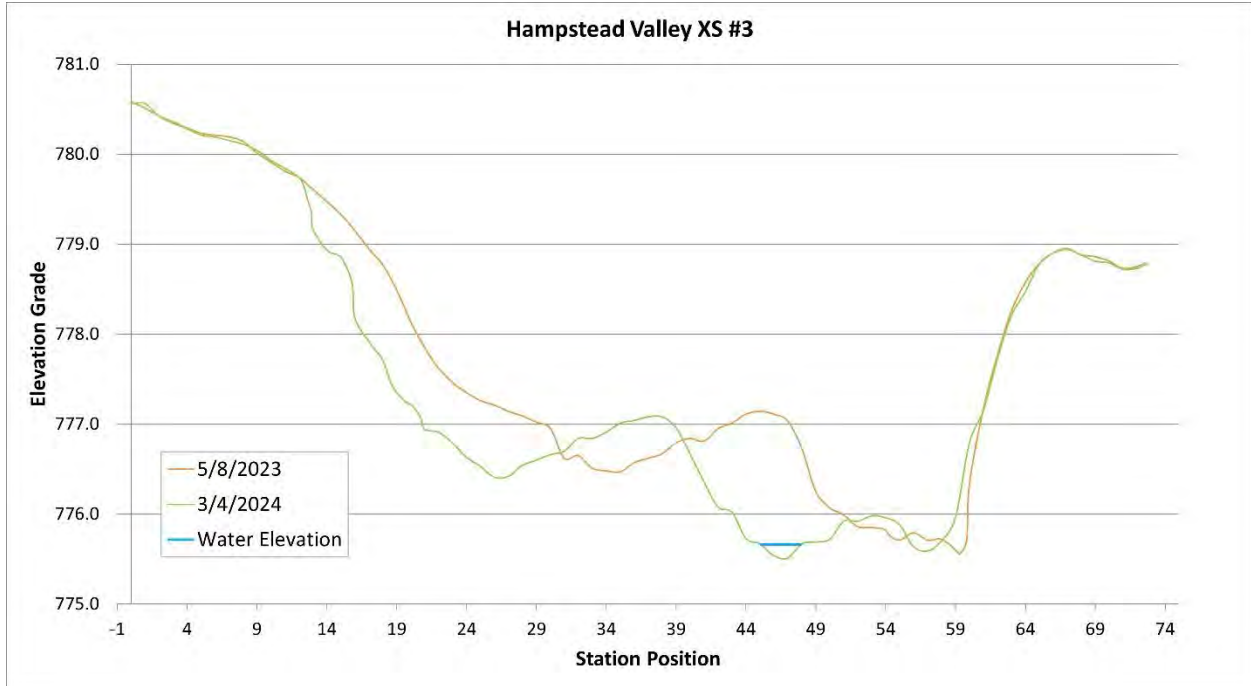
Monumented Cross Sections

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

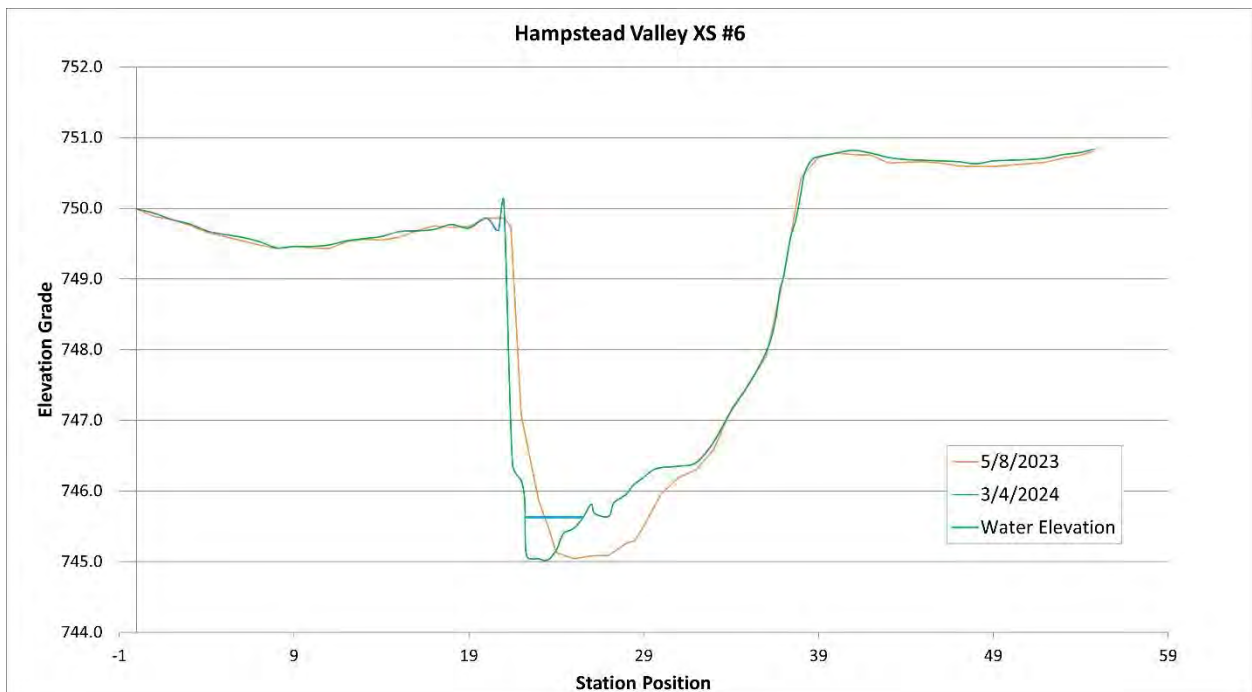
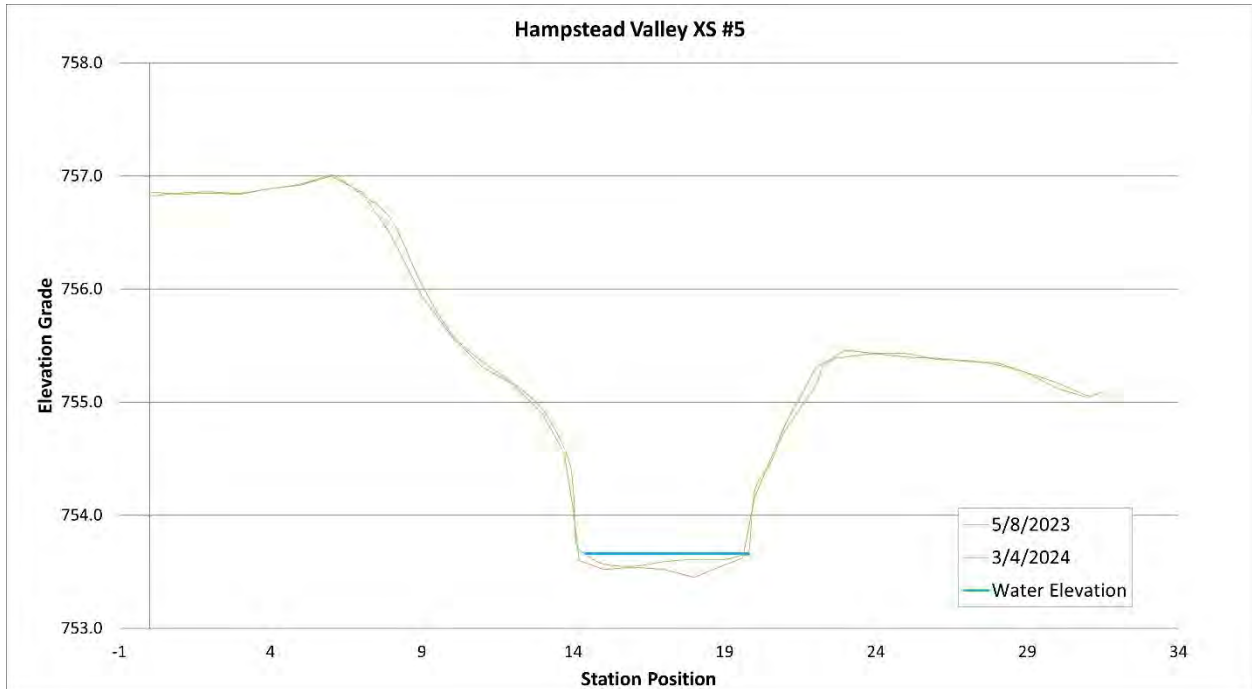
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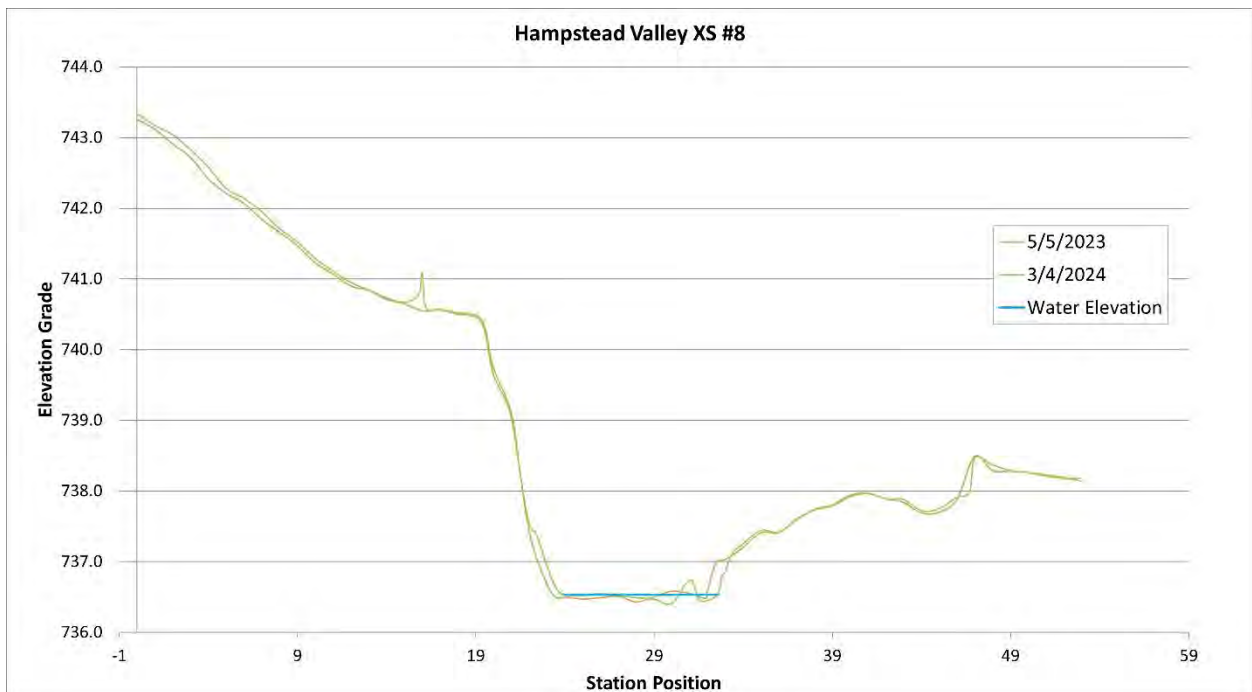
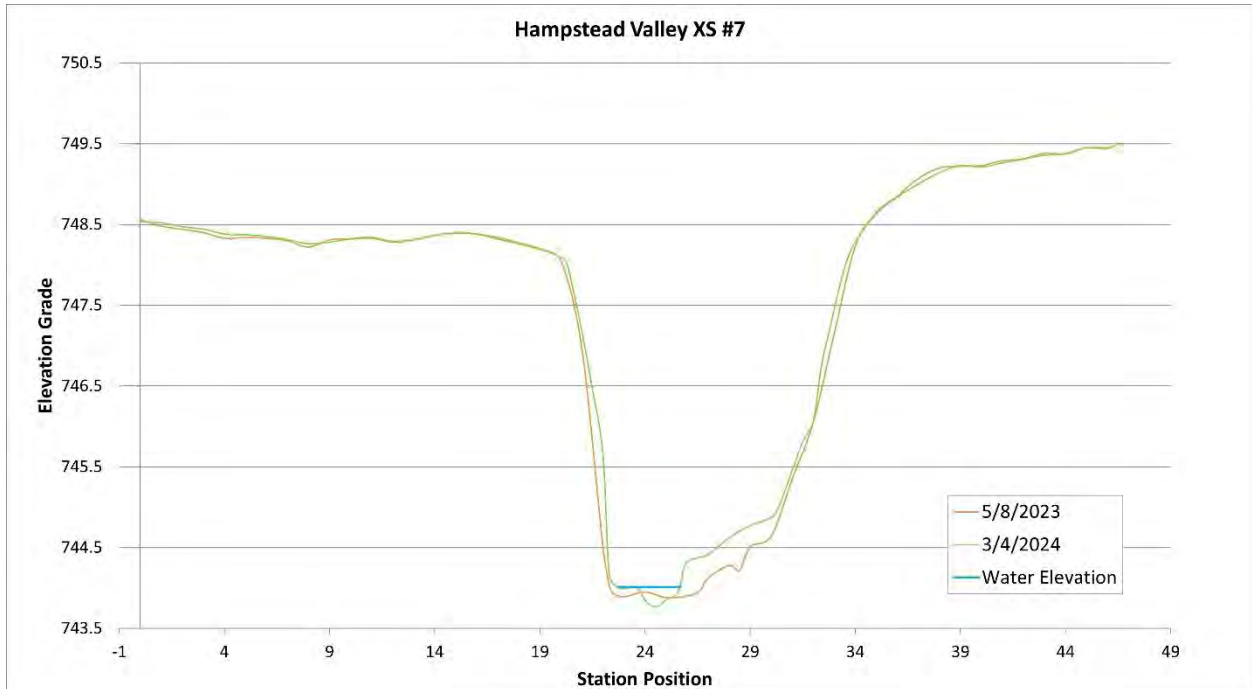
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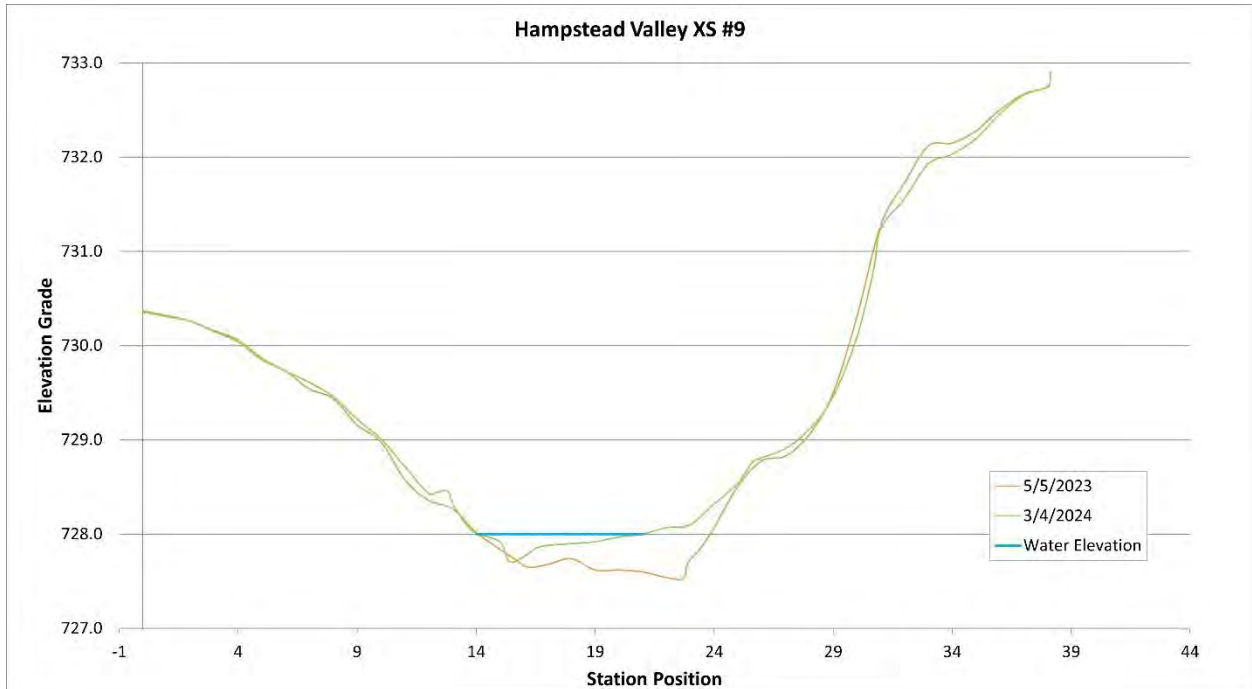
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Appendix E:
Macroinvertebrate Taxonomic Results

**Macroinvertebrate Taxonomic
Identifications Results**

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Macroinvertebrate Taxonomic Identification Results

Order	Family	Taxon	# Individuals
		Nematoda	1
Enchytraeida	Enchytraeidae	Enchytraeidae	1
Opisthopora		Lumbricina	1
Tubificida	Naididae	Naididae	2
Coleoptera	Elmidae	Stenelmis sp.	1
Diptera	Ceratopogonidae	Ceratopogoninae	2
Diptera	Chironomidae	Chaetocladius sp.	4
Diptera	Chironomidae	Corynoneura sp.	1
Diptera	Chironomidae	Cricotopus/Orthocladius sp.	7
Diptera	Chironomidae	Diamesa sp.	13
Diptera	Chironomidae	Micropsectra sp.	1
Diptera	Chironomidae	Neozavrelia sp.	1
Diptera	Chironomidae	Nilotanypus sp.	3
Diptera	Chironomidae	Orthocladius sp.	48
Diptera	Chironomidae	Orthocladius sp.	1
Diptera	Chironomidae	Parametriocnemus sp.	4
Diptera	Chironomidae	Paratanytarsus sp.	1
Diptera	Chironomidae	Polypedilum sp.	1
Diptera	Chironomidae	Thienemannimyia gr. sp.	2
Diptera	Chironomidae	Tvetenia sp.	1
Diptera	Chironomidae	Zavrelimyia sp.	1
Diptera	Empididae	Clinocera sp.	1
Diptera	Tipulidae	Antocha sp.	2
Diptera	Tipulidae	Tipula sp.	1
Ephemeroptera	Baetidae	Baetis sp.	1
Trichoptera	Glossosomatidae	Glossosoma sp.	1
Trichoptera	Hydropsychidae	Hydropsychidae	1
Trichoptera	Hydropsychidae	Hydropsychidae	2
Trichoptera	Hydropsychidae	Cheumatopsyche sp.	8
Trichoptera	Hydropsychidae	Diplectrona sp.	1
Trichoptera	Hydropsychidae	Hydropsyche sp.	2
Trichoptera	Philopotamidae	Chimarra sp.	3
Total Individuals			120
Total Taxa			28

Appendix F: *Geodatabase Comments*

Comments on MDE Geodatabase Design and Documentation

Appendix F

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 latest draft GDB from MDE (November 2024).

Tables and Feature Classes

BMP

- PE_PRE_CONV:
 - We appreciate the clarification on how to populate the PE_PRE_CONV field. We will review the direction provided and work through updating our data as necessary during FY25.
- Redevelopment Scenarios
 - We appreciate the schema changes to allow for capturing redevelopment BMPs within a single record. We will be working to populate these fields for next year's geodatabase submission and will provide questions and comments to MDE as we work through the process.
- BMP_CLASS:
 - Please update the User Guide to indicate that this field is 3 characters long for consistency with the GDB and Excel.

AltBMPPoly

- Annual Practice Records:
 - Previously we had recommended retaining all previous year annual practice records and changing the BMP_STATUS field to Removed.
 - MDE commented that the data entry example of Appendix D in the User's Guide was updated to reflect the suggested changes. However, the example does not discuss the BMP_STATUS field.
 - Please provide guidance on how MDE would like us to update this field for the older annual practice records.
- SOIL_REST_LEVEL:
 - Please update the User Guide and Excel that this is a Short field instead of Text for consistency with the GDB.
- NUMBER_OF_TREES_PLANTED:

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- Please update the User Guide that this is a Double field instead of Short Integer for consistency with the GDB and Excel.

Municipal Facilities

- SALT_TRAINING:
 - This field is mandatory, but older records do not have this information recorded from previous years. We populated with error code -9999 to allow older records to load.

Narrative Files

- MON_STATION_ID
 - With the removal of the monitoring site feature class from the GDB, recommend either removing this field or updating the validation check that references the feature class.
- PERMIT_YEAR:
 - This field has been removed from all other aspects of the GDB. If planning to retain, update the validation check, as this field no longer exists in the Permit Info table.

Discharges from Grey Infrastructure

- CB_SEG_SHED
 - Please update the User Guide and Excel to reflect that this field is 9 characters long for consistency with the GDB.

Quarterly Grading Permit

- LATITUDE, LONGITUDE, and GEN_COMMENTS:
 - Please update the User Guide to list these three fields as Optional for consistency with the GDB and Excel.

Domains

- dFacType:
 - Please remove the “OTH GHP Req” value from this domain in the GDB and update the User Guide and Excel. GHP data is no longer going to be reported in the Municipal Facilities feature class.
- dQuantityManagement:
 - Please update the User Guide and Excel from “V1-V9” to “V01-V09” for consistency with the GDB.
- dSweepingSchedule:
 - Please update the User Guide and Excel to include “Advanced Street Sweeping” or “Mechanical Broom” within each of the domain code descriptions for consistency with the GDB.

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- There are a number of domains that are no longer used within the GDB. While not essential to the function of the schema, we recommend reviewing and deleting unused domains. The following domains are ones that we identified as no longer being used:
 - dFlowValue
 - dOutfallMaterial
 - dOutfalType
 - dIDDEProtocol
 - dOn_OffSite
 - dQuality
 - dShrProtocol

Appendix G:
Mt. Airy Phase II MS4 Permit

**Town of Mount Airy
Phase II Permit Requirements**

APPENDIX G

**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

2024 NPDES MS4 Permit Annual Report

proactively addressed both current and future impervious restoration requirements by providing treatment far above the current permit’s 20% restoration requirement. In MDE’s 2023 Annual Report Review, it was confirmed that the Town is in compliance with the Phase II general permit and has achieved the required restoration of the current permit. Additionally, MDE confirmed that the extra restoration achieved will satisfy the anticipated additional 10% restoration requirement (13 acres) of the next permit term.

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 Water and Sewer Commission webpage 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. > Town educational forums 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 			

2024 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
			<p>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.</p> <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, Community Development, Recreation and Parks Board, Water and Sewer Commission, and staff. The target audience reflects an on-going cooperative community development 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. > 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"> > Let’s Talk Trash Litter Challenge, Hosted same day litter cleanup event w/ 5 town participants, Mount Airy’s Total: 72 bags of trash, bike, tires, engine. 32 Mount Airy participants > Rails to Trails “West” Litter Cleanup Event Town-hosted, 1 event, avg. 10+ participants > Main Street Cleanup – Litter Cleanup, Town-hosted, 1 event, businesses, residents, staff > Town of Mount Airy Adopt-A-Road Program - 4 adopted roads and 4x per year - 16 events > Weed Warriors – Invasive Plant Species Removal - Vegetation Management - 4 events > Mount Airy Sustainability Commission MASC Public Meetings – 6x per year > Recreation and Parks Board Monthly Meetings - 12x per year 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"> o 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/ o 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

2024 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
110 S. Main Street P.O. Box 50 Mount Airy, MD 21771			
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. A 2024 IDDE Guidance Manual has been revised and included on the Appendix B – CD for MDE review. • 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 FY2024. 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: 4 No Flow, 4 Flows tested for no contaminants. Natural groundwater and/or SWM discharge source flows. > 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. No IDDE incidents reported in this jurisdictional area during the permit year. 			
MCM #4	D. Construction Site Stormwater Runoff Control	2. Erosion and Sediment Control	See Phase I Report Narrative

2024 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
<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. 			
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, 12/20 SW 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: 11/2023 - 13 Employees > Carroll County Annual NPDES MS4/12SW Permit Stormwater Pollution Prevention Manager/Supervisory Training: 11/2023 - 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 through 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. 			

2024 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
	> 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.		



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

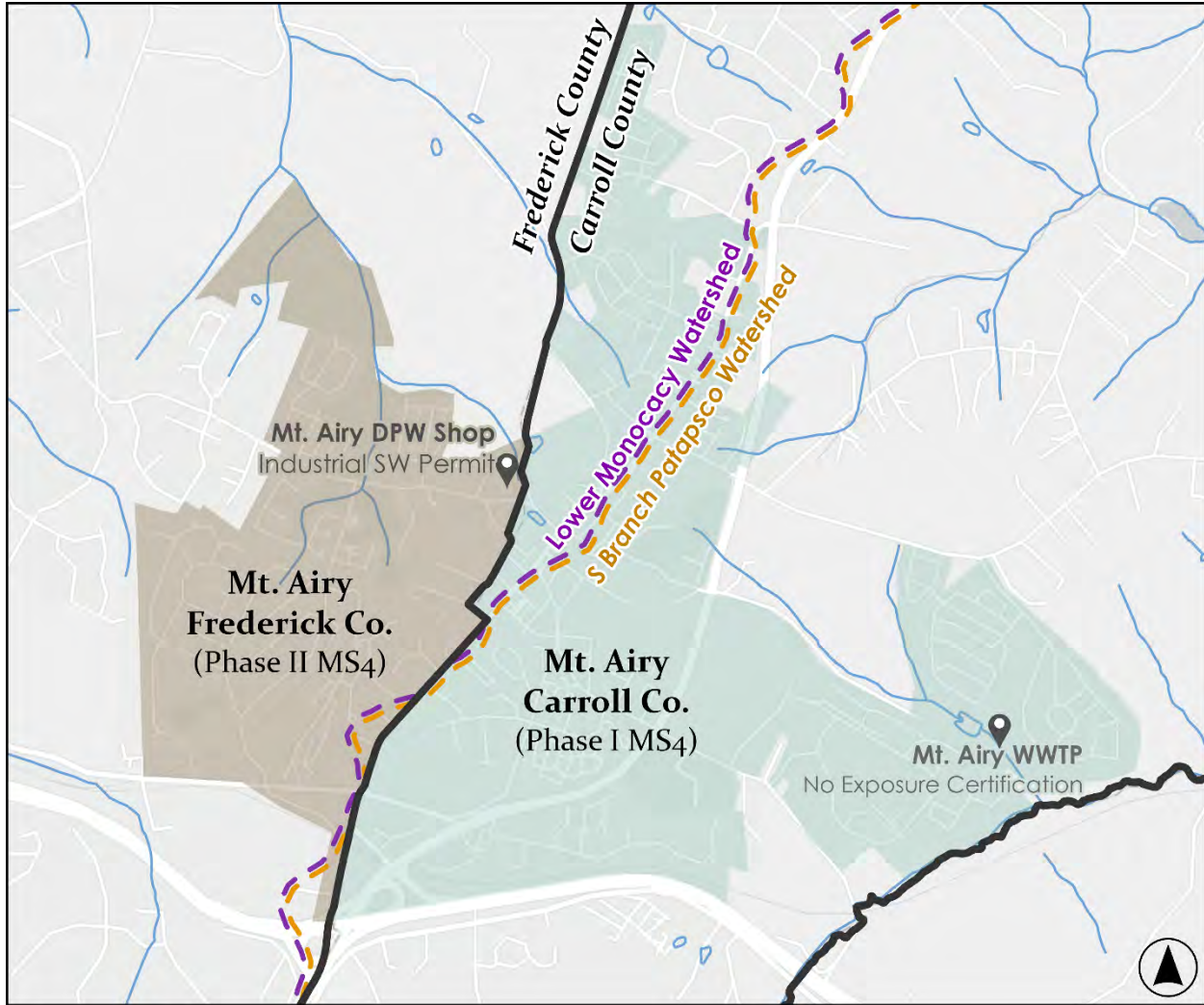
THIS MEMORANDUM OF AGREEMENT ("MOA") is made this 10th day of Mar, 2022, by and between Carroll County (hereinafter sometimes referred to as "Carroll County" or "the County") and the Town of Mount Airy (hereinafter referred to as the "Town").

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



Town of Mount Airy
NPDES MS4 Jurisdictions, Watershed Boundaries, and Industrial Facilities

Correspondence Related to Mount Airy Phase II MS4 Permit

2024 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

2024 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

2024 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.

2024 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.

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

2024 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

2024 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
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Baltimore, Maryland 21230
michelle.crawford1@maryland.gov
410-537-3547 (O)
[Website](#) | [Facebook](#) | [Twitter](#)

2024 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

2024 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

2024 NPDES MS4 Permit Annual Report



Maryland
Department of
the Environment

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

Ben Crumbles, 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

2024 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 Town's requirements for the MCMs through your existing partnership.

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

Debbie

2024 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:

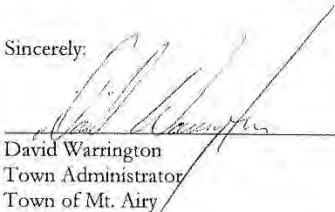
During the July 3, 2019 meeting with Carroll County staff and yourself, discussions relating to annual reporting associated with the Phase II Frederick County side of Mt. Airy took place. We are writing this letter to provide you with our intentions on how we will be addressing Part VI.C. of the NPDES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

2024 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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2024 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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2024 NPDES MS4 Permit Annual Report

Ms. Monika Weierbach, Town Administrator
April 27, 2018
Page 2

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

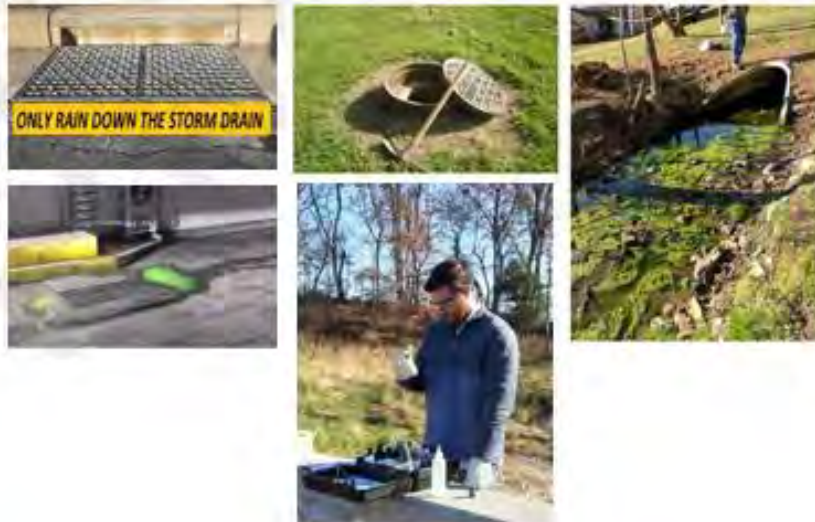
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ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

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



Carroll County Bureau of Resource Management

Revision: December 2024

2024 NPDES MS4 Permit Annual Report

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