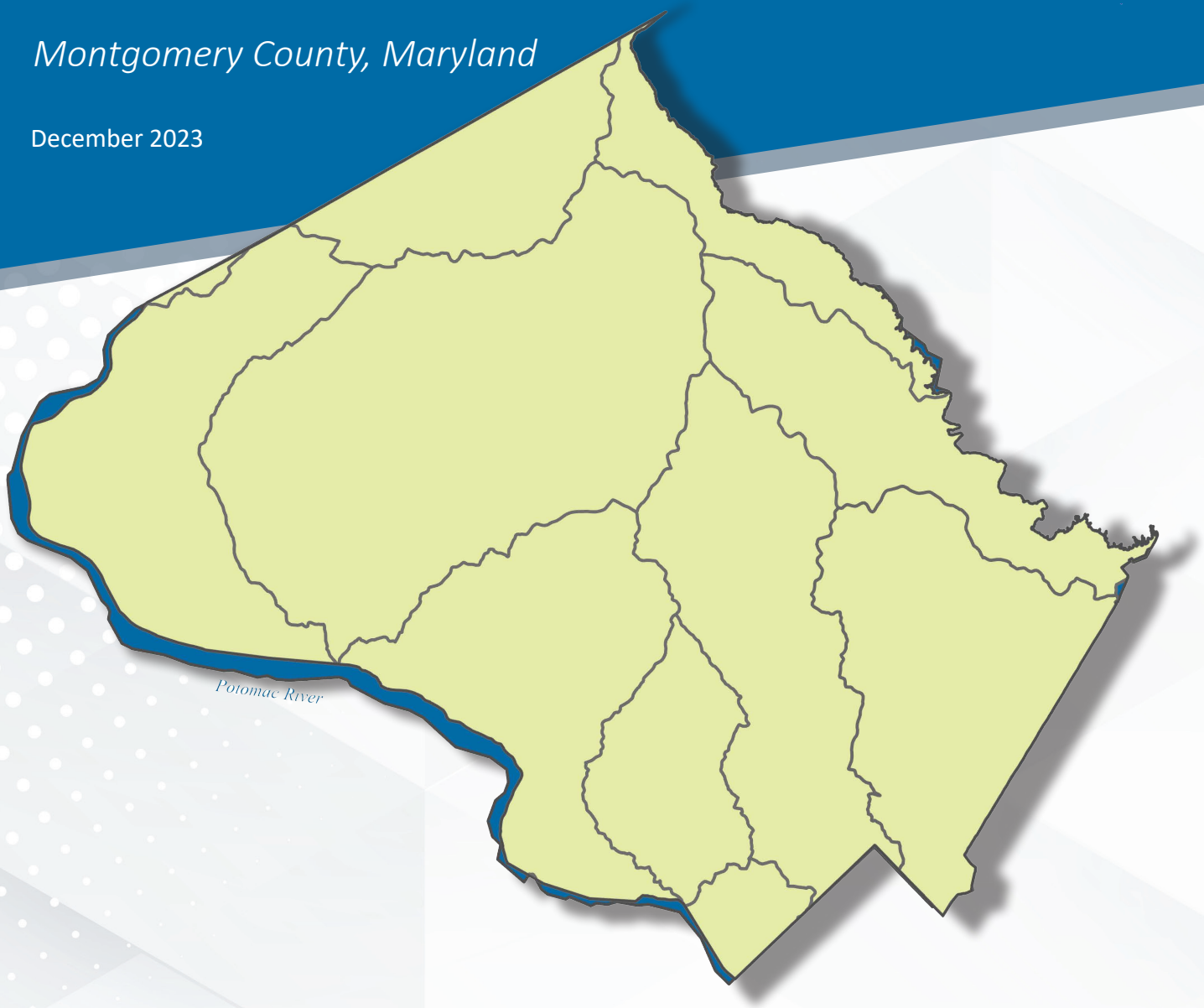
FY2023 COUNTYWIDE STORMWATER TMDL IMPLEMENTATION PLAN

Montgomery County, Maryland

December 2023



CLEAN WATER MONTGOMERY
clean water for all
Dept. of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

FY2023 Countywide Stormwater TMDL Implementation Plan

December 2023

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Appendices

Appendix A: Future Implementation Project List
Appendix B: TMDL TIPP Excel Workbooks

Acronyms

BOD	Biological Oxygen Demand
BMP	Best Management Practice
CBP	Chesapeake Bay Program
CBP WM	Chesapeake Bay Program Watershed Model
CAST	Chesapeake Assessment Scenario Tool
CCIS	Countywide Coordinated Implementation Strategy
EOR	Edge Of River
EOS	Edge Of Stream
EOT	Edge Of Tide
EPA	Environmental Protection Agency
MDE	Maryland Department of The Environment
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
QAPP	Quality Assurance Project Plan
SAP	Sampling and Analysis Plan
SWM	Stormwater Management
SW-WLAs	Stormwater Wasteload Allocations
TBD	To Be Determined
TIPP	Implementation Progress and Planning Tool
TMDL	Total Maximum Daily Load
TN	Nitrogen
TP	Phosphorus
TSS	Sediment
WIP	Watershed Implementation Plan

1 Introduction

Montgomery County has a National Pollutant Discharge Elimination System (NPDES) permit from the State of Maryland that covers the County's Municipal Separate Storm Sewer System (MS4). Permit 20-DP-3320 MD0068349 (MDE, 2021a) dated November 5, 2021, is described in further detail in Section 1.1 below.

A total of 25 Total Maximum Daily Load (TMDL) stormwater wasteload allocations (SW-WLAs) have been established for the County. Two of these wasteload allocations are for the Chesapeake Bay TMDL. The TMDL SW-WLAs address impairments for nitrogen (TN), phosphorus (TP), sediment (TSS), bacteria (*E. coli* and *enterococci*), and polychlorinated biphenyls (PCBs). Parts IV.F.3.a. through d. of the NPDES permit require that a Countywide Stormwater TMDL Implementation Plan (Countywide Plan) be submitted annually to provide updates on progress and planning for all 25 TMDLs. This Countywide Plan satisfies that permit requirement.

The County's initial NPDES MS4 permit was issued on March 15, 1996, and was renewed on February 15, 2010. In January 2012, the Countywide Coordinated Implementation Strategy (CCIS; Montgomery County, 2012) was submitted by the County to the Maryland Department of the Environment (MDE) to meet the 2010 MS4 permit's three major requirements:

- watershed restoration that targets runoff management;
- bacteria, sediment, and nutrient reductions required to meet TMDL SW-WLAs assigned to the Montgomery County MS4 and approved by the Environmental Protection Agency (EPA); and
- trash and litter management.

The CCIS also incorporated information pertinent to effectively include stakeholders in watershed restoration. On September 17, 2018, the County received MDE approval on the *Nontidal Northeast and Northwest Anacostia River PCBs TMDL Implementation Plans* and conditional approval on the remaining TMDL implementation plans included in the CCIS. Final approval was conditional on the County submitting separate watershed-specific implementation plans. The separate plans were intended to more clearly address baseline, progress, and projected load estimates. Specific planned implementation actions and schedules of compliance with regular milestones and anticipated end dates were also to be included.

To satisfy the elements of the conditional approval, Montgomery County updated all nutrient, sediment, and trash local TMDL implementation plans using FY21 data and submitted the plans to MDE in December 2022, addressing MDE's comments. The updated implementation plans presented a long-term plan to address Montgomery County's portion of SW-WLAs for all TMDLs approved by EPA in the County. The plans included final dates for meeting applicable SW-WLAs, schedules for implementing all structural and nonstructural water quality improvement projects for meeting applicable SW-WLAs, detailed cost estimates, and modeled baseline, progress, and planned pollutant loads and load reductions to document progress toward meeting SW-WLAs. The 2022 updates included significant changes in TMDL analyses, cost estimates, and schedules due to the transition of modeling from Phase 5.3.2 to Phase 6 of the Chesapeake Bay Watershed Model (CBWM) and following MDE's *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits* (MDE 2021 Accounting Guidance; MDE, 2021b).

Table 1-1 lists the TMDLs, watersheds, impairments, the year each TMDL was approved by the EPA, and the year each of the County's TMDL plans were approved by MDE.

Table 1-1: Montgomery County TMDLs with MDE Approved Implementation Plans

TMDL	Watershed	Impairment	Year TMDL Approved by EPA	Year Plan Approved by MDE
Chesapeake Bay TMDL	Countywide	TN	2010	2018
		TP		
Non-Tidal Anacostia River PCBs	Subsegment of 8 Digit WS 02140205/Anacostia River - Non-Tidal - Northeast Branch	PCBs	2011	2018
	Subsegment of 8 Digit WS 02140205/Anacostia River - Non-Tidal - Northwest Branch	PCBs	2011	
Anacostia River Nutrients	Subsegment of 8 Digit WS 02140205/Anacostia River - Non-Tidal - Anacostia Northeast Branch	TN	2008	2022 Plan Under MDE Review
		TP		
	Subsegment of 8 Digit WS 02140205/Anacostia River - Non-Tidal - Anacostia Northwest Branch	TN	2008	
		TP		
Anacostia River Sediments	Subsegment of 8 Digit WS 02140205/Anacostia River - Non-Tidal - Anacostia Northeast Branch	TSS	2012	
	Subsegment of 8 Digit WS 02140205/Anacostia River - Non-Tidal - Anacostia Northwest Branch	TSS	2012	
Anacostia River Trash	Subsegment of 8 Digit WS 02140205/Anacostia Watershed - Montgomery County	Trash	2010	
Cabin John Creek Sediment	8 Digit WS 02140207 / Cabin John Creek	TSS	2011	2022 Plan Under MDE Review
Lower Monocacy Nutrients	8 Digit WS 02140302 / Lower Monocacy River	TP	2013	2022 Plan Under MDE Review
Lower Monocacy River Sediment	Subsegment of 8 Digit WS 02140302 / Lower Monocacy River	TSS	2009	
Potomac River Montgomery County Sediment	8 Digit WS 02140202 / Potomac River, Montgomery County	TSS	2012	2022 Plan Under MDE Review
Rock Creek Phosphorus	8 Digit WS 02140206 / Rock Creek	TP	2013	

TMDL	Watershed	Impairment	Year TMDL Approved by EPA	Year Plan Approved by MDE
Rock Creek Sediment	8 Digit WS 02140206 / Rock Creek	TSS	2011	2022 Plan Under MDE Review
Rocky Gorge and Triadelphia Reservoirs Phosphorus and Sediment	8 Digit WS 02131107 / Rocky Gorge Reservoir	TP	2008	2023, Following MDE Review of 2022 Plan
	8 Digit WS 02131108 / Triadelphia Reservoir	TP	2008	
	8 Digit WS 02131108 / Triadelphia Reservoir	TSS	2008	
Seneca Creek Sediment	8 Digit WS 02140208 / Seneca Creek	TSS	2011	2022 Plan Under MDE Review
Anacostia River Bacteria	Subsegment of 8 Digit WS 02140205/Anacostia River - Upstream of Confluence of Northwest Branch and Northeast Branch	*Enterococci*	2007	Plan In Development
Cabin John Creek Bacteria	8 Digit WS 02140207 / Cabin John Creek	*E. Coli*	2007	Plan In Development
Lower Monocacy River Bacteria	8 Digit WS 02140302 / Lower Monocacy River and Multiple 8 Digit WS / Lower Monocacy River	*E. Coli*	2009	Plan In Development
Rock Creek Bacteria	Subsegment of 8 Digit WS 02140206 / Rock Creek	*Enterococci*	2007	Plan In Development
Patuxent River PCBs	Segmentshed PAXTF/Patuxent River Tidal Fresh	PCBs	2017	Plan In Development

Adaptive Management

Adaptive management is a critical component of achieving the County's SW-WLAs goals. MDE's *General Guidance for Local TMDL (Total Maximum Daily Load) Stormwater Wasteload Allocation (SW-WLA) Watershed Implementation Plans (WIPs)* (MDE, 2022b) calls for an iterative and adaptive approach for implementation. As presented in this plan, the County has established implementation and load reduction targets at specific intervals between current progress and the TMDL end date for reduction goals to provide interim planning targets and to serve as a vehicle for assessing progress toward the load reduction targets. Planning targets will be re-evaluated against progress and revised, as needed, to ensure that Montgomery County is on track to meet established goals.

If new methods of stormwater treatment are developed, or better approaches to source control are found subsequent to the development of the plan, the County's strategy can be revised to incorporate the changes. Similarly, if some elements of the plan do not achieve the expected reductions in loads, adaptations and improvements can be implemented and reported in annual progress updates.

1.1 Montgomery County MS4 Permit

Montgomery County, along with other medium and large Phase I jurisdictions in Maryland, has been operating its MS4 under an NPDES permit issued by MDE. The County's current MS4 permit (20-DP-3320, MD0068349; MDE 2021a), issued November 5, 2021, requires compliance with pollutant load limits from both the Chesapeake Bay TMDL and local TMDLs with approved SW-WLAs. The County is also required to meet an impervious surface treatment goal of 1,814 impervious acres that have not been treated to the maximum extent practicable (MEP) by the end of the current 5-year permit term (November 4, 2026). See Section 1.3 for details.

A new requirement of the MS4 permit is the development of a Countywide TMDL Stormwater Implementation Plan (Countywide Plan) that, as described by MDE, includes lists of projects and programs to meet the load reductions, describes analysis and modeling methods, and includes final dates and benchmarks. The Countywide Plan is to be updated annually to document progress for each TMDL SW-WLA with net pollutants reduced and provide updates to projects, programs, costs, and schedules. An excerpt from the current permit PART IV.F.3. is included here:

3. For all TMDLs and WLAs listed in Appendix A, the County shall annually document, in one Countywide Stormwater TMDL Implementation Plan, updated progress toward meeting these TMDL WLAs. This Countywide Stormwater TMDL Implementation Plan shall include:
    a. A summary of all completed BMPs, programmatic initiatives, alternative control practices, or other actions implemented for each TMDL stormwater WLA;
    b. An analysis and table summary of the net pollutant reductions achieved annually and cumulatively for each TMDL stormwater WLA;
    c. An updated list of proposed BMPs, programmatic initiatives, and alternative control practices, as necessary, to demonstrate adequate progress toward meeting the Department's approved benchmarks and final stormwater WLA implementation dates; and
    d. Updates on the County's efforts to reduce trash, floatables, and debris, and show progress toward achieving the annual trash reduction allocation required by the Anacostia trash TMDL. The updates shall describe the status of trash elimination efforts including resources (e.g., personnel and financial) expended and the effectiveness of all program components including:
        i. Quantifying annual trash reductions using the Department's TMDL analysis or an equivalent and comparable County trash reduction model;
        ii. The public education and outreach strategy to initiate or increase residential and commercial recycling rates, improve trash management, and reduce littering; and
        iii. An annual evaluation of the local trash reduction strategy including any modifications necessary to improve source reduction and proper disposal.

Per the County's permit, PART IV.F.2., as new TMDLs with SW-WLAs applicable to the County are developed, restoration plans for those pollutants will need to be prepared within one year of EPA approval. Once the implementation plan is approved by MDE, the new TMDL will be incorporated in the Countywide Plan and the information required under PART IV.F.3. will be reported.

When a new MS4 permit is issued in the future, if there are any significant changes in TMDL analyses, methods, or pollutant reductions, the County will update all TMDL implementation plans by the new permit's one year anniversary. The County will then add the MDE approved TMDL implementation plans to the Countywide Plan for annual progress updates for the remainder of the permit term.

To ensure the County is meeting permit conditions, the Countywide Plan is organized as follows:

Section 1 Introduction

Section 2 Describes the modeling methods used to calculate baseline loads, fiscal year 2022 and 2023 (FY22 and FY23) progress reductions, and planned reductions presented in this plan.

Section 3 Presents nutrient and sediment local TMDL progress organized by watershed. This section includes summary tables of all completed BMPs, programmatic initiatives, alternative control practices, or other actions implemented for each local TMDL SW-WLA and associated load reductions, per permit requirements in **PART IV.F.3.a.**, and **PART IV.F.3.b**. A summary of proposed BMPs needed to meet final SW-WLA goals and their associated load reductions is also included, per **PART IV.F.3.c.** Progress implementation benchmark evaluations are also provided in this section.

Section 4 Presents progress on the County's trash local TMDL. This section includes a summary table of all completed BMPs, programmatic initiatives, alternative control practices, or other actions implemented and associated load reductions, per permit requirements in **PART IV.F.3.a.**, **PART IV.F.3.b.**, and **PART IV.F.3.d**. A summary of proposed BMPs needed to meet final SW-WLA goals and their associated load reductions is also included, per **PART IV.F.3.c.**

Section 5 Provides an update on the County's bacteria TMDL implementation plans, per **PART IV.F.3.**

Section 6 Provides an update on the County's PCBs TMDL implementation plans, per **PART IV.F.3.**

Section 7 Includes summary tables of all completed BMPs, programmatic initiatives, alternative control practices, or other actions implemented for the Chesapeake Bay TMDL SW-WLAs and associated load reductions, per permit requirements in **PART IV.F.3.a.** and **PART IV.F.3.b.** A summary of proposed BMPs and their associated load reductions is also included, per **PART IV.F.3.c.**

1.2 TMDL Allocations

The TMDLs listed in Table 1-1 are also included in Appendix A of the County's current permit which lists the TMDLs and SW-WLAs applicable to Montgomery County. Two additional TMDLs are listed in Appendix A but will not be included in this Countywide Plan: Anacostia River Northeast Branch and Northwest Branch biological oxygen demand (BOD; TMDL approved by EPA in 2008) and Triadelphia Reservoir TSS (TMDL approved by EPA in 2008). The County is not required to draft a plan for its BOD local TMDL in the Anacostia River watershed because BOD loads will be reduced with corollary nutrient plans. The Triadelphia Reservoir TSS TMDL included a 0% reduction requirement for urban stormwater; therefore,

an implementation plan addressing TSS loads was not needed. Although Appendix A of the County's permit also includes TSS as an additional impairment in the Chesapeake Bay TMDL, there is no assigned percent reduction requirement or SW-WLA. As specified in the Chesapeake Bay TMDL, if TP is met, TSS will be met as well (EPA, 2010). Although a TSS target reduction is not included for the Chesapeake Bay TMDL, the County is presenting the TSS reductions associated with restoration BMPs in this Plan.

The SW-WLA values presented in this plan do not match what is listed in Appendix A. This difference is expected because the modeling completed by MDE to calculate the SW-WLAs at the time of permit issuance may be slightly different than the County's modeling scenarios, due to available BMP data used. In order to derive the County MS4-specific SW-WLA load reduction targets, the TMDL goals were translated using modeled baseline loads and MDE's published reduction percentages for each TMDL. The procedure is described in more detail in sections 1.2.1 and 1.2.2.

1.2.1 Local TMDLs

Figure 1-1 shows all local TMDLs with SW-WLAs assigned to Montgomery County. As stated above, Anacostia River BOD and Triadelphia Reservoir TSS are not included in this Countywide Plan. Patuxent River Tidal Fresh PCBs local TMDL is a multi-8-digit watershed. Montgomery County's portion includes the area within Rocky Gorge Reservoir and Triadelphia Reservoir watersheds.

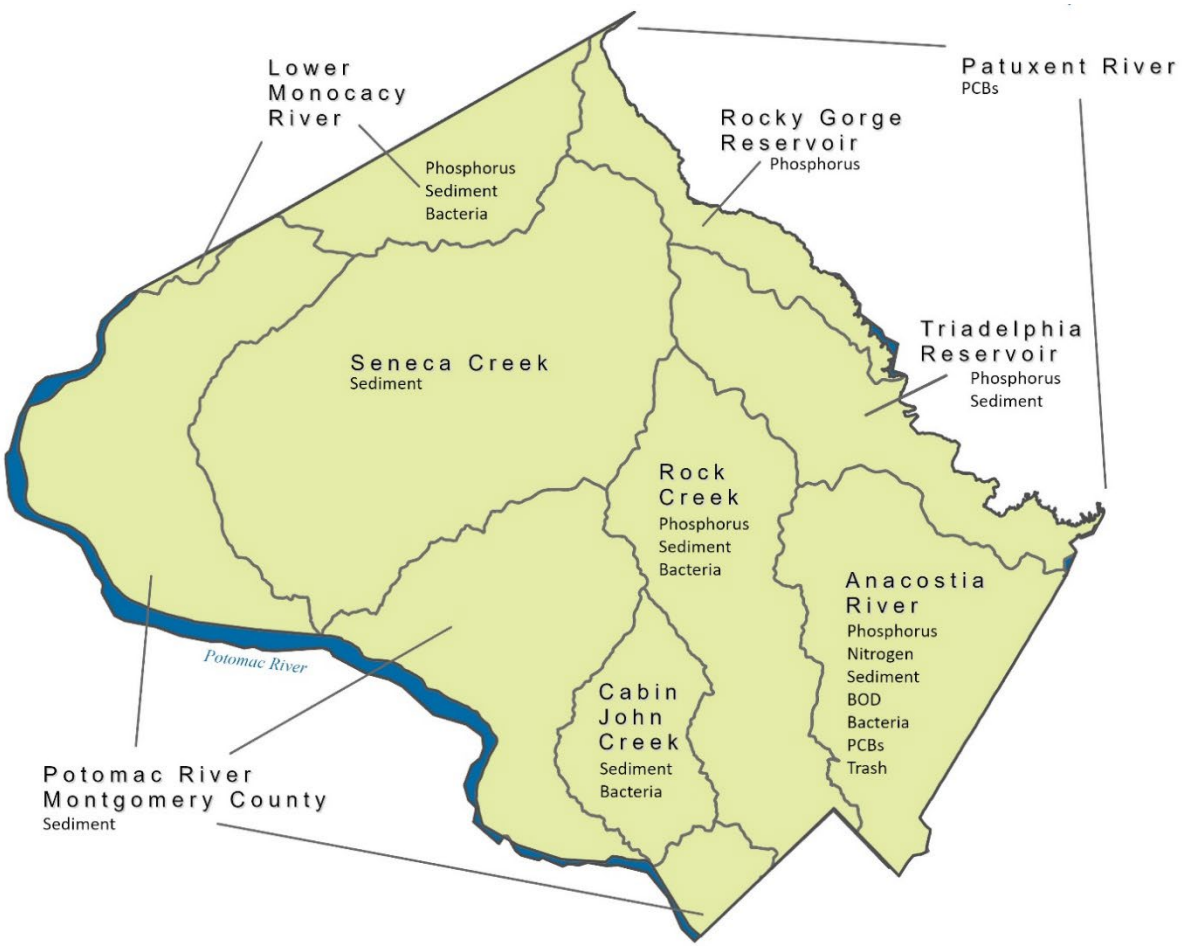

Figure 1-1: Montgomery County Local TMDLs with SW-WLAs

Table 1-2 provides a summary of Montgomery County's portions of target reductions towards the nutrient, sediment, and trash local TMDLs. The County's bacteria and PCBs TMDLs are excluded from Table 2 but are described and mapped in Sections 5 and 6 respectively. Per guidance from MDE (2022c and 2022e), baseline and progress modeling are not required for bacteria and PCBs TMDLs. Implementation plans developed for bacteria and PCBs TMDLs under the most recent guidance are focused on source identification, remediation, monitoring and showing implementation progress over time rather than achieving SW-WLAs by a final target date.

The terms listed below are used throughout the plan and are presented and defined here to assist the reader in understanding the definitions of each and how they were derived:

- **EOS lbs/yr:** An edge of stream (EOS) load is the amount of pollutant that is transported from a source to the nearest stream. Local TMDLs for impairments at the freshwater tributary scale are developed and modeled at the EOS scale.
- **EOR lbs/yr:** An edge of river (EOR) load is the amount of pollutant that is transported from a small stream to a large river. A stream-to-river delivery factor is available for each land-river segment of the Bay watershed and can be applied to the EOS loads to account for the fate and transport of nutrients and sediment from a small stream to a large river. Rather than focusing on the loads to the small tributary streams of the watershed, the EOR scale may be more appropriate when the impairment is in the downstream receiving water of the reservoirs, not in the tributary streams (e.g., reservoirs).
- **Baseline Load:** Baseline pollutant load levels (i.e., land use loads with baseline BMPs) from baseline year conditions in the Montgomery County MS4 source sector calculated using MDE's TMDL Implementation Progress and Planning Tool (TIPP) spreadsheet tool, which is described further in Section 2.
- **Target % Reduction:** Percent reductions required in the TMDL and assigned to Montgomery County Phase I MS4 stormwater sector (MS4 Permit Appendix A and WLA Search tool available in MDE's TMDL Data Center; https://wlat.mde.state.md.us/WLASearch.aspx).
- **Target Reduction:** Target reduction calculation by multiplying the reduction percent published by the baseline load.
- **Target Load (SW-WLA):** Stormwater wasteload allocations (SW-WLA) are allocated loads derived using the following calculation: Baseline Load – (Baseline Load x Target % Reduction). The SW-WLA is the portion of the overall TMDL that is assigned to or 'allocated' to the responsibility of the stormwater sector.
- **Target Year:** Projected year when the local TMDL target reduction goal will be achieved through modeling.

Table 1-2: Montgomery County Baseline and Target Loads for Nutrient, Sediment, and Trash Local TMDLs

Watershed Name	8-Digit Watershed Number	TMDL Pollutant	Units	Baseline Year	Baseline Load	Target % Reduction	Target Reduction	Target Load (SW-WLA)	Target Year
Anacostia River – Northeast Branch	02140205	TN	EOS lbs/yr	1997	68,426	81.0%	55,425	13,001	2070
		TP	EOS lbs/yr	1997	7,229	81.2%	5,870	1,359	2050
		TSS	EOS lbs/yr	1997	21,139,312	85.0%	17,968,415	3,170,897	2038
Anacostia River – Northwest Branch	02140205	TN	EOS lbs/yr	1997	141,380	81.0%	114,518	26,862	2085
		TP	EOS lbs/yr	1997	14,192	81.2%	11,524	2,668	2065
		TSS	EOS lbs/yr	1997	39,640,358	85.0%	33,694,304	5,946,054	2059
Anacostia River	02140205	Trash	lbs/yr	2009	240,117	100.0%	240,117	n/a	2035
Cabin John Creek	02140207	TSS	EOS lbs/yr	2005	27,581,230	22.7%	6,260,939	21,320,291	2032
Lower Monocacy River	02140302	TP	EOS lbs/yr	2009	4,222	30.0%	1,267	2,955	2033
		TSS	EOS lbs/yr	2000	15,593,256	60.7%	9,465,107	6,128,150	2036
Potomac River MO County	02140202	TSS	EOS lbs/yr	2005	75,699,242	36.2%	27,403,126	48,296,117	2045
Rock Creek	02140206	TP	EOS lbs/yr	2009	14,896	35.0%	5,213	9,682	2050
		TSS	EOS lbs/yr	2005	33,174,720	38.3%	12,705,818	20,468,802	2030
Rocky Gorge Reservoir	02131107	TP	EOR lbs/yr	2000	5,593	15.0%	839	4,754	2029
Triadelphia Reservoir	02131108	TP	EOR lbs/yr	2000	940	15.0%	141	799	2028
Seneca Creek	02140208	TSS	EOS lbs/yr	2005	67,599,0912	44.6%	30,149,195	37,449,897	2064

1.2.2 Chesapeake Bay TMDL

The Chesapeake Bay TMDL, established by the EPA (EPA, 2010), sets pollution limits for TN, TP, and TSS in the Chesapeake Bay Watershed. Compliance with the Chesapeake Bay TMDL is regulated in the MS4 permit through the use of the impervious surface treatment strategy as described in section 1.3 below. The Chesapeake Bay TMDL is listed in Appendix A of the MS4 permit with SW-WLAs for TN and TP presented at the Bay segmentshed scale for informational purposes. Per communication from MDE (MDE, 2022a), countywide implementation plans are also acceptable for this permit term. Unlike TN and TP, there is no required percent reduction for TSS in the Chesapeake Bay TMDL; rather, it is assumed in the overall Bay TMDL framework that the TSS target will be met if the TP target is met. Although a TSS target reduction is not included for the Chesapeake Bay TMDL, the County is presenting the TSS reductions associated with restoration BMPs in this Countywide Plan for reference.

Table 1-3 provides a summary of Montgomery County's portions of target EOT reductions towards the Bay TMDL. The terms listed below are used throughout the plan and are presented and defined here to assist the reader in understanding the definitions of each and how they were derived:

- **EOT lbs/yr:** An edge of tide load (EOT load) is the amount of pollutant that is transported to the tidal waters of the Chesapeake Bay. EOT loads are generally less than EOS loads due to losses during transport from streams to the Bay. The Bay TMDL analysis is conducted and presented at the EOT scale.
- **2010 Baseline Load:** Baseline pollutant load levels (i.e., land use loads with baseline BMPs) from 2010 conditions in the Montgomery County MS4 source sector using MDE's TIPP spreadsheet tool, which is described further in Section 2.
- **Target % Reduction:** Percent reductions required in the TMDL and assigned to Montgomery County Phase I MS4 stormwater sector (MS4 Permit Appendix A and WLA Search tool available in MDE's TMDL Data Center; https://wlat.mde.state.md.us/WLASearch.aspx). If TP target is met, TSS target will be met.
- **Target Reduction:** Target reduction translated by multiplying the reduction percent published by the 2010 baseline load. If TP target is met, TSS target will be met.
- **Target Load (SW-WLA):** Stormwater wasteload allocations (SW-WLA) are allocated loads derived using the following calculation for the Bay TMDL: 2010 Baseline Load – (2010 Baseline Load x Target % Reduction). The SW-WLA is the portion of the overall TMDL that is assigned to of 'allocated' to the responsibility of the stormwater sector.

Table 1-3: Montgomery County Chesapeake Bay TMDL Baseline and Target Loads

TMDL Pollutant	2010 Baseline Load EOT lbs/yr	Target % Reduction	Target Reduction EOT lbs/yr	Target Load (SW-WLA) EOT lbs/yr	Target Year
TN	818,891	17.5%	143,224	675,667	2025
TP	86,377	27.8%	24,039	62,339	2025
TSS	156,079,190	n/a	n/a	n/a	n/a

1.3 Impervious Restoration

Under the County's current MS4 permit, PART IV.E. Stormwater Restoration, MDE requires the County to meet an impervious surface treatment goal of 1,814 impervious acres that have not been treated to the MEP by the end of the current 5-year permit term (November 4, 2026). Per the County's permit, the impervious acre restoration requirements and associated pollutant reductions are consistent with Maryland's Phase III Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL and 2025 nutrient load targets and for local TMDL implementation targets.

Although impervious crediting and reporting are not included in this Countywide Plan, the County's effort to complete the impervious crediting requirements and restoration benchmarks as outlined in Table 1 of the new permit (PART IV.E.7.) will drive the planning and budgeting for TMDL implementation throughout the current permit term. The implementation BMPs and practices beyond the permit term that are planned and estimated for TMDL IP modeling have not been fully funded and approved in the current

FY23-FY28 Capital Improvement Program budget. The cost estimates beyond fiscal year 2026 are provided as assumptions for planning.

2 Modeling Approach

A modified version of MDE's TIPP spreadsheet tool (Version: 04/06/2022; MDE, 2022d) was used to assess nutrient, sediment, and trash local TMDL FY22 and FY23 progress and whether goals were met and to estimate load reduction applied towards the Chesapeake Bay TMDL. The tool calculates pollutant load reductions based on the data of existing, programmed, and potential identified MDE approved BMPs that are maintained in the County's NPDES geodatabase. The TIPP was developed by MDE for use by MS4 jurisdictions for local TMDL modeling and planning. The TIPP uses methods associated with Phase 6 of the Chesapeake Bay Watershed Model (CBWM), which is consistent with the MDE 2021 Accounting Guidance. Additional information on the TIPP, including frequently asked questions and a live walkthrough and demo, can be found on MDE's website at https://mde.maryland.gov/programs/water/TMDL/DataCenter/Pages/TMDLStormwaterToolkit.aspx.

Per guidance from MDE (2022c and 2022e), baseline and progress modeling are not required for bacteria and PCBs TMDLs. Implementation plans developed for bacteria and PCBs TMDLs under the most recent guidance are focused on source identification, remediation, monitoring and showing implementation progress over time rather than achieving SW-WLAs by a final target date. Montgomery County is currently developing separate bacteria and PCBs TMDL implementation plans. Updates on the County's bacteria and PCBs TMDL implementation plans are provided in Sections 5 and 6.

3 Nutrient and Sediment Local TMDLs

Completed BMP implementation and loads for FY22 and FY23 annual restoration and FY22 and FY23 cumulative progress are presented in the sections below by TMDL watershed. Progress, relevant to meeting load reduction goals, is assessed by comparing the calculated percent reduction achieved for each TMDL against the MDE published percent reduction assigned to Montgomery County. FY22 BMP implementation and modeling results are reported in this Countywide Plan because the TMDL implementation plans submitted to MDE in December 2022 were developed using restoration data through FY21; therefore, FY22 information has not been previously reported.

Planned BMPs are summarized in the BMP Implementation tables located in each watershed section of Section 3 and represent what is needed to achieve individual SW-WLA targets. A list of planned BMPs is provided in Appendix A.

The County went through a data transition period in FY21 where BMP data were reviewed and verified. Data used for FY22 and FY23 modeling are more accurate and complete. These changes in implementation data impacted the modeled cumulative progress load reductions reported in the Progress and Planned Reduction tables in each watershed section in Section 3. The County will retain the target years established in the 2022 implementation plans; however, additional BMPs were needed and identified to achieve the reduction goals as noted in the TMDL BMP implementation tables and planned BMPs provided in Appendix A.

The terms listed below are used throughout this section, and in Section 7 – Chesapeake Bay TMDL, and are presented and defined here to assist the reader in understanding the definitions of each:

BMP Implementation

- **Unit:** Total number of projects and amount of area or length of stream that is treated by the BMP. Unit is specified by BMP type.
- **FY22:** Restoration BMPs implemented during the fiscal year 2022 (FY22) reporting period with built dates between July 1, 2021, and June 30, 2022, the end of the reporting period for this Countywide Plan.
- **FY23:** Restoration BMPs implemented during the fiscal year 2023 (FY23) reporting period with built dates between July 1, 2022, and June 30, 2023, the end of the reporting period for this Countywide Plan.
- **FY23 Progress:** All restoration BMPs currently implemented. Includes BMPs with built dates between the TMDL baseline date and June 30, 2023, the end of the reporting period for this Countywide Plan. The projects have been inspected and verified to ensure that they meet MDE's requirements.
- **Planned:** BMP implementation included in the following planning tiers:
    - Under Construction: Projects that have completed the design phase and are currently under construction; these projects do not yet have a built date.
    - In Design: Projects that are currently in design and have not started construction; these projects do not yet have a built date.
    - Planned: Projects included in the County's Capital Improvement Projects (CIP) database but with no open task order at this time.
    - To Be Determined (TBD): Project opportunities from past watershed assessments that are: in the stormwater management (SWM)/Stream Restoration suitable area (Medium and High), within the MS4 permit area (for SWM), and outside of the treated area (for SWM). Additional hypothetical projects needed to hit the TMDL target are also included in this category.
- **Total:** Sum of the BMP implementation including FY23 Progress and Planned. This represents all restoration BMPs needed to achieve the local TMDL targets.

Load Reductions

- **Target % Reduction:** Percent reduction of baseline load required in the TMDL and assigned to Montgomery County Phase I MS4 stormwater sector (MS4 Permit Appendix A and WLA Search tool available in MDE's TMDL Data Center; https://wlat.mde.state.md.us/WLASearch.aspx).
- **Target Reduction:** Target reduction calculation by multiplying the reduction percent published by the baseline load.
- **Target Load (SW-WLA):** Stormwater wasteload allocations (SW-WLA) are allocated loads derived using the following calculation: Baseline Load – (Baseline Load x Target % Reduction). The SW-WLA is the portion of the overall TMDL that is assigned to of 'allocated' to the responsibility of the stormwater sector.

- **FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022:** Annual pollutant reduction associated with the BMP implementation completed in only the FY22 reporting period with built dates between July 1, 2021, and June 30, 2022.
- **FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022:** Percent reduction associated with the BMP implementation completed in only the FY22 reporting period with built dates between July 1, 2021, and June 30, 2022.
- **FY22 Cumulative Progress Reduction through 6/30/2022:** Cumulative pollutant reduction associated with all completed BMPs with built dates between the baseline date and June 30, 2022.
- **FY22 Progress % Reduction through 6/30/2022:** Percent reduction as of the end of the FY22 reporting year that is associated with cumulative pollutant reductions from all completed BMPs with built dates between the baseline date and June 30, 2022.
- **FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023:** Annual pollutant reduction associated with the BMP implementation completed in only the FY23 reporting period with built dates between July 1, 2022, and June 30, 2023.
- **FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023:** Percent reduction associated with the BMP implementation completed in only the FY23 reporting period with built dates between July 1, 2022, and June 30, 2023.
- **FY23 Cumulative Progress Reduction through 6/30/2023:** Cumulative pollutant reduction associated with all completed BMPs with built dates between the baseline date and June 30, 2023.
- **FY23 Progress % Reduction through 6/30/2023:** Percent reduction associated with cumulative pollutant reductions from all completed BMPs with built dates between the baseline date and June 30, 2023. This % reduction is compared against the Target % Reduction to assess progress.
- **Planned Restoration Reduction:** Pollutant reduction associated with BMP implementation in only the planning tiers (Under Construction, In Design, Planned, To Be Determined).
- **Planned Restoration % Reduction:** Percent reduction associated with the BMP implementation in only the planning restoration tiers (Under Construction, In Design, Planned, To Be Determined).
- **Total Implementation Reductions:** Sum of pollutant reduction from FY23 Cumulative Progress and Planned Restoration.
- **Total Implementation % Reduction:** Percent reduction associated with the Total Implementation Reduction, defined above. This % reduction is assessed against the Target % Reduction. The Total Implementation % Reduction should match or exceed the Target % Reduction.
- **Target Year:** Projected year when the local TMDL target reduction goal will be achieved through modeling.

3.1 Anacostia River

The Anacostia River watershed is located in the southeastern portion of Montgomery County (Figure 3-1). The watershed flows south through Montgomery County into Prince George's County and Washington D.C. where it drains to the Potomac River, which ultimately leads to the Chesapeake Bay. The Montgomery County portion of the Anacostia River watershed is approximately 38,946 acres (60.9 square miles) in area and contains approximately 229.1 total miles of streams based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data and comprises two branches, the Northwest Branch and Northeast Branch. The watershed includes several named streams, including Northeast Branch, Northwest Branch, Sligo Creek, Paint Branch, Little Paint Branch, Sandy Spring, and Bel Pre Creek, among others (Figure 3-2).

Montgomery County is responsible for ten TMDLs within the Anacostia River watershed. These include one TN, TP, and TSS TMDL for the Northwest and Northeast Branches respectively. BMP implementation and progress for these pollutants is addressed in Section 3.1.1. There is also a PCBs TMDL for the Northwest and Northeast branches and bacteria and trash TMDLs for the 8-digit watershed. Progress for trash, bacteria and PCBs TMDLs are outlined in sections 4, 5, and 6, respectively, of this plan.

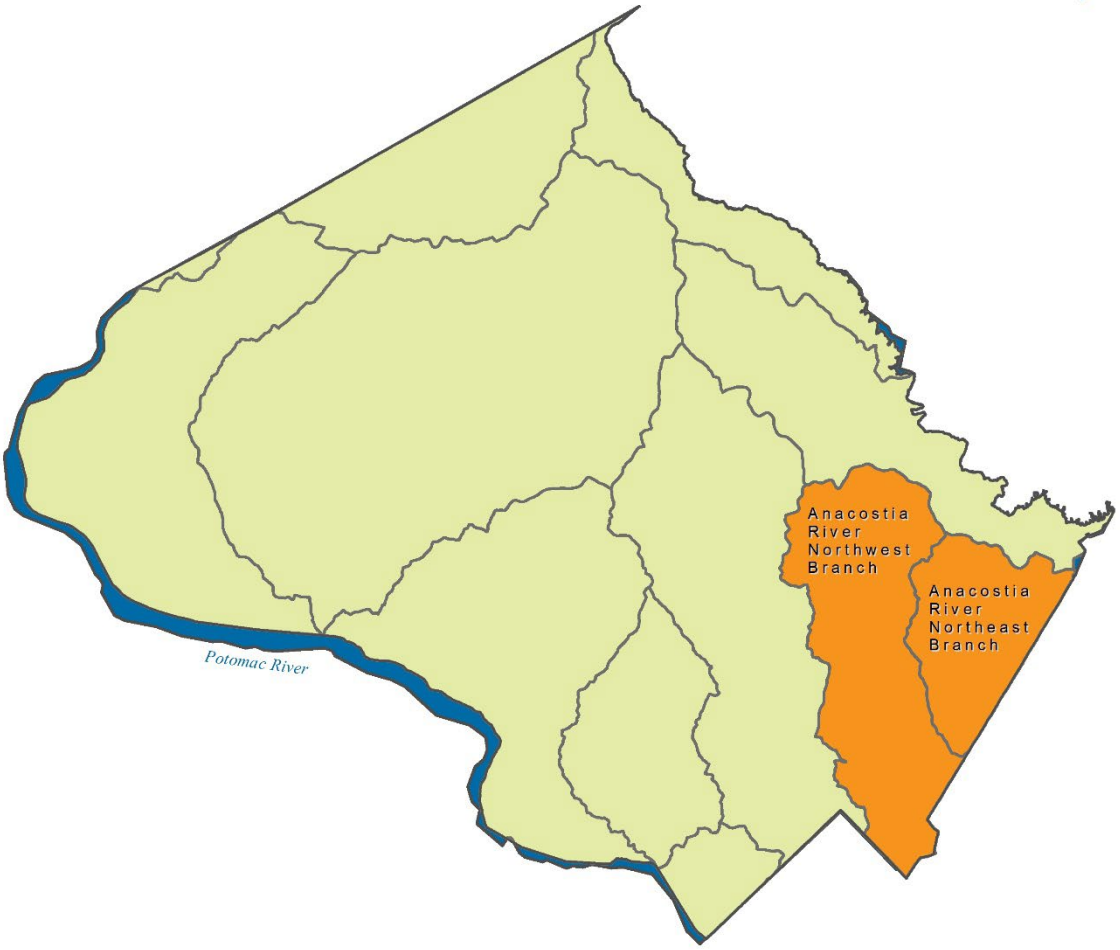

Figure 3-1: Location of Anacostia River Watershed, Northwest Branch and Northeast Branch Subwatersheds

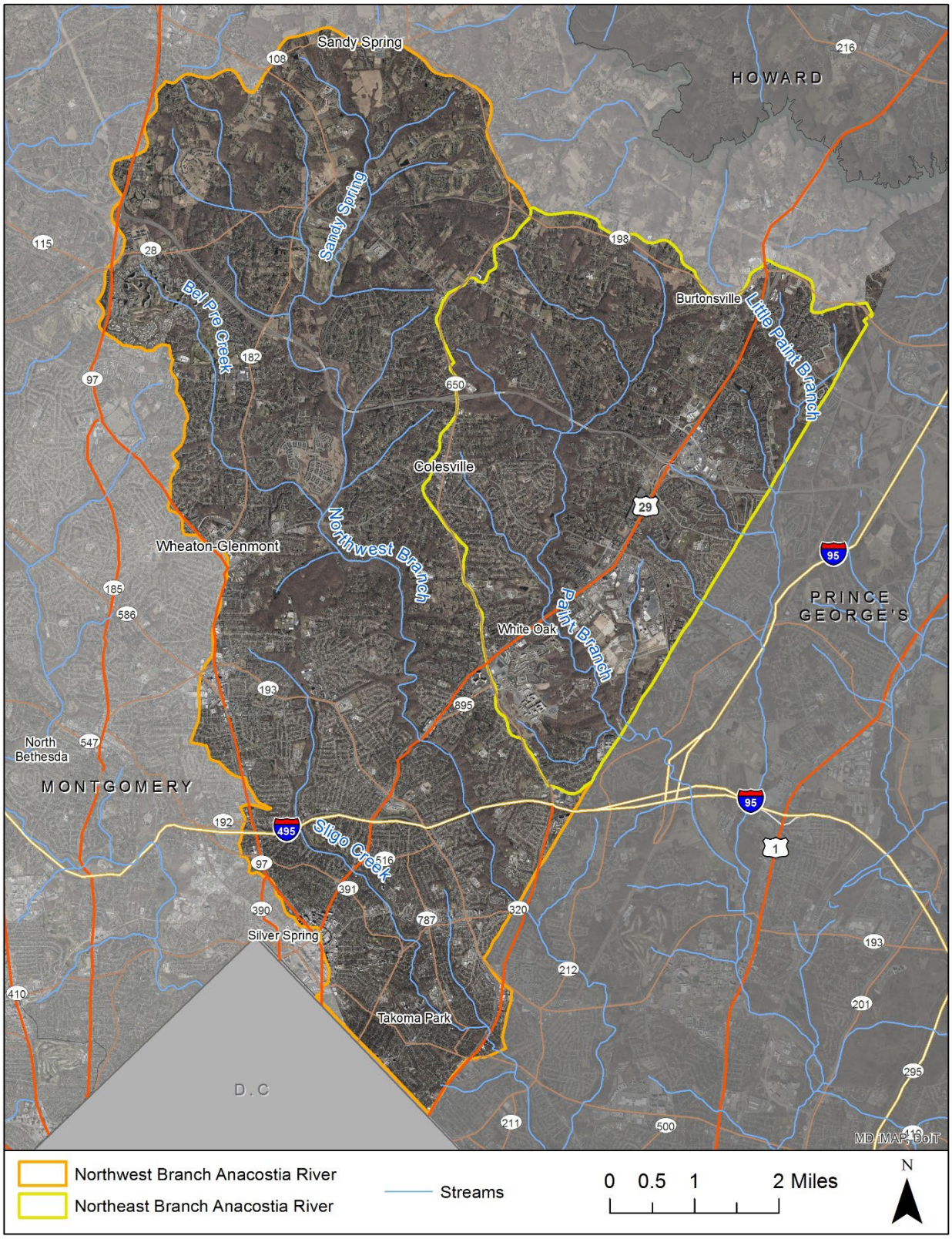

Figure 3-2: Aerial photography (2020) of the Montgomery County Portion of Anacostia River Watershed

3.1.1 BMP Implementation

Table 3-1, Table 3-2, and Table 3-3 present BMP implementation for the TN, TP, and TSS local TMDLs in the Anacostia River Northeast Branch. Table 3-4, Table 3-5, and Table 3-6 present BMP implementation for the TN, TP, and TSS local TMDLs in the Anacostia River Northwest Branch.

Planned BMPs summarized in the tables below represent what is needed to achieve the individual SW-WLA targets. A list of planned BMPs for the Anacostia River watershed is provided in Appendix A. The BMPs listed in Appendix A are associated with the level of implementation needed to achieve the TN interim targets in the Anacostia River Northeast and Northwest Branch subwatersheds. This is because the targets for the other pollutants will be met long before the TN targets can be achieved. The TN interim targets are discussed in Section 3.1.2.

Table 3-1: BMP Implementation for the Anacostia River Northeast Branch Nitrogen Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	0	0	46	546	592
	drainage acres	0.0	0.0	16.6	569.2	585.8
Bioswale	# of BMPs	0	0	4	3	7
	drainage acres	0.0	0.0	2.5	6.4	8.9
Dry Ponds	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	112.7	0.0	112.7
Extended Detention Dry Ponds	# of BMPs	0	0	3	0	3
	drainage acres	0.0	0.0	189.7	0.0	189.7
Filtering Practices	# of BMPs	0	0	5	38	43
	drainage acres	0.0	0.0	6.8	109.9	116.7
Green Roof/Rainwater Harvesting	# of BMPs	0	0	103	3	106
	drainage acres	0.0	0.0	9.1	10.5	19.6
Infiltration Practices	# of BMPs	0	0	3	0	3
	drainage acres	0	0	0.3	0.0	0.3
Permeable Pavement	# of BMPs	1	0	3	1	4
	drainage acres	0.03	0.0	0.7	0.01	0.7
Vegetated Open Channels	# of BMPs	0	0	238	0	238
	drainage acres	0.0	0.0	306.8	0.0	306.8
Wet Ponds and Wetlands	# of BMPs	0	0	1	15	16
	drainage acres	0.0	0.0	45.2	379.1	424.2
BMP Conversion	# of BMPs	0	0	12	38	50
	drainage acres	0.0	0.0	983.3	416.5	1,399.8
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	3,832.6	3,832.6	3,832.6	0.0	3,832.6

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Urban Stream Restoration	# of BMPs	0	0	6	28	34
	linear feet	0.0	0.0	19,676.6	48,930.0	68,606.6
Outfall Stabilization	# of BMPs	0	0	3	0	3
	linear feet	0.0	0.0	116	0	116.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	4,526.2	0.0	0.0	2,233.60	2,233.60
Street Sweeping[2]	miles swept	48.2	47.1	47.1	47.1	47.12
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	0	0	20	0	20
	acres converted	0.0	0.0	4.5	0.0	4.5
Forest Planting	# of BMPs	0	0	7	75	82
	acres converted	0.0	0.0	3.0	375.0	378.0
Riparian Forest Planting	# of BMPs	0	0	0	106	106
	acres converted	0.0	0.0	0.0	275.0	275.0
Urban Tree Canopy Planting	# of BMPs	129	419	883	1,265	2,148
	acres converted	1.3	4.2	8.8	12.7	21.5
Street Trees	# of BMPs	45	171	374	59	433
	acres converted	0.5	1.7	13.2	0.6	13.8
Conservation Landscaping	# of BMPs	1	0	2	1	3
	acres converted	0.0	0.03	0.0	0.002	0.03

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-2: BMP Implementation for the Anacostia River Northeast Branch Phosphorus Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	0	0	46	121	167
	drainage acres	0.0	0.0	16.6	264.9	281.5
Bioswale	# of BMPs	0	0	4	3	7
	drainage acres	0.0	0.0	2.5	6.4	8.9
Dry Ponds	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	112.7	0.0	112.7
Extended Detention Dry	# of BMPs	0	0	3	0	3
	drainage acres	0.0	0.0	189.7	0.0	189.7
Filtering Practices	# of BMPs	0	0	5	38	43
	drainage acres	0.0	0.0	6.8	109.9	116.7

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Green Roof/Rainwater Harvesting	# of BMPs	0	0	103	3	106
	drainage acres	0.0	0.0	9.1	10.5	19.6
Infiltration Practices	# of BMPs	0	0	3	0	3
	drainage acres	0	0	0.3	0.0	0.3
Permeable Pavement	# of BMPs	1	0	3	1	4
	drainage acres	0.03	0.0	0.7	0.0	0.7
Vegetated Open Channels	# of BMPs	0	0	238	0	238
	drainage acres	0.0	0.0	306.8	0.0	306.8
Wet Ponds and Wetlands	# of BMPs	0	0	1	15	16
	drainage acres	0.0	0.0	45.2	379.1	424.2
BMP Conversion	# of BMPs	0	0	12	38	50
	drainage acres	0.0	0.0	983.3	416.5	1,399.8
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	3,832.6	3,832.6	3,832.6	0	3,832.6
Urban Stream Restoration	# of BMPs	0	0	6	19	25
	linear feet	0.0	0.0	19,676.6	36,186.0	55,862.6
Outfall Stabilization	# of BMPs	0	0	3	0	3
	linear feet	0.0	0.0	116	0	116.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	4,526.2	0.0	0.0	2,233.60	2,233.60
Street Sweeping[2]	miles swept	48.2	47.1	47.1	47.1	47.12
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	0	0	20	0	20
	acres converted	0.0	0.0	4.5	0.0	4.5
Forest Planting	# of BMPs	0	0	7	45	52
	acres converted	0.0	0.0	3.0	225.0	228.0
Riparian Forest Planting	# of BMPs	0	0	0	54	54
	acres converted	0.0	0.0	0.0	135.1	135.1
Urban Tree Canopy Planting	# of BMPs	129	419	883	765	1,648
	acres converted	1.3	4.2	8.8	7.7	16.5
Street Trees	# of BMPs	45	171	374	59	433
	acres converted	0.5	1.7	13.2	0.6	13.8
Conservation Landscaping	# of BMPs	1	0	2	1	3
	acres converted	0.02	0.0	0.03	0.002	0.03

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-3: BMP Implementation for the Anacostia River Northeast Branch Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	0	0	46	121	167
	drainage acres	0.0	0.0	16.6	264.9	281.5
Bioswale	# of BMPs	0	0	4	3	7
	drainage acres	0.0	0.0	2.5	6.4	8.9
Dry Ponds	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	112.7	0.0	112.7
Extended Detention Dry Ponds	# of BMPs	0	0	3	0	3
	drainage acres	0.0	0.0	189.7	0.0	189.7
Filtering Practices	# of BMPs	0	0	5	11	16
	drainage acres	0.0	0.0	6.8	30.0	36.8
Green Roof/Rainwater Harvesting	# of BMPs	0	0	103	3	106
	drainage acres	0.0	0.0	9.1	10.5	19.6
Infiltration Practices	# of BMPs	0	0	3	0	3
	drainage acres	0	0	0.3	0.0	0.3
Permeable Pavement	# of BMPs	1	0	3	1	4
	drainage acres	0.03	0.0	0.7	0.01	0.7
Vegetated Open Channels	# of BMPs	0	0	238	0	238
	drainage acres	0.0	0.0	306.8	0.0	306.8
Wet Ponds and Wetlands	# of BMPs	0	0	1	5	6
	drainage acres	0.0	0.0	45.2	126.4	171.5
BMP Conversion	# of BMPs	0	0	12	38	50
	drainage acres	0.0	0.0	983.3	416.5	1,399.8
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	3,832.6	3,832.6	3,832.6	0	3,832.6
Urban Stream Restoration	# of BMPs	0	0	6	16	22
	linear feet	0.0	0.0	19,676.6	31,938.0	51,614.6
Outfall Stabilization	# of BMPs	0	0	3	0	3
	linear feet	0.0	0.0	116	0	116.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	4,526.2	0.0	0.0	2,233.60	2,233.60
Street Sweeping[2]	miles swept	48.2	47.1	47.1	47.1	47.12
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	0	0	20	0	20
	acres converted	0.0	0.0	4.5	0.0	4.5
Forest Planting	# of BMPs	0	0	7	32	39

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
	acres converted	0.0	0.0	3.0	160.0	163.0
Riparian Forest Planting	# of BMPs	0	0	0	31	31
	acres converted	0.0	0.0	0.0	73.3	73.3
Urban Tree Canopy Planting	# of BMPs	129	419	883	765	1,648
	acres converted	1.3	4.2	8.8	7.7	16.5
Street Trees	# of BMPs	45	171	374	59	433
	acres converted	0.5	1.7	13.2	0.6	13.8
Conservation Landscaping	# of BMPs	1	0	2	1	3
	acres converted	0.0	0.0	0.03	0.002	0.03

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-4: BMP Implementation for the Anacostia River Northwest Branch Nitrogen Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	4	6	503	1,321.0	1,824.0
	drainage acres	0.7	1.1	225.9	1,262.8	1,488.8
Bioswale	# of BMPs	0	0	13	3	16
	drainage acres	0.0	0.0	7.4	12.8	20.2
Filtering Practices	# of BMPs	0	0	0	80	80
	drainage acres	0.0	0.0	0.0	236.8	236.8
Green Roof/Rainwater Harvesting	# of BMPs	0	3	213	4	217
	drainage acres	0.0	0.02	29.1	26.1	55.1
Infiltration Practices	# of BMPs	0	0	7	0	7
	drainage acres	0.0	0.0	1.7	0.0	1.7
Permeable Pavement	# of BMPs	13	4	97	2	99
	drainage acres	0.3	0.1	25.0	4.2	29.2
Vegetated Open Channels	# of BMPs	0	0	3	0	3
	drainage acres	0.0	0.0	2.2	0.0	2.2
Wet Ponds and Wetlands	# of BMPs	0	0	3	70	73
	drainage acres	0.0	0.0	191.7	1,768.9	1,960.6
BMP Conversion	# of BMPs	0	0	8	45	53
	drainage acres	0.0	0.0	450.9	525.6	976.5
Alternative Practices						

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Urban Nutrient Management[1]	drainage acres	8,435.0	8,435.0	8,435.0	0.0	8,435.0
Urban Stream Restoration	# of BMPs	0	0	20	85	105
	linear feet	0	0	43,551.2	128,209.0	171,760.2
Outfall Stabilization	# of BMPs	0	0	11	0	11.0
	linear feet	0	0	935.0	0.0	935.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	6,897.1	4,746	4,746	5,784.8	5,784.8
Street Sweeping[2]	miles swept	76	59.2	59.2	59.2	59.2
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	3	2	38	1	39
	acres converted	0.03	0.02	9.9	0.02	9.9
Forest Planting	# of BMPs	0	0	35	150	185
	acres converted	0.0	0.0	11.2	750.0	761.2
Riparian Forest Planting	# of BMPs	0	0	0	212	212
	acres converted	0.0	0.0	0.0	580.5	580.5
Urban Tree Canopy Planting	# of BMPs	283	818	2,118	1,574	3,692
	acres converted	2.8	8.2	21.2	15.7	36.9
Street Trees	# of BMPs	376	555	1,956	309	2,265
	acres converted	3.8	5.5	31.9	3.1	34.9
Conservation Landscaping	# of BMPs	22	43	70	1	71
	acres converted	0.3	0.7	1.1	0.1	1.2

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-5: BMP Implementation for the Anacostia River Northwest Branch Phosphorus Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	4	6	503	346	849
	drainage acres	0.7	1.1	225.9	563.8	789.8
Bioswale	# of BMPs	0	0	13	3	16
	drainage acres	0.0	0.0	7.4	12.8	20.2
Filtering Practices	# of BMPs	0	0	0	35	35
	drainage acres	0.0	0.0	0.0	103.6	103.6
Green Roof/Rainwater Harvesting	# of BMPs	0	3	213	4	217
	drainage acres	0.0	0.02	29.1	26.1	55.1

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Infiltration Practices	# of BMPs	0	0	7	0	7
	drainage acres	0.0	0.0	1.7	0.0	1.7
Permeable Pavement	# of BMPs	13	4	97	2	99
	drainage acres	0.3	0.1	25.0	4.2	29.2
Vegetated Open Channels	# of BMPs	0	0	3	0	3
	drainage acres	0.0	0.0	2.2	0.0	2.2
Wet Ponds and Wetlands	# of BMPs	0	0	3	25	28
	drainage acres	0.0	0.0	191.7	631.8	823.5
BMP Conversion	# of BMPs	0	0	8	45	53
	drainage acres	0.0	0.0	450.9	525.6	976.5
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	8,435.0	8,435.0	8,435.0	0.0	8,435.0
Urban Stream Restoration	# of BMPs	0	0	20	52	72
	linear feet	0	0	43,551.2	81,481.0	125,032.2
Outfall Stabilization	# of BMPs	0	0	11	0	11
	linear feet	0	0	935.0	0.0	935.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	6,897.1	4,746	4,746	5,784.8	5,784.8
Street Sweeping[2]	miles swept	76	59.2	59.2	59.2	59.2
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	3	2	38	1	39
	acres converted	0.03	0.02	9.9	0.02	9.9
Forest Planting	# of BMPs	0	0	35	60	95
	acres converted	0.0	0.0	11.2	300.0	311.2
Riparian Forest Planting	# of BMPs	0	0	0	80	80
	acres converted	0.0	0.0	0.0	225.4	225.4
Urban Tree Canopy Planting	# of BMPs	283	818	2,118	1,574	3,692
	acres converted	2.8	8.2	21.2	15.7	36.9
Street Trees	# of BMPs	376	555	1,956	309	2,265
	acres converted	3.8	5.5	31.9	3.1	34.9
Conservation Landscaping	# of BMPs	22	43	70	1	71
	acres converted	0.3	0.7	1.1	0.1	1.2

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-6: BMP Implementation for the Anacostia River Northwest Branch Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	4	6	503	196	699
	drainage acres	0.7	1.1	225.9	452.8	678.8
Bioswale	# of BMPs	0	0	13	3	16
	drainage acres	0.0	0.0	7.4	12.8	20.2
Filtering Practices	# of BMPs	0	0	0	15	15
	drainage acres	0.0	0.0	0.0	44.4	44.4
Green Roof/Rainwater Harvesting	# of BMPs	0	3	213	4	217
	drainage acres	0.0	0.02	29.1	26.1	55.1
Infiltration Practices	# of BMPs	0	0	7	0	7
	drainage acres	0.0	0.0	1.7	0.0	1.7
Permeable Pavement	# of BMPs	13	4	97	2	99
	drainage acres	0.3	0.1	25.0	4.2	29.2
Vegetated Open Channels	# of BMPs	0	0	3	0	3
	drainage acres	0.0	0.0	2.2	0.0	2.2
Wet Ponds and Wetlands	# of BMPs	0	0	3	10	13
	drainage acres	0.0	0.0	191.7	252.7	444.4
BMP Conversion	# of BMPs	0	0	8	45	53
	drainage acres	0.0	0.0	450.9	525.6	976.5
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	8,435.0	8,435.0	8,435.0	0.0	8,435.0
Urban Stream Restoration	# of BMPs	0	0	20	42	62.0
	linear feet	0	0	43,551.2	67,321.0	110,872.2
Outfall Stabilization	# of BMPs	0	0	11	0	11.0
	linear feet	0	0	935.0	0.0	935.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	6,897.1	4,746	4,746	5,784.8	5,784.8
Street Sweeping[2]	miles swept	76	59.2	59.2	59.2	59.2
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	3	2	38	1	39
	acres converted	0.03	0.02	9.9	0.02	9.9
Forest Planting	# of BMPs	0	0	35	30	65
	acres converted	0.0	0.0	11.2	150.0	161.2
Riparian Forest Planting	# of BMPs	0	0	0	49	49
	acres converted	0.0	0.0	0.0	142.0	142.0
Urban Tree Canopy Planting	# of BMPs	283	818	2,118	1,574	3,692
	acres converted	2.8	8.2	21.2	15.7	36.9

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Street Trees	# of BMPs	376	555	1,956	309	2,265
	acres converted	3.8	5.5	31.9	3.1	34.9
Conservation Landscaping	# of BMPs	22	43	70	1	71
	acres converted	0.3	0.7	1.1	0.1	1.2

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

3.1.2 Load Reductions

Table 3-7 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for each TN, TP, and TSS local TMDL SW-WLA in the Anacostia River Northeast Branch and Northwest Branch subwatersheds.

There is a slight decrease in reductions in both Anacostia River Northeast Branch and Northwest Branch subwatersheds when comparing FY23 Cumulative Progress to FY22 Cumulative Progress. In FY23, the County expanded its street sweeping program to additional watersheds, however, this resulted in a reduction of street sweeping milage in the Anacostia River watershed. This resulted in less material removed in comparison to FY22. Similar to street sweeping, inlet/storm drain cleaning also saw a reduction in materials removed in FY23 because the cleaning had occurred outside of the Anacostia River watershed. Because street sweeping and inlet/storm drain cleaning are annual practices, if the level of implementation is not maintained each year, reductions associated with these practices can be variable.

The County's December 2022 Anacostia River Implementation Plan (2022a) presented future BMPs that achieved approximately half of the target 81% TN reduction resulting in 40.9% TN reduction in Anacostia River Northeast Branch and 40.0% TN reduction in Anacostia River Northwest Branch. This approach was used because achieving 81.0% TN reduction in both the Anacostia River Northeast and Northwest branches is not feasible due to two main factors: 1. Most BMP efficiencies for TN are below the required reduction target set at 81%; and 2. Limitations on available restoration opportunities to work within to achieve the goal. Because of data changes between the FY21 BMP data used for the 2022 implementation plan and the updated FY23 BMP data used for this Countywide Plan, the total implementation decreased to 36.1% TN reduction in Anacostia River Northeast Branch and 36.9% TN reduction in Anacostia River Northwest Branch. At this time the County has decided not to add more planned BMPs to the modeling time to achieve the 40% interim targets due to the limitations described above. New or alternative approaches will be evaluated and added to future plans.

The level of implementation needed to achieve the TN interim targets in the Anacostia River Northeast and Northwest Branch subwatersheds will exceed the target percent reductions for TP and TSS.

Table 3-7: Progress and Planned Reductions for Nutrient and Sediment Local TMDLs in the Anacostia River Watershed

	Anacostia River Northeast Branch			Anacostia River Northwest Branch		
	TN EOS lbs/yr	TP EOS lbs/yr	TSS EOS lbs/yr	TN EOS lbs/yr	TP EOS lbs/yr	TSS EOS lbs/yr
Target Reductions						
Target % Reduction	81.0%	81.2%	85.0%	81.0%	81.2%	85.0%
Target Reduction	55,425	5,870	17,968,415	114,518	11,524	33,694,304
Target Load (SW-WLA)	13,001	1,359	3,170,897	26,862	2,668	5,946,054
FY22 Annual Restoration Reductions						
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	2,153	188	47,087	4,734	410	80,402
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	3.1%	2.6%	0.2%	3.3%	2.9%	0.2%
FY22 Cumulative Progress Reductions						
FY22 Cumulative Progress Reduction through 6/30/2022	8,482	2,230	7,645,013	11,469	3,940	12,747,170
FY22 Progress % Reduction through 6/30/2022	12.4%	30.9%	36.2%	8.1%	27.8%	32.2%
FY23 Annual Restoration Reductions						
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	2,150	187	45,871	4,738	410	59,864
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	3.1%	2.6%	0.2%	3.4%	2.9%	0.2%
FY23 Cumulative Progress Reductions						
FY23 Cumulative Progress Reduction through 6/30/2023	8,179	2,162	7,450,262	11,391	3,917	12,680,395
FY23 Progress % Reduction through 6/30/2023	12.0%	29.9%	35.2%	8.1%	27.6%	32.0%
Planned Restoration Reductions						
Planned Restoration Reduction	16,542	3,709	10,527,132	40,791	7,610	21,016,840
Planned Restoration % Reduction	24.2%	51.3%	49.8%	28.9%	53.6%	53.0%
Total Implementation (Cumulative Progress + Planned Restoration)						
Total Implementation Reductions	24,721	5,871	17,977,394	52,182	11,527	33,697,235
Total Implementation % Reduction	36.1%	81.2%	85.0%	36.9%	81.2%	85.0%
Target Year	2056	2050	2038	2074	2065	2059

3.1.3 Progress Implementation Benchmark Evaluation for Northeast Branch

Table 3-8 presents FY23 progress assessments for the TN, TP, and TSS local TMDLs in the Anacostia Northeast Branch watershed. As discussed in the County's December 2022 Anacostia River Implementation Plan (2022a), the pollutant TN has been proven to be very difficult to treat with conventional/traditional stormwater BMPs and an exact date of achieving the TN target of 81% reduction for the Anacostia River Northeast Branch is not known at this time. To hit the approximate TN target year of 2070, an Interim TN target year was established where approximately half (36.1% TN reduction) will be achieved by the year 2056. Table 3-8 shows TN progress relating to the 2056 interim target year with the goal of 36.1% reduction.

Results indicate that the County so far has achieved 29.6% of the TN interim reduction goal, and 36.8% and 41.1% reduction of the goals for TP and TSS, respectively. A 28.5% reduction remains for TN to reach by the 2056 interim target year, a 51.3% reduction remains for TP to reach by its 2050 target year, and a 49.8% reduction remains for TSS to reach by the target year of 2038.

In order to reach the interim target for TN and the targets for TP and TSS, milestone goals were determined. Milestones and benchmarks are presented in Table 3-9. Milestone 1 is set for the year 2033 for TN, 2031 for TP, and 2027 for TSS. FY23 Progress results indicate that the County is over halfway to its TN Milestone 1 goal of 20.7% reduction with ten years remaining to continue BMP implementation. The County has achieved 29.9% TP reductions through FY23 leaving 13.8% reduction to treat over the next eight years to reach the Milestone 1 goal in 2031. With 35.2% TSS reductions achieved through FY23, the County will need to reduce an additional 13% over the next four years to achieve the TSS Milestone 1 in 2027.

Planned BMP implementation costs are presented in Table 3-10 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TP and TSS TMDLs and the interim target for the TN TMDL in the County's portion of the Anacostia River Northeast Branch watershed is approximately $103,640,000.

Table 3-8: Progress Assessment for the Anacostia River Northeast Branch Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Interim % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	Interim Target Year	% of Goal Achieved
Anacostia Northeast Branch	TN	81%	40.5%	12.0%	28.5%	2070	2056	29.6%
	TP	81.2%	n/a	29.9%	51.3%	2050	n/a	36.8%
	TSS	85%	n/a	35.2%	49.8%	2038	n/a	41.4%

Table 3-9: Milestones and Percent Reduction Benchmarks for the Anacostia River Northeast Branch Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TN	Milestone 1	2033	20.7%	14,193
	Milestone 2	2045	28.1%	19,266
	Interim Year	**2056**	**36.6%**	**28,009**
TP	Milestone 1	2031	43.7%	3,166
	Milestone 2	2041	60.1%	4,348
	Target Year	**2050**	**81.2%**	**5,904**
TSS	Milestone 1	2027	48.2%	10,269,777
	Milestone 2	2033	64.6%	13,762,853
	Target Year	**2038**	**85.0%**	**18,154,825**

Table 3-10: Planned Restoration Cost by Project Type for the Anacostia River Northeast Branch Watershed

Project Type	Planned Cost
BMP Conversion	$9,960,000
New BMP	$58,310,000
Stream Restoration	$27,430,000
Tree Planting	$7,910,000
Impervious Surface Reduction	$30,000
Total	**$103,640,000**

3.1.4 Progress Implementation Benchmark Evaluation for Northwest Branch

Table 3-11 presents FY23 progress assessments for the TN, TP, and TSS local TMDLs in the Anacostia Northwest Branch watershed. As discussed in the County's December 2022 Anacostia River Implementation Plan (2022a), and Section 3.1.3 above regarding Anacostia Northeast Branch, the pollutant TN has been proven to be very difficult to treat and to hit the approximate TN target year of 2085, an Interim TN target year was established where approximately half (36.9% TN reduction) will be achieved by the year 2074. Table 3-11 shows TN progress relating to the 2074 interim target year with the goal of 36.9% reduction.

Results indicate the County so far has achieved 8.1% of the TN interim reduction goal, and 27.6% and 32% reduction of the goals for TP and TSS, respectively. A 32.4% reduction remains for TN to reach the 2056 interim target year, a 53.6% reduction remains for TP to reach its 2065 target year, and a 53% reduction remains for TSS to reach the target year of 2059.

In order to reach the interim target year for TN and the target years for TP and TSS, milestone goals were determined. Milestones and benchmarks are presented in Table 3-12. Milestone 1 is set for the year 2039 for TN, 2036 for TP, and 2034 for TSS. FY23 progress results indicate that the County is projected to reach TN's Milestone 1 goal of 14% reduction with 16 more years remaining to continue BMP implementation. The County has achieved 27.6% TP reductions through FY23 leaving 13.7% reduction to treat over the next 13 years to reach the Milestone 1 goal in 2036. With 32.0% TSS reductions achieved through FY23, the County will need to reduce an additional 12.9% over the next 11 years to achieve the TSS Milestone 1 in 2034.

Planned BMP implementation costs are presented in Table 3-13 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TP and TSS TMDLs and the interim target for the TN TMDL in the County's portion of the Anacostia River Northwest Branch watershed is approximately $227,450,000.

Table 3-11: Progress Assessment for the Anacostia Northwest Branch Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Interim % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	Interim Target Year	% of Goal Achieved
Anacostia Northwest Branch	TN	81%	40.5%	8.1%	32.4%	2085	2074	0.2%
	TP	81.2%	n/a	27.6%	53.6%	2065	n/a	34.0%
	TSS	85%	n/a	32%	53%	2059	n/a	37.6%

Table 3-12: Milestones and Percent Reduction Benchmarks for the Anacostia Northwest Branch Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TN	Milestone 1	2039	14.0%	19,419
	Milestone 2	2057	21.7%	30,073
	Interim Year	**2074**	**37.1%**	**55,321**
TP	Milestone 1	2036	41.3%	5,534
	Milestone 2	2051	55.3%	7,417
	Target Year	**2065**	**81.2%**	**10,905**
TSS	Milestone 1	2034	44.9%	16,613,102
	Milestone 2	2047	63.2%	23,398,672
	Target Year	**2059**	**85.0%**	**31,485,892**

Table 3-13: Planned Restoration Cost by Project Type for the Anacostia Northwest Branch Watershed

Project Type	Planned Cost
BMP Conversion	$11,210,000
New BMP	$137,700,000
Stream Restoration	$62,400,000
Tree Planting	$16,080,000
Impervious Surface Reduction	$30,000
Conservation Landscaping	$30,000
Total	**$227,450,000**

3.2 Cabin John Creek

The Cabin John Creek watershed is located in the southern portion of Montgomery County (Figure 3-3). The watershed flows south where it drains to the Potomac River, which ultimately leads to the Chesapeake Bay. The watershed is entirely contained within Montgomery County. The Cabin John Creek watershed is approximately 16,423 acres (25.7 square miles) in area and contains approximately 38.8 total miles of streams based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The watershed includes several named streams, including Buck Branch, Old Farm Creek, and Booze Creek, among others (Figure 3-4).

Montgomery County is responsible for one TSS TMDL and one bacteria TMDL within the Cabin John Creek watershed. BMP implementation and progress for the TSS TMDL is addressed in the following section. Bacteria progress is outlined in Section 5 of this plan.

Figure 3-3: Location of Cabin John Creek Watershed

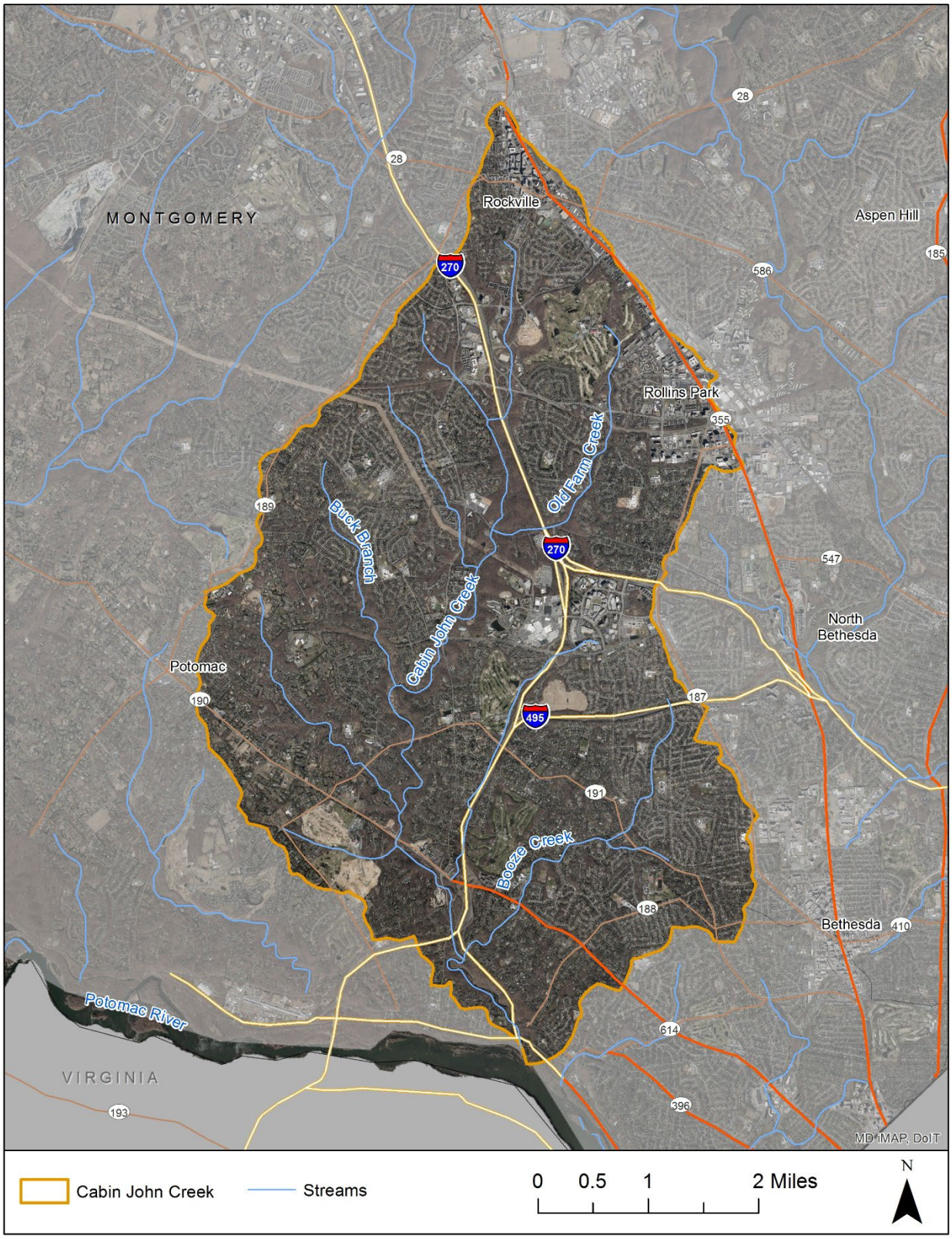

Figure 3-4: Aerial photography (2020) of the Montgomery County Portion of Cabin John Creek Watershed

3.2.1 BMP Implementation

Table 3-14 below presents BMP implementation for the TSS local TMDL in the Cabin John Creek watershed.

Planned BMPs summarized in the table below represents what is needed to achieve the SW-WLA target. A list of planned BMPs for the Cabin John Creek watershed is provided in Appendix A.

Table 3-14: BMP Implementation for the Cabin John Creek Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	0	2	94	123	217
	drainage acres	0.0	0.3	24.3	187.4	211.7
Bioswale	# of BMPs	0	0	0	1	1
	drainage acres	0.0	0.0	0.0	2.9	2.9
Filtering Practices	# of BMPs	0	0	1	11	12
	drainage acres	0.0	0.0	0.7	74.6	75.3
Green Roof/Rainwater Harvesting	# of BMPs	1	14	71	1	72
	drainage acres	0.004	0.1	3.5	0.0	3.5
Infiltration Practices	# of BMPs	0	0	15	0	15
	drainage acres	0.0	0.0	11.2	0.0	11.2
Permeable Pavement	# of BMPs	1	3	21	1	22
	drainage acres	0.0	0.1	2.4	0.02	2.4
Wet Ponds and Wetlands	# of BMPs	0	0	0	7	7
	drainage acres	0.0	0.0	0.0	176.9	176.9
BMP Conversion	# of BMPs	0	0	2	21	23
	drainage acres	0.0	0.0	204.6	538.5	743.1
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	2,172.7	5,796.0	5,796.0	0.0	5,796.0
Urban Stream Restoration	# of BMPs	0	0	2	12	14
	linear feet	0.0	0	3,975.0	10,632.8	14,607.8
Outfall Stabilization	# of BMPs	0	1	6	0	6
	linear feet	0	169	703.0	0.0	703.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	6,058.8	17,404.0	17,404.0	11,698.3	2,9102.3
Street Sweeping[2]	miles swept	0.0	34.9	34.9	34.9	69.8
Land Cover Conversion						
Impervious Surface	# of BMPs	0	2	4	2	6
	acres	0.0	0.1	0.1	0.02	0.2
Forest Planting	# of BMPs	0	0	0	30	30

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
	acres	0.0	0.0	0.0	150.0	150.0
Riparian Forest Planting	# of BMPs	0	0	0	30	30
	acres	0.0	0.0	0.0	80.7	80.7
Urban Tree Canopy Planting	# of BMPs	199	210	1,020	1,242	2,262
	acres	2.0	2.1	10.2	12.4	22.6
Street Trees	# of BMPs	213	180	901	143	1,044
	acres	2.1	1.8	30.8	1.4	32.2
Conservation Landscaping	# of BMPs	20	10	34	1	35
	acres	0.2	0.2	0.5	0.03	0.5

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

3.2.2 Load Reductions

Table 3-15 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for TSS local TMDL SW-WLA in the Cabin John Creek watershed.

Results indicate the TSS reduction target of 22.7% will be achieved by 2032.

Table 3-15: Progress and Planned Reductions for the Sediment Local TMDL in the Cabin John Creek Watershed

	Cabin John Creek TSS EOS lbs/yr
Target Reductions	
Target % Reduction	22.7%
Target Reduction	6,260,939
Target Load (SW-WLA)	21,320,291
FY22 Annual Restoration Reductions	
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	2,492
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	0.01%
FY22 Cumulative Progress Reductions	
FY22 Cumulative Progress Reduction through 6/30/2022	1,235,727
FY22 Progress % Reduction through 6/30/2022	4.5%
FY23 Annual Restoration Reductions	
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	53,490
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	0.19%
FY23 Cumulative Progress Reductions	
FY23 Cumulative Progress Reduction through 6/30/2023	1,288,005
FY23 Progress % Reduction through 6/30/2023	4.7%
Planned Restoration Reductions	
Planned Restoration Reduction	4,976,388
Planned Restoration % Reduction	18.0%
Total Implementation (Cumulative Progress + Planned Restoration)	
Total Implementation Reductions	6,264,393
Total Implementation % Reduction	22.7%
Target Year	2032

3.2.3 Progress Implementation Benchmark Evaluation

Table 3-16 presents FY23 progress assessments for the TSS local TMDL in the Cabin John Creek watershed. The County has achieved 20.7% of the TSS goal and an 18% reduction remains to reach the 2032 target year.

In order to reach the target year of 2032, milestone goals were set in the County's December 2022 Cabin John Creek TMDL Implementation Plan (2022b). Milestones and reduction goals are presented in Table 3-17. FY23 progress results indicate that the County has achieved 4.7% through FY23, leaving a 3.3% reduction to treat over the next three years to reach the Milestone 1 goal of 8% in 2026.

Planned BMP implementation costs are presented in Table 3-18 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TSS TMDL in the County's portion of the Cabin John Creek watershed is approximately $37,712,000.

Table 3-16: Progress Assessment for the Cabin John Creek Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Cabin John Creek	TSS	22.7%	4.7%	18%	2032	20.7%

Table 3-17: Milestones and Percent Reduction Benchmarks for the Cabin John Creek Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TSS	Milestone 1	2026	8.0%	2,153,213
	Milestone 2	2029	15.4%	4,204,306
	Target Year	**2032**	**22.7%**	**6,190,003**

Table 3-18: Planned Restoration Cost by Project Type for the Cabin John Creek Watershed

Project Type	Planned Cost
BMP Conversion	$8,510,000
New BMP	$17,540,000
Stream Restoration	$8,540,000
Tree Planting	$3,110,000
Impervious Surface Reduction	$2,000
Conservation Landscape	$10,000
Total	**$37,712,000**

3.3 Lower Monocacy River

The Lower Monocacy River watershed is located in the northern portion of Montgomery County (Figure 3-5). The watershed flows north through Montgomery County into Frederick County, then into the Potomac River Frederick County watershed where it drains to the Potomac River, which ultimately leads to the Chesapeake Bay. The Montgomery County portion of the Lower Monocacy River watershed is approximately 20,085 acres (31.4 square miles) in area and contains approximately 77.9 total miles of streams, based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The watershed includes several named streams, including Bennett Creek and Little Bennett Creek (Figure 3-6).

Montgomery County is responsible for a TP and TSS TMDL within the Lower Monocacy River watershed, as well as a bacteria TMDL. BMP implementation and progress for the TP and TSS TMDLs is addressed in the following section. Bacteria progress is outlined in Section 5 of this plan.

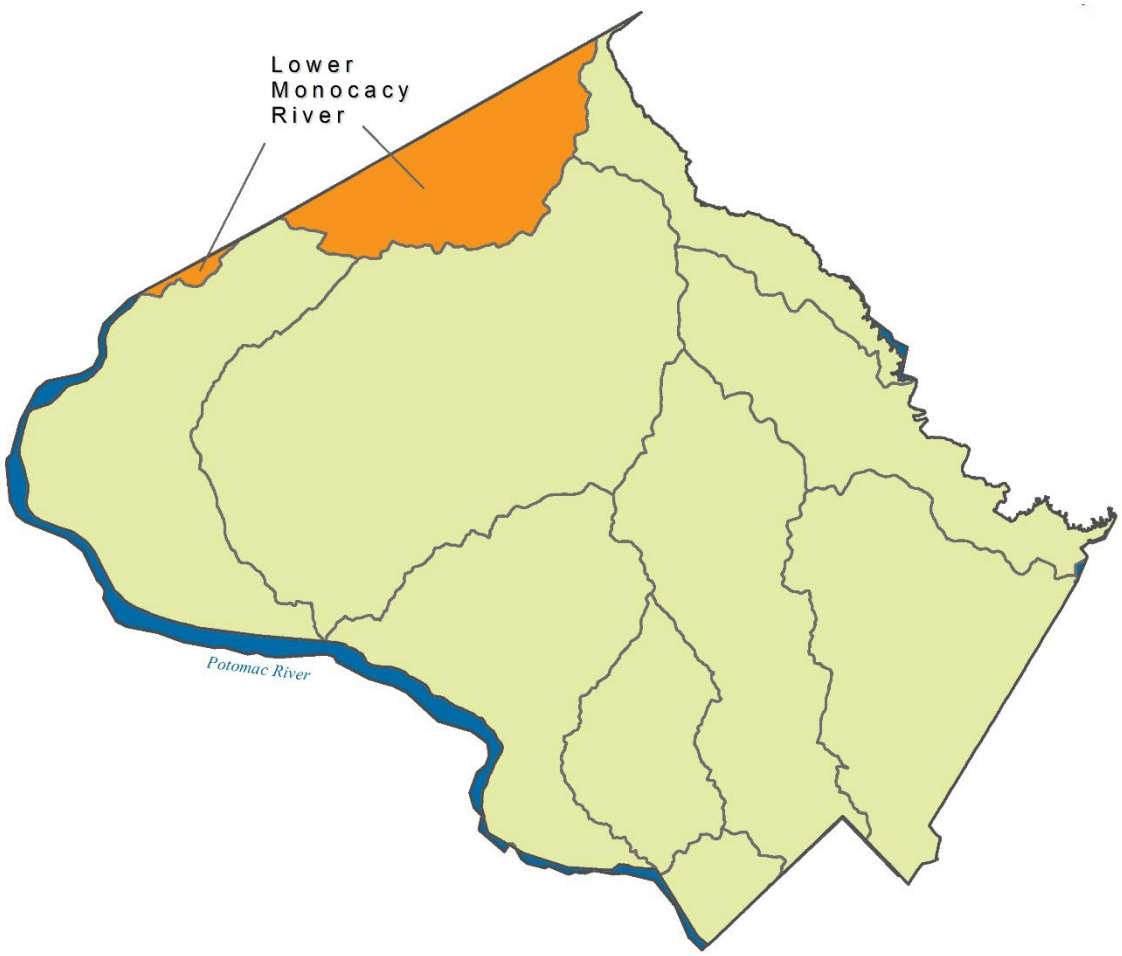

Figure 3-5: Location of Lower Monocacy River Watershed

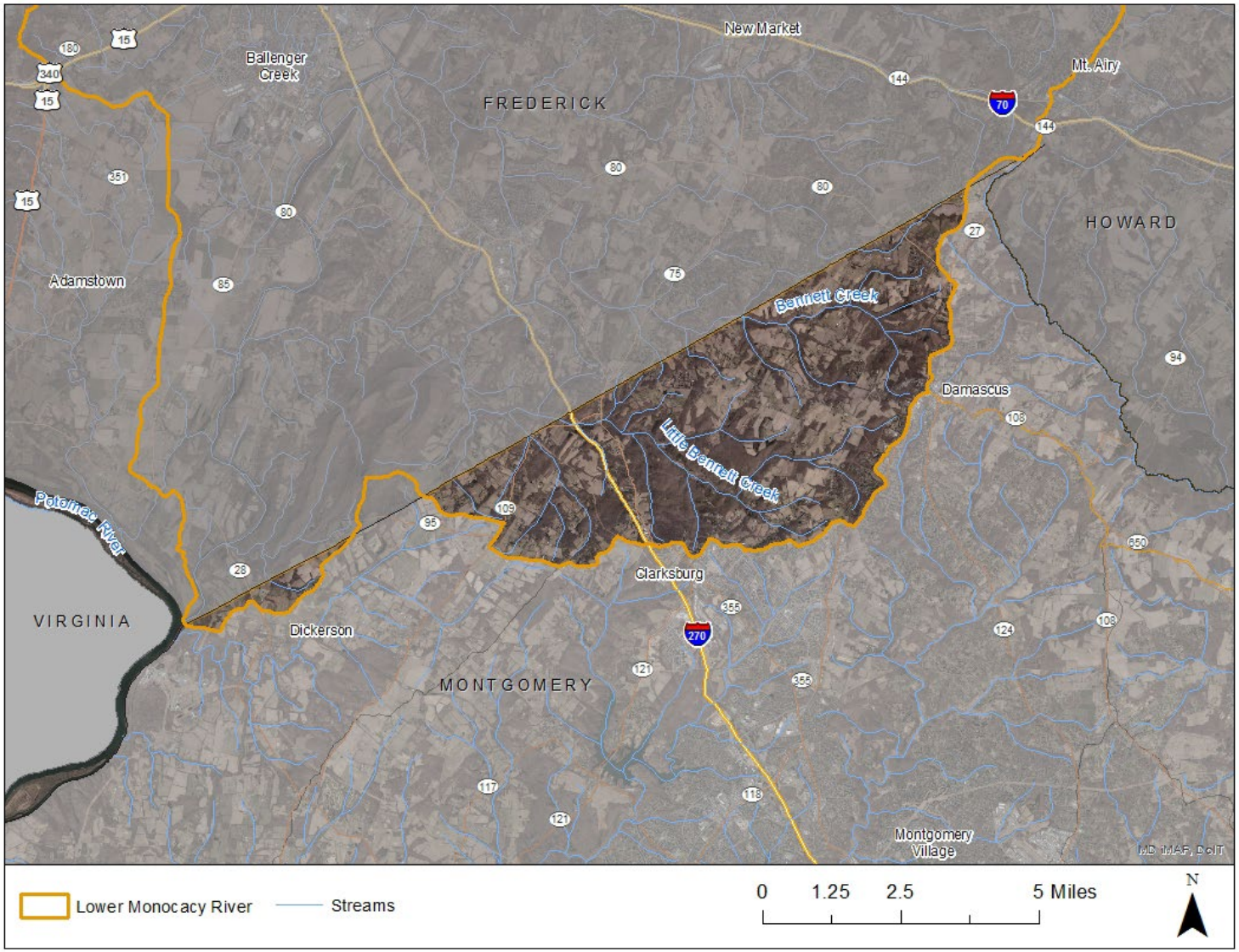

Figure 3-6: Aerial photography (2020) of the Montgomery County Portion of Lower Monocacy River Watershed

3.3.1 BMP Implementation

Table 3-19 and Table 3-20 present BMP implementation for the TP and TSS local TMDLs in the Lower Monocacy River watershed, respectively.

Planned BMPs summarized in the tables below represent what is needed to achieve individual SW-WLA targets. A list of planned BMPs for the Lower Monocacy River watershed is provided in Appendix A. The BMPs listed in Appendix A are associated with the level of implementation needed to achieve the TSS target; less BMP implementation is needed to achieve the TP target, as shown in the Planned column of Table 3-19.

Table 3-19: BMP Implementation for the Lower Monocacy River Phosphorus Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	1	0	3	41	44
	drainage acres	11.9	0.0	12.5	29.2	41.7
Filtering Practices	# of BMPs	0	0	0	6	6
	drainage acres	0.0	0.0	0.0	17.8	17.8
Green Roof/Rainwater Harvesting	# of BMPs	0	0	10	0	10
	drainage acres	0.0	0.0	3.6	0.0	3.6
Wet Ponds and Wetlands	# of BMPs	0	0	0	8	8
	drainage acres	0.0	0.0	0.0	202.2	202.2
BMP Conversion	# of BMPs	0	0	0	5	5
	drainage acres	0.0	0.0	0.0	711.5	711.5
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	2,875.3	2,875.3	2,875.3	0.0	2,875.3
Urban Stream Restoration	# of BMPs	0	0	0	2	2
	linear feet	0.0	0.0	0.0	2,832.0	2,832.0
Land Cover Conversion						
Forest Planting	# of BMPs	0	0	0	21	21
	acres converted	0.0	0.0	0.0	105.0	105.0
Riparian Forest Planting	# of BMPs	0	0	0	35	35
	acres converted	0.0	0.0	0.0	94.2	94.2
Urban Tree Canopy Planting	# of BMPs	0	59	113	238	351
	acres converted	0.0	0.6	1.1	2.4	3.5
Street Trees	# of BMPs	1	1	12	2	14
	acres converted	0.01	0.0	0.1	0.02	0.1

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).

Table 3-20: BMP Implementation for the Lower Monocacy River Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	1	0	3	206	209
	drainage acres	11.9	0.0	12.5	150.8	163.3
Filtering Practices	# of BMPs	0	0	0	8	8
	drainage acres	0.0	0.0	0.0	23.7	23.7
Green Roof/Rainwater Harvesting	# of BMPs	0	0	14	0	14
	drainage acres	0.0	0.0	4.0	0.0	4.0
Wet Ponds and Wetlands	# of BMPs	0	0	0	17	17
	drainage acres	0.0	0.0	0.0	429.6	429.6
BMP Conversion	# of BMPs	0	0	0	7	7
	drainage acres	0.0	0.0	0.0	996.0	996.0
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	2,875.3	2,875.3	2,875.3	0.0	2,875.3
Urban Stream Restoration	# of BMPs	0	0	0	6	6
	linear feet	0.0	0.0	0.0	8,496.0	8,496.0
Land Cover Conversion						
Forest Planting	# of BMPs	0	0	0	25	25
	acres converted	0.0	0.0	0.0	125.0	125.0
Riparian Forest Planting	# of BMPs	0	0	0	40	40
	acres converted	0.0	0.0	0.0	107.6	107.6
Urban Tree Canopy Planting	# of BMPs	0	59	113	1,038.0	1,151.0
	acres converted	0.0	0.6	1.1	10.4	11.5
Street Trees	# of BMPs	1	1	12	2	14
	acres converted	0.01	0.0	0.1	0.02	0.1

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).

3.3.2 Load Reductions

Table 3-21 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for TSS local TMDL SW-WLA in the Lower Monocacy River watershed.

Results indicate the TP reduction target of 30.1% will be achieved first by 2033 and the TSS reduction target of 60.7% will be achieved by 2036. The level of implementation needed to achieve the TSS target

exceeds the target % reduction for TP. By achieving the TSS target, the TP % reduction is projected to be 52.9% by 2036.

Table 3-21: Progress and Planned Reductions for the Phosphorus and Sediment Local TMDLs in the Lower Monocacy River Watershed

	Lower Monocacy River	
	TP EOS lbs/yr	TSS EOS lbs/yr
Target Reductions		
Target % Reduction	30.0%	60.7%
Target Reduction	1,267	9,465,107
Target Load (SW-WLA)	2,955	6,128,150
FY22 Annual Restoration Reductions		
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	140	38,153
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	3.3%	0.24%
FY22 Cumulative Progress Reductions		
FY22 Cumulative Progress Reduction through 6/30/2022	144	51,608
FY22 Progress % Reduction through 6/30/2022	3.4%	0.3%
FY23 Annual Restoration Reductions		
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	129	92
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	3.1%	0.001%
FY23 Cumulative Progress Reductions		
FY23 Cumulative Progress Reduction through 6/30/2023	144	51,701
FY23 Progress % Reduction through 6/30/2023	3.4%	0.3%
Planned Restoration Reductions		
Planned Restoration Reduction	1,126	9,420,918
Planned Restoration % Reduction	26.7%	60.6%
Total Implementation (Cumulative Progress + Planned Restoration)		
Total Implementation Reductions	1,270	9,472,619
Total Implementation % Reduction	30.1%	60.7%
Target Year	2033	2036

3.3.3 Progress Implementation Benchmark Evaluation

Table 3-22 presents FY23 progress assessments for the TP and TSS local TMDLs in the Lower Monocacy River watershed. The County has achieved 11.3% and 0.005% of the TP and TSS goals, respectively. A 26.6% reduction remains for TP to reach the 2033 target year and a 60.4% reduction remains for TSS to reach the target year of 2036.

In order to reach the target year of 2033 for TP and 2036 for TSS, milestone goals were set in the County's December 2022 Lower Monocacy River Watershed TMDL Implementation Plan (2022c). Milestones and reduction goals are presented in Table 3-23. Milestone 1 is set for the year 2026 for TP and 2027 for TSS. FY23 progress results indicate that the County is projected to reach TP's Milestone 1 goal of 7.3% reduction with three more years remaining to continue BMP implementation. The County has achieved 0.3% TSS reductions through FY23 leaving 3.3% reduction to treat over the next five years to reach the Milestone 1 goal in 2027.

Planned BMP implementation costs are presented in Table 3-24 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for TP TMDL in the County's portion of the Lower Monocacy River watershed is approximately $13,770,000. Since the TSS pollutant is harder to treat, the cost to implement the additional BMPs needed to achieve the target TSS reductions would be $14,630,000, for a total cost of $28,400,000 to achieve both TSS and TP target reductions by their respective target years.

Table 3-22: Progress Assessment for the Lower Monocacy River Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Lower Monocacy River	TP	30%	3.4%	26.6%	2033	11.3%
	TSS	60.7%	0.3%	60.4%	2036	0.005%

Table 3-23: Milestones and Percent Reduction Benchmarks for the Lower Monocacy River Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TP	Milestone 1	2026	7.3%	125
	Milestone 2	2029	11.2%	484
	Target Year	**2033**	**30.0%**	**1,283**
TSS	Milestone 1	2027	3.6%	572,478
	Milestone 2	2031	26.3%	4,175,926
	Target Year	**2036**	**60.7%**	**9,629,169**

Table 3-24 Planned Restoration Cost by Project Type for the Lower Monocacy River Watershed

Project Type	Planned Cost
BMP Conversion	$8,250,000
New BMP	$13,240,000
Stream Restoration	$3,980,000
Tree Planting	$2,930,000
Total	**$28,400,000**

3.4 Potomac River Montgomery County

The Potomac River Montgomery County watershed is located in the southern and western portion of Montgomery County (Figure 3-7). The streams in the watershed drain directly into the Potomac River, which runs along the southern and western extent of the County, and ultimately drains to the Chesapeake Bay. The watershed is entirely contained within Montgomery County. The Potomac River Montgomery County watershed is approximately 79,787 acres (124.7 square miles) in area and contains approximately 331.5 total miles of streams, based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The watershed includes several named streams, including Broad Run, Horsepen Branch, Muddy Branch, Watts Branch, Rock Run, and Little Falls Branch (Figure 3-8).

Montgomery County is responsible for one TSS TMDL within the Potomac River Montgomery County watershed. BMP implementation and progress for this TMDL is addressed in the following section.

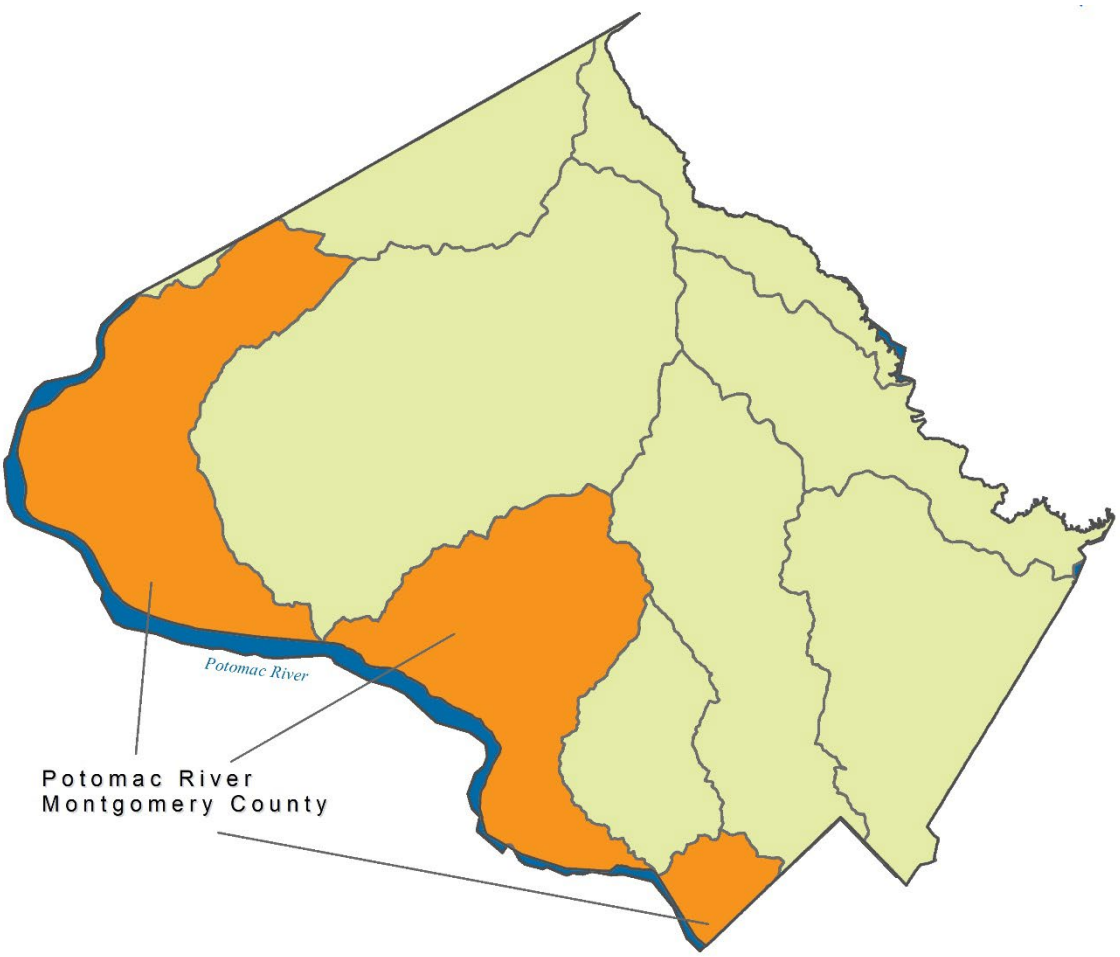

Figure 3-7:Location of Potomac River Montgomery County Watershed

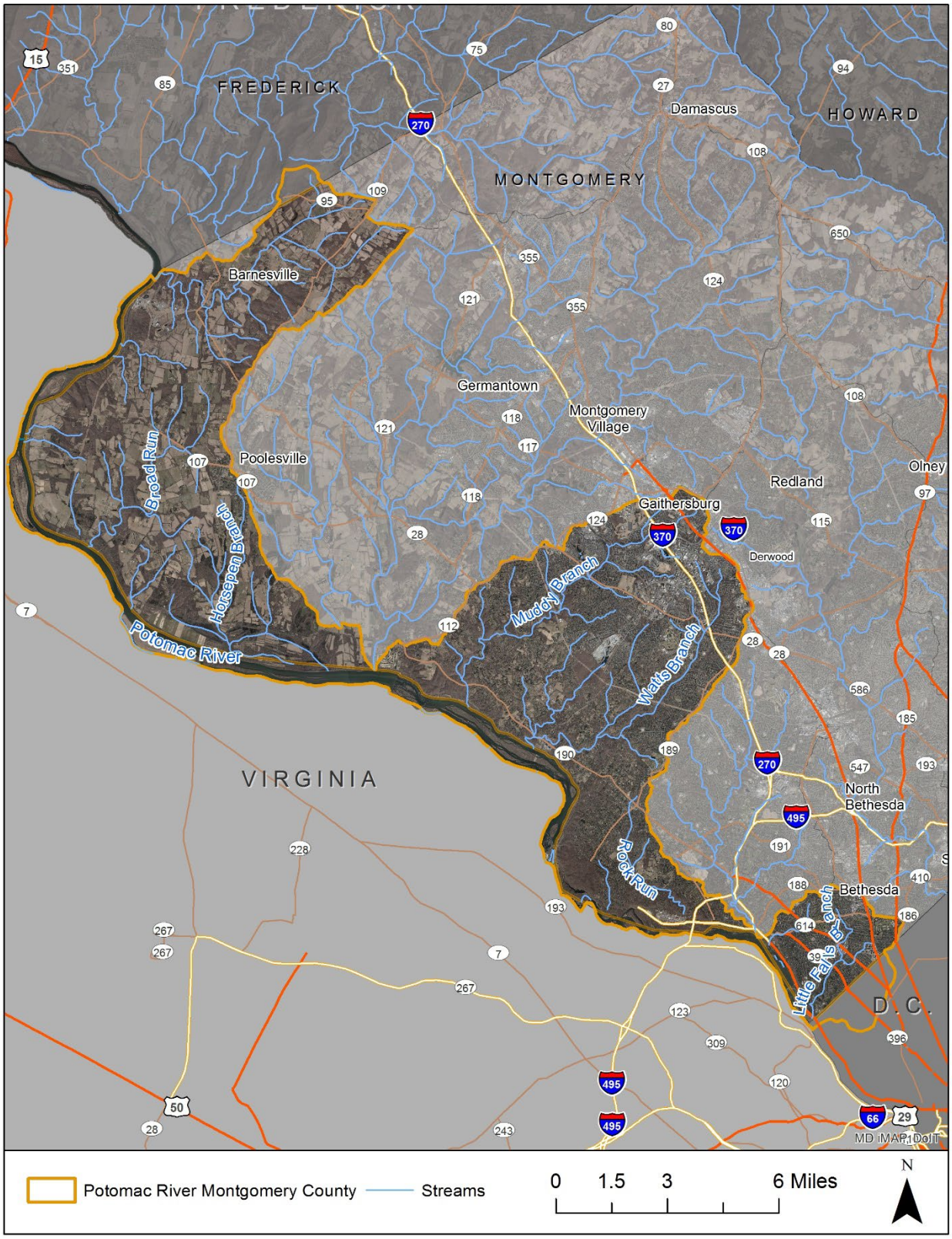

Figure 3-8: Aerial photography (2020) of the Montgomery County Portion of Potomac River Montgomery County Watershed

3.4.1 BMP Implementation

Table 3-25 below presents BMP implementation for the TSS local TMDL in the Potomac River Montgomery County watershed.

Planned BMPs summarized in the tables below represent what is needed to achieve the SW-WLA target. A list of planned BMPs for the Potomac River Montgomery County watershed is provided in Appendix A.

Table 3-25: BMP Implementation for the Potomac River Montgomery County Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	4	4	112	165	277
	drainage acres	0.02	0.2	28.1	128.9	157.0
Bioswale	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	21.1	0.0	21.1
Filtering Practices	# of BMPs	0	0	0	30	30
	drainage acres	0.0	0.0	0.0	88.8	88.8
Green Roof/Rainwater Harvesting	# of BMPs	9	20	148	3	151
	drainage acres	0.1	0.2	29.1	0.2	29.3
Infiltration Practices	# of BMPs	0	0	15	0	15
	drainage acres	0.0	0.0	1.8	0.0	1.8
Permeable Pavement	# of BMPs	6	9	46	2	48
	drainage acres	0.1	0.5	5.2	0.1	5.3
Wet Ponds and Wetlands	# of BMPs	0	0	0	15	15
	drainage acres	0.0	0.0	0.0	379.1	379.1
BMP Conversion	# of BMPs	0	0	14	36	50
	drainage acres	0.0	0.0	1338.9	1,687.1	3,026.1
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	18,112.1	18,112.1	18,112.1	0.0	18,112.1
Urban Stream Restoration	# of BMPs	0	0	10	36	46.0
	linear feet	0.0	0.0	31506.0	58,480.0	89,986.0
Outfall Stabilization	# of BMPs	0	1	4	1	5.0
	linear feet	0.0	195.0	550.0	300.0	850.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	4,319.0	19,868.0	19,868.0	12,124.4	31,992.4
Street Sweeping[2]	miles swept	0	0	0	30.7	30.7
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	0	0	8	2	10
	acres converted	0.0	0.0	0.2	0.02	0.2
Forest Planting	# of BMPs	0	0	1	160	161

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
	acres converted	0.0	0.0	0.2	800.0	800.2
Riparian Forest Planting	# of BMPs	0	0	0	200	200
	acres converted	0.0	0.0	0.0	538.0	538.0
Urban Tree Canopy Planting	# of BMPs	165	366	1354	1,308	2,662
	acres converted	1.7	3.7	13.5	13.1	26.6
Street Trees	# of BMPs	232	296	1098	174	1,272
	acres converted	2.3	3.0	11.0	1.7	12.7
Conservation Landscaping	# of BMPs	11	15	34	3	37
	acres converted	0.3	0.4	0.9	0.04	0.9

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

3.4.2 Load Reductions

Table 3-26 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for TSS local TMDL SW-WLA in the Potomac River Montgomery County watershed.

Results indicate the TSS% reduction target of 36.2% will be achieved by 2045.

Table 3-26: Progress and Planned Reductions for the Sediment Local TMDL in the Potomac River Montgomery County Watershed

	Potomac River Montgomery County TSS EOS lbs/yr
Target Reductions	
Target % Reduction	36.2%
Target Reduction	27,403,126
Target Load (SW-WLA)	48,296,117
FY22 Annual Restoration Reductions	
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	3,888
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	0.01%
FY22 Cumulative Progress Reductions	
FY22 Cumulative Progress Reduction through 6/30/2022	5,409,397
FY22 Progress % Reduction through 6/30/2022	7.1%
FY23 Annual Restoration Reductions	
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	48,502
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	0.06%
FY23 Cumulative Progress Reductions	
FY23 Cumulative Progress Reduction through 6/30/2023	5,457,036
FY23 Progress % Reduction through 6/30/2023	7.2%
Planned Restoration Reductions	
Planned Restoration Reduction	21,951,976
Planned Restoration % Reduction	29.0%
Total Implementation (Cumulative Progress + Planned Restoration)	
Total Implementation Reductions	27,409,012
Total Implementation % Reduction	36.2%
Target Year	2045

3.4.3 Progress Implementation Benchmark Evaluation

Table 3-27 presents FY23 progress assessments for the TSS local TMDL in the Potomac River Montgomery County watershed. The County has achieved 19.9% of the total TSS goal and a 29% reduction remains to reach the 2045 target year.

In order to reach the target year of 2045, milestone goals were set in the County's December 2022 Potomac River Montgomery County TMDL Implementation Plan (2022d). Milestones and reduction goals are presented in Table 3-28. FY 23 results indicate that the County has achieved 7.2% reduction through FY23, leaving 10.4% reduction to treat over the next seven years to reach the Milestone 1 goal of 17.6% in 2030.

Planned BMP implementation costs are presented in Table 3-29 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TSS TMDL in the County's portion of the Potomac River Montgomery County watershed by the target year is approximately $84,310,000.

Table 3-27: Progress Assessment for the Potomac River Montgomery County Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Potomac River MO County	TSS	36.2%	7.2%	29%	2045	19.9%

Table 3-28: Milestones and Percent Reduction Benchmarks for the Potomac River Montgomery County Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TSS	Milestone 1	2030	17.6%	13,355,478
	Milestone 2	2037	19.7%	15,006,002
	Target Year	**2045**	**36.2%**	**27,547,431**

Table 3-29: Planned Restoration Cost by Project Type for the Potomac River Montgomery County Watershed

Project Type	Planned Cost
BMP Conversion	$20,200,000
New BMP	$15,410,000
Stream Restoration	$32,190,000
Tree Planting	$16,460,000
Impervious Surface Reduction	$20,000
Conservation Landscaping	$30,000
Total	**$84,310,000**

3.5 Rock Creek

The Rock Creek watershed is located in the south-central portion of Montgomery County (Figure 3-9). The watershed flows south through Montgomery County into D.C., where it drains to the Potomac River, which ultimately leads to the Chesapeake Bay. The Montgomery County portion of the Rock Creek watershed is approximately 39,285 acres (61.4 square miles) in area and contains approximately 134.7 total miles of streams, based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The named streams within the watershed are North Branch Rock Creek and the mainstem Rock Creek (Figure 3-10).

Montgomery County is responsible for three TMDLs within the Rock Creek watershed, including a TP, TSS, and bacteria TMDL. BMP implementation and progress for the TP and TSS TMDLs is addressed in the following section. Bacteria progress is outlined in Section 5 of this plan.

Figure 3-9: Location of Rock Creek Watershed

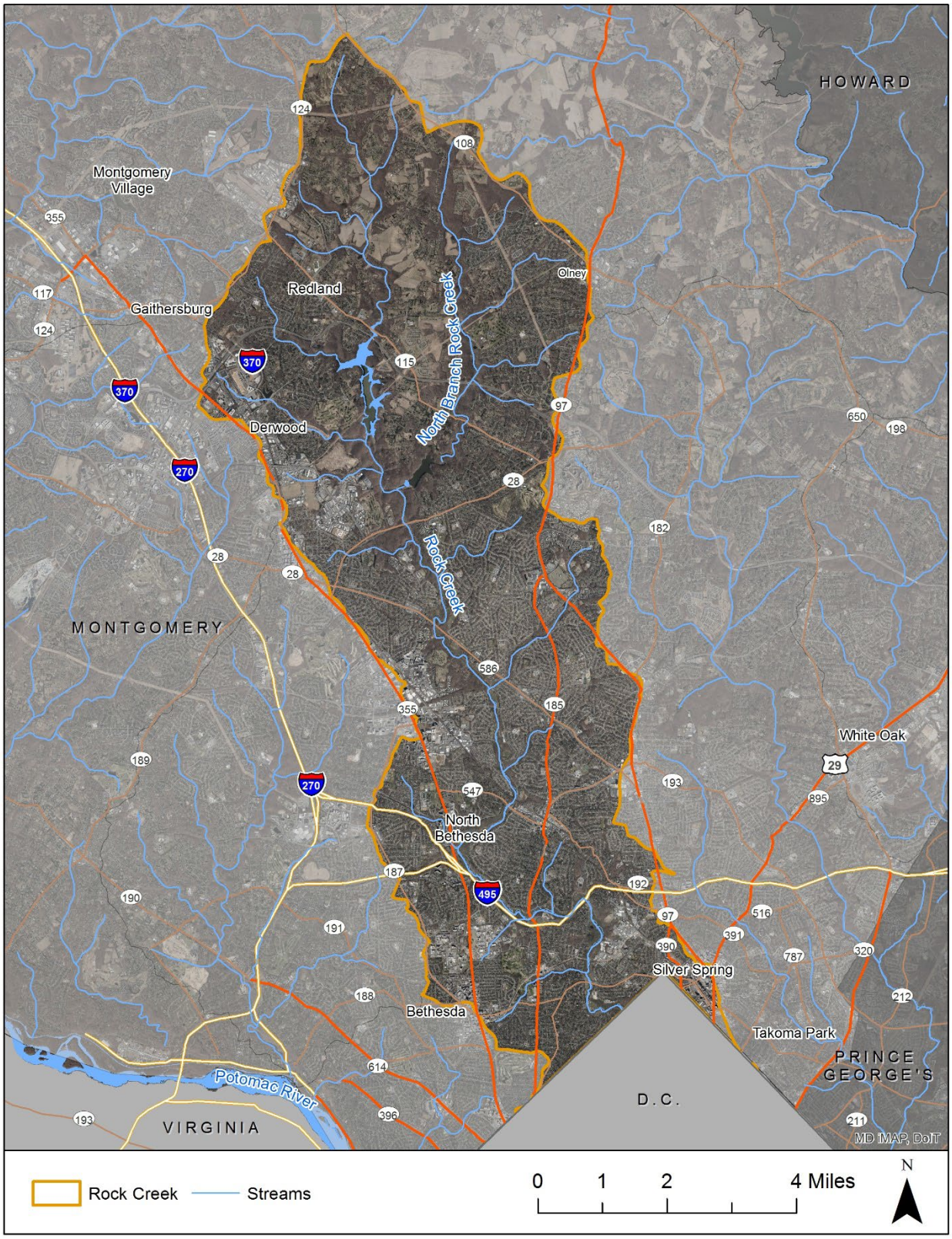

Figure 3-10: Aerial photography (2020) of the Montgomery County Portion of Rock Creek Watershed

3.5.1 BMP Implementation

Table 3-30 and Table 3-31 present BMP implementation for the TP and TSS local TMDLs in the Rock Creek, respectively.

Planned BMPs summarized in the tables below represent what is needed to achieve individual SW-WLA targets. A list of planned BMPs for the Rock Creek watershed is provided in Appendix A. The BMPs listed in Appendix A are associated with the level of implementation needed to achieve the TP target; less BMP implementation is needed to achieve the TSS target, as shown in the Planned column of Table 3-31.

Table 3-30: BMP Implementation for the Rock Creek Phosphorus Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	11	58	292	252	544
	drainage acres	1.3	46.2	134.5	302.3	436.8
Bioswale	# of BMPs	0	0	4	8	12
	drainage acres	0.0	0.0	4.5	8.8	13.4
Extended Detention Dry	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	237.4	0.0	237.4
Filtering Practices	# of BMPs	0	0	0	24	24
	drainage acres	0.0	0.0	0.0	104.6	104.6
Green Roof/Rainwater Harvesting	# of BMPs	25	9	242	1	243
	drainage acres	0.2	0.1	20.7	0.2	20.9
Infiltration Practices	# of BMPs	0	0	12	0	12
	drainage acres	0.0	0.0	1.7	0.0	1.7
Permeable Pavement	# of BMPs	15	8	95	5	100
	drainage acres	0.4	0.2	8.2	0.8	9.0
Vegetated Open Channels	# of BMPs	0	0	0	1	1
	drainage acres	0.0	0.0	0.0	0.4	0.4
Wet Ponds and Wetlands	# of BMPs	0	0	3	6	9
	drainage acres	0.0	0.0	407.5	151.6	559.1
BMP Conversion	# of BMPs	0	0	13	66	79
	drainage acres	0.0	0.0	876.5	2,150.3	3,026.7
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	12,837.1	12,837.1	12,837.1	0.0	12,837.1
Urban Stream Restoration	# of BMPs	1	0	3	29	32
	linear feet	2,525	0.0	4,989.0	37,759.8	42,748.8
Outfall Stabilization	# of BMPs	0	0	7	1	8
	linear feet	0.0	0.0	762.0	190.0	952.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	9,939.2	27,836.0	27,836.0	18,889.4	46,725.4

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Street Sweeping[2]	miles swept	97.19	104.8	104.8	104.9	209.7
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	2	1	24	6	30
	acres converted	0.1	0.01	0.3	0.5	0.8
Forest Planting	# of BMPs	0	0	19	50	69
	acres converted	0.0	0.0	6.1	250.0	256.1
Riparian Forest Planting	# of BMPs	0	0	0	50	50
	acres converted	0.0	0.0	0.0	134.5	134.5
Urban Tree Canopy Planting	# of BMPs	495	839	2,945	973	3,918
	acres converted	4.9	8.4	29.5	9.7	39.2
Street Trees	# of BMPs	539	744	3,136.0	500	3,636
	acres converted	5.4	7.4	53.1	5.0	58.1
Conservation Landscaping	# of BMPs	29	32	70	2	72
	acres converted	0.7	0.5	1.4	0.1	1.4

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-31: BMP Implementation for the Rock Creek Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	11	58	294	117	411
	drainage acres	1.3	46.2	134.9	204.7	339.6
Bioswale	# of BMPs	0	0	4	8	12
	drainage acres	0.0	0.0	4.5	8.8	13.4
Extended Detention Dry Ponds	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	237.4	0.0	237.4
Filtering Practices	# of BMPs	0	0	0	19	19
	drainage acres	0.0	0.0	0.0	89.8	89.8
Green Roof/ Rainwater Harvesting	# of BMPs	25	9	254	1	255
	drainage acres	0.2	0.1	21.8	0.2	22.1
Infiltration Practices	# of BMPs	0	0	12	0	12
	drainage acres	0.0	0.0	1.7	0.0	1.7
Permeable Pavement	# of BMPs	15	8	95	5	100
	drainage acres	0.4	0.2	8.2	0.8	9.0
Vegetated Open Channels	# of BMPs	0	0	0	1	1
	drainage acres	0.0	0.0	0.0	0.4	0.4

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Wet Ponds and Wetlands	# of BMPs	0	0	3	1	4
	drainage acres	0.0	0.0	407.5	25.3	432.8
BMP Conversion	# of BMPs	0	0	13	59	72
	drainage acres	0.0	0.0	876.5	1,154.2	2,030.7
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	12,837.1	12,837.1	12,837.1	0.0	12,837.1
Urban Stream Restoration	# of BMPs	1	0	7	29	36
	linear feet	2525	0.0	24,324.0	37,759.8	62,083.8
Outfall Stabilization	# of BMPs	0	0	7	1	8
	linear feet	0.0	0.0	762.0	190.0	952.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	9,939.2	27,836.0	27,836.0	18,889.4	46725.4
Street Sweeping[2]	miles swept	97.19	104.8	104.8	104.9	209.72
Land Cover Conversion						
Impervious Surface Reduction	# of BMPs	2	1	24	6	30
	acres converted	0.0	0.01	0.3	0.5	0.8
Forest Planting	# of BMPs	0	0	19	10	29
	acres converted	0.0	0.0	6.1	50.0	56.1
Riparian Forest Planting	# of BMPs	0	0	0	10	10
	acres converted	0.0	0.0	0.0	26.9	26.9
Urban Tree Canopy Planting	# of BMPs	495	839	2,949	823	3,772
	acres converted	4.9	8.4	29.5	8.2	37.7
Street Trees	# of BMPs	539	744	3,136	500	3,636
	acres converted	5.4	7.4	53.1	5.0	58.1
Conservation Landscaping	# of BMPs	29	32	70	2	72
	acres converted	0.7	0.5	1.4	0.1	1.4

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

3.5.2 Load Reductions

Table 3-32 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for TP and TSS local TMDL SW-WLA in the Rock Creek watershed.

Results indicate the TSS reduction target of 38.3% will be achieved first, by 2030, and the TP reduction target of 35.0% will be achieved by 2050. The level of implementation needed to achieve the TP target

exceeds the target % reduction for TSS. By achieving the TP target, the TSS % reduction is projected to be 42.9% by 2050.

Table 3-32: Progress and Planned Reductions for the Phosphorus and Sediment Local TMDLs in the Rock Creek Watershed

	Rock Creek	
	TP EOS lbs/yr	TSS EOS lbs/yr
Target Reductions		
Target % Reduction	35%	38.3%
Target Reduction	5,213	12,705,918
Target Load (SW-WLA)	9,682	20,468,802
FY22 Annual Restoration Reductions		
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	527	52,715
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	3.5%	0.2%
FY22 Cumulative Progress Reductions		
FY22 Cumulative Progress Reduction through 6/30/2022	1,004	1,510,694
FY22 Progress % Reduction through 6/30/2022	6.7%	5%
FY23 Annual Restoration Reductions		
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	565	127,544
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	3.8%	0.38%
FY23 Cumulative Progress Reductions		
FY23 Cumulative Progress Reduction through 6/30/2023	1,109	1,708,872
FY23 Progress % Reduction through 6/30/2023	7.4%	5.2%
Planned Restoration Reductions		
Planned Restoration Reduction	4,145	11,076,949
Planned Restoration % Reduction	27.8%	33.4%
Total Implementation (Cumulative Progress + Planned Restoration)		
Total Implementation Reductions	5,253	12,785,821
Total Implementation % Reduction	35.3%	38.5%
Target Year	2050	2030

3.5.3 Progress Implementation Benchmark Evaluation

Table 3-33 presents FY23 progress assessments for the TP and TSS local TMDLs in the Rock Creek watershed. The County has achieved 20.6% and 12.5% of the TP and TSS goals, respectively. A 27.8% reduction remains for TP to reach the 2050 target year and a 33.5% reduction remains for TSS to reach the target year of 2030.

In order to reach the target year of 2050 for TP and 2030 for TSS, milestone goals were set in the County's December 2022 Rock Creek Watershed TMDL Implementation Plan (2022e). Milestones and reduction goals are presented in Table 3-34. Milestone 1 is set for the year 2031 for TP and 2026 for TSS. FY23 progress results indicate that the County is projected to reach TP's Milestone 1 goal of 20.7% reduction

with eight more years remaining to continue BMP implementation. The County has achieved 4.8% TSS reductions through FY23 leaving 29.3% reduction to treat over the next three years to reach the Milestone 1 goal in 2026.

Planned BMP implementation costs are presented in Table 3-35 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TSS TMDL in the County's portion of the Rock Creek watershed is approximately $ 95,380,000. Since the TP pollutant is harder to treat, the cost to implement the additional BMPs needed to achieve the target TP TMDL reductions would be $19,240,000, for a total cost of $114,620,000 to achieve both TSS and TP target reductions by their respective target years.

Table 3-33: Progress Assessment for the Rock Creek Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Rock Creek	TP	35%	7.2%	27.8%	2050	20.6%
	TSS	38.3%	4.8%	33.5%	2030	12.5%

Table 3-34: Milestones and Percent Reduction Benchmarks for the Rock Creek Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TP	Milestone 1	2031	20.7%	3,075
	Milestone 2	2041	28.2%	4,191
	Target Year	**2050**	**35.0%**	**5,711**
TSS	Milestone 1	2026	34.1%	11,327,036
	Target Year	**2030**	**28.3%**	**12,810,502**

Table 3-35: Planned Restoration Cost by Project Type for the Rock Creek Watershed

Project Type	Planned Cost
BMP Conversion	$35,550,000
New BMP	$44,550,000
Stream Restoration	$28,800,000
Tree Planting	$5,350,000
Impervious Surface Reduction	$330,000
Conservation Landscaping	$40,000
Total	**$114,620,000**

3.6 Rocky Gorge and Triadelphia Reservoirs

The Rocky Gorge Reservoir and Triadelphia Reservoir watersheds are located in the northeastern portion of Montgomery County (Figure 3-11). The streams of both watersheds flow through Montgomery County into the Patuxent River, which is the border between Montgomery County and Howard County. The Montgomery County portion of the Rocky Gorge Reservoir watershed is approximately 25,781 acres (40.3 square miles) in area and contains approximately 91.0 total miles of streams, based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The Montgomery County portion of the Triadelphia Reservoir watershed is approximately 13,245 acres (20.7 square miles) in area and contains approximately 50.9 total miles of streams, based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The Rocky Gorge Reservoir watershed includes several named streams, including Reddy Branch and James Creek. The Triadelphia Reservoir watershed includes Scott Branch and Haights Branch (Figure 3-12).

Montgomery County is responsible for one TP TMDL in each of the Rocky Gorge Reservoir and Triadelphia Reservoir watersheds. BMP implementation and progress for these TMDLs is addressed in the following section.

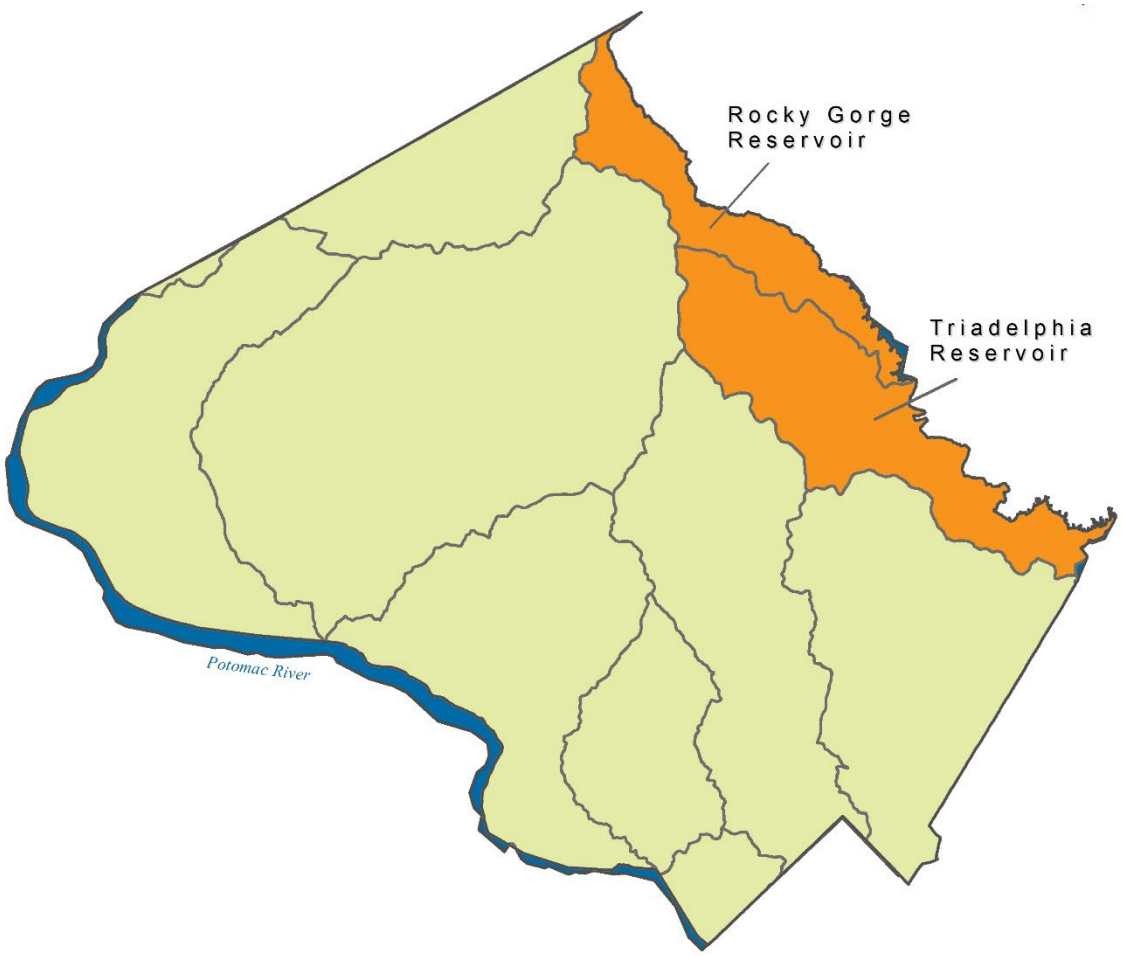

Figure 3-11: Location of Rocky Gorge Reservoir and Triadelphia Reservoir Watersheds

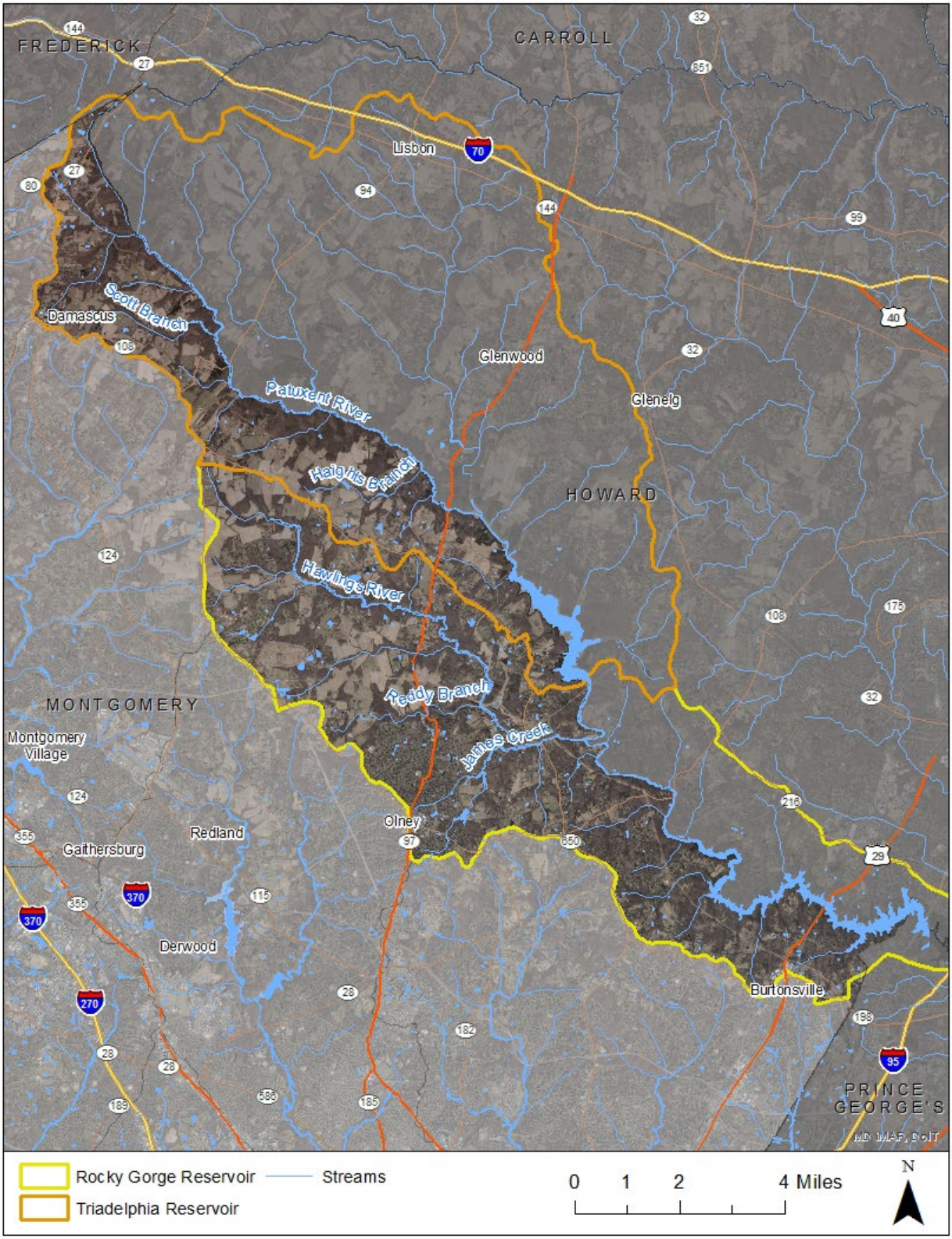

Figure 3-12: Aerial photography (2020) of the Montgomery County Portion of Rocky Gorge Reservoir and Triadelphia Reservoir Watersheds

3.6.1 BMP Implementation

Table 3-36 and Table 3-37 present BMP implementation for the TP local TMDLs in the Rocky Gorge Reservoir and Triadelphia Reservoir, respectively.

Planned BMPs summarized in the tables below represent what is needed to achieve individual SW-WLA targets. A list of planned BMPs for the Rocky Gorge Reservoir and Triadelphia Reservoir watersheds is provided in Appendix A.

Table 3-36: BMP Implementation for the Rocky Gorge Reservoir Phosphorus Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	1	0	12	103	115
	drainage acres	0.2	0.0	8.5	75.0	83.5
Bioswale	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	1.1	0.0	1.1
Filtering Practices	# of BMPs	0	0	0	4	4
	drainage acres	0.0	0.0	0.0	11.8	11.8
Green Roof/ Rainwater Harvesting	# of BMPs	0	0	31	1	32
	drainage acres	0.0	0.0	33.4	0.0	33.4
Infiltration Practices	# of BMPs	0	0	0	0	0
	drainage acres	0.0	0.0	0.0	0.0	0.0
Permeable Pavement	# of BMPs	0	0	3	1	4
	drainage acres	0.0	0.0	4.1	0.01	4.1
Wet Ponds and Wetlands	# of BMPs	0	0	0	8	8
	drainage acres	0.0	0.0	0.0	202.2	202.2
BMP Conversion	# of BMPs	0	0	0	4	4
	drainage acres	0.0	0.0	0.0	438.2	438.2
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	5,500.0	5,500.0	5,500.0	0.0	5,500.0
Urban Stream Restoration	# of BMPs	0	0	1	2	3
	linear feet	0.0	0.0	2,746.0	2,832.0	5,578.0
Outfall Stabilization	# of BMPs	0	0	1	0	1
	linear feet	0.0	0.0	20.0	0.0	20.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	8,145.2	3,808.0	3,808.0	6,044.6	9,852.6
Land Cover Conversion						
Forest Planting	# of BMPs	0	0	2	40	42
	acres converted	0.0	0.0	45.3	200.0	245.3
Riparian Forest Planting	# of BMPs	0	0	0	45	45
	acres converted	0.0	0.0	0.0	121.1	121.1

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Urban Tree Canopy Planting	# of BMPs	85	177	437	373	810
	acres converted	0.9	1.8	4.4	40.0	44.4
Street Trees	# of BMPs	46	42	314	50	364
	acres converted	0.5	0.4	3.1	0.5	3.6
Conservation Landscaping	# of BMPs	3	3	6	1	7
	acres converted	0.03	0.04	0.1	0.004	0.1

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

Table 3-37: BMP Implementation for the Triadelphia Reservoir Phosphorus Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	0	0	0	20.0	20.0
	drainage acres	0.0	0.0	0.0	14.5	14.5
Green Roof/ Rainwater Harvesting	# of BMPs	0	0	5	0.0	5.0
	drainage acres	0.0	0.0	1.5	0.0	1.5
Wet Ponds and Wetlands	# of BMPs	0	0	0	1.0	1.0
	drainage acres	0.0	0.0	0.0	25.3	25.3
BMP Conversion	# of BMPs	0	0	0	1.0	1.0
	drainage acres	0.0	0.0	0.0	142.3	142.3
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	2,172.7	2,172.7	2,172.7	0.0	2,172.7
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	820.0	18.0	18.0	426.5	444.5
Land Cover Conversion						
Riparian Forest Planting	# of BMPs	0	0	0	4.0	4.0
	acres converted	0.0	0.0	0.0	10.8	10.8
Urban Tree Canopy Planting	# of BMPs	3	20	42	187.0	229.0
	acres converted	0.03	0.2	0.4	1.9	2.3
Street Trees	# of BMPs	0	2	32	5.2	37.2
	acres converted	0.0	0.02	0.3	0.1	0.4

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

3.6.2 Load Reductions

Table 3-38 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for the TP local TMDL in both the Rocky Gorge and Triadelphia reservoirs.

Results indicate the TP reduction target of 15% will first be achieved in the Triadelphia Reservoir watershed by 2028 and the 15% TP reduction target for Rocky Gorge Reservoir will be met the following year.

Table 3-38: Progress and Planned Reductions for the Phosphorus Local TMDLs in the Rocky Gorge and Triadelphia Reservoirs

	Rocky Gorge Reservoir	Triadelphia Reservoir
	TP EOR lbs/yr	TP EOR lbs/yr
Target Reductions		
Target % Reduction	15%	15%
Target Reduction	839	141
Target Load (SW-WLA)	4,754	799
FY22 Annual Restoration Reductions		
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	163	63
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	2.9%	6.8%
FY22 Cumulative Progress Reductions		
FY22 Cumulative Progress Reduction through 6/30/2022	330	64
FY22 Progress % Reduction through 6/30/2022	5.9%	6.8%
FY23 Annual Restoration Reductions		
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	162	63
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	2.9%	6.7%
FY23 Cumulative Progress Reductions		
FY23 Cumulative Progress Reduction through 6/30/2023	330	64
FY23 Progress % Reduction through 6/30/2023	5.9%	6.8%
Planned Restoration Reductions		
Planned Restoration Reduction	671	78
Planned Restoration % Reduction	12.0%	8.3%
Total Implementation (Cumulative Progress + Planned Restoration)		
Total Implementation Reductions	1,001	143
Total Implementation % Reduction	17.9%	15.2%
Target Year	2029	2028

3.6.3 Progress Implementation Benchmark Evaluation for Rocky Gorge Reservoir

Table 3-39 presents FY23 progress assessments for the TP local TMDL in the Rocky Gorge Reservoir watershed. The County has achieved 39.3% of the TP goal and a 9.1% reduction remains to reach the 2029 target year.

In order to reach the target year of 2029, milestone goals were set in the County's December 2022 Rocky Gorge Triadelphia Reservoirs TMDL Implementation Plan (2022f). Milestone goals and benchmarks are presented in Table 3-40. FY23 progress results indicate that the County has achieved 5.9% through FY23 leaving a 0% reduction to treat over the next year to reach the Milestone 1 goal of 5.9% in 2024.

Planned BMP implementation costs are presented in Table 3-41 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TP TMDL in the County's portion of the Rocky Gorge Reservoir watershed is approximately $15,822,000.

Table 3-39: Progress Assessment for the Rocky Gorge Reservoir Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Rocky Gorge Reservoir	TP	15%	5.9%	9.1%	2029	39.3%

Table 3-40: Milestones and Percent Reduction Benchmarks for the Rocky Gorge Reservoir

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOR lbs/yr
TP	Milestone 1	2024	5.9%	328
	Milestone 2	2027	9.8%	551
	Target Year	**2029**	**15.0%**	**998**

Table 3-41: Planned Restoration Cost by Project Type for the Rocky Gorge Reservoir

Project Type	Planned Cost
BMP Conversion	$3,830,000
New BMP	$6,670,000
Stream Restoration	$1,330,000
Tree Planting	$3,990,000
Conservation Landscaping	$2,000
Total	**$15,822,000**

3.6.4 Progress Implementation Benchmark Evaluation for Triadelphia Reservoir

Table 3-42 presents FY23 progress assessments for the TSS local TMDL in the Triadelphia Reservoir watershed. The County has achieved 45.3% of the TSS goal and an 8.2% reduction remains to reach the 2028 target year.

In order to reach the target year of 2028, milestone goals were set in the County's updated December 2022 Rocky Gorge Triadelphia Reservoirs TMDL Implementation Plan (2022f). Milestones and benchmarks are presented in Table 3-43. FY23 results indicate that the County has achieved 6.8% reduction through FY23, leaving a 0% reduction to treat over the next year to reach Milestone 1.

Planned BMP implementation costs are presented in Table 3-44 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TSS TMDL in the County's portion of the Triadelphia Reservoir watershed is approximately $2,392,000.

Table 3-42: Progress Assessment for the Triadelphia Reservoir Watershed

Local TMDL Watershed Name	Pollutant	MDE Published % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Triadelphia Reservoir	TSS	15%	6.8%	8.2%	2028	45.3%

Table 3-43: Milestones and Percent Reduction Benchmarks for the Triadelphia Reservoir Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOR lbs/yr
TSS	Milestone 1	2024	5.3%	55
	Milestone 2	2026	5.3%	55
	Target Year	**2028**	**15.0%**	**208**

Table 3-44: Planned Restoration Cost by Project Type for Triadelphia Reservoir Watershed

Project Type	Planned Cost
BMP Conversion	$1,180,000
New BMP	$1,060,000
Stream Restoration	$0
Tree Planting	$152,000
Total	**$2,392,000**

3.7 Seneca Creek

The Seneca Creek watershed is located in the north-central portion of Montgomery County (Figure 3-13). The watershed flows south where it drains to the Potomac River, which ultimately leads to the Chesapeake Bay. The watershed is entirely contained with Montgomery County. The Seneca Creek watershed is approximately 82,738 acres (129.3 square miles) in area and contains approximately 299.3 total miles of streams, based on the National Hydrography Dataset High Resolution 1:24,000 scale (NHD Plus HR) stream data. The watershed includes several named streams, including Great Seneca Creek, Cabin Branch, Gunners Branch, Little Seneca Creek, and Ten Mile Creek, among others (Figure 3-14).

Montgomery County is responsible for TSS TMDL in the Seneca Creek watershed. BMP implementation and progress for this TMDL is addressed in the following section.

Figure 3-13: Location of Seneca Creek Watershed

Figure 3-14: Aerial photography (2020) of the Montgomery County Portion of Seneca Creek Watershed

3.7.1 BMP Implementation

Table 3-45 presents BMP implementation for the TSS local TMDL in the Seneca Creek watershed.

Planned BMPs summarized in the tables below represent what is needed to achieve the SW-WLA target. A list of planned BMPs for the Seneca Creek watershed is provided in Appendix A.

Table 3-45: BMP Implementation for the Seneca Creek Sediment Local TMDL

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Stormwater						
Bioretention	# of BMPs	0	1	31	658	689
	drainage acres	0.0	0.2	55.8	484.6	540.4
Filtering Practices	# of BMPs	0	0	0	55	55
	drainage acres	0.0	0.0	0.0	162.8	162.8
Green Roof/Rainwater Harvesting	# of BMPs	2	17	151	0	151
	drainage acres	0.03	0.2	20.3	0.0	20.3
Infiltration Practices	# of BMPs	0	0	1	0	1
	drainage acres	0.0	0.0	0.1	0.0	0.1
Permeable Pavement	# of BMPs	0	0	2	0	2
	drainage acres	0.0	0.0	0.1	0.0	0.1
Wet Ponds and Wetlands	# of BMPs	0	0	0	17	17
	drainage acres	0.0	0.0	0.0	429.6	429.6
BMP Conversion	# of BMPs	2	1	22	74	96
	drainage acres	46.3	9.2	3,305.9	3,815.0	7,120.8
Alternative Practices						
Urban Nutrient Management[1]	drainage acres	17,695.6	17,695.6	17,695.6	0.0	17,695.6
Urban Stream Restoration	# of BMPs	0	0	1	28	29
	linear feet	0.0	0.0	180.0	49,728.0	49,908.0
Outfall Stabilization	# of BMPs	0	0.0	4.0	3	7
	linear feet	0.0	0.0	200.0	2,505.0	2,705.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	5,214.5	9,560.0	9,560.0	7,378.4	16,938.4
Street Sweeping[2]	miles swept	0	58.5	58.5	58.5	117.0
Land Cover Conversion						
Forest Planting	# of BMPs	0	0	0	200	200
	acres converted	0.0	0.0	0.0	1,000.0	1,000.0
Riparian Forest Planting	# of BMPs	0	0	0	275	275
	acres converted	0.0	0.0	0.0	739.8	739.8
Urban Tree Canopy Planting	# of BMPs	354	800	2,598.0	1,715	4,313.0
	acres converted	3.5	8.0	26.0	17.2	43.1

BMP	Unit	FY22	FY23	FY23 Progress	Planned	Total
Street Trees	# of BMPs	218	273	1,623.0	258.0	1,881.0
	acres converted	2.2	2.7	38.0	2.6	40.6
Conservation Landscaping	# of BMPs	4	1	5	3	8
	acres converted	0.1	0.02	0.1	0.01	0.1

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).
[2]Annual BMP.

3.7.2 Load Reductions

Table 3-46 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for TSS local TMDL SW-WLA in the Seneca Creek watershed.

Results indicate the TSS% reduction target of 44.6% will be achieved by 2064.

Table 3-46: Progress and Planned Reductions for the Sediment Local TMDL in the Seneca Creek Watershed

	Seneca Creek TSS EOS lbs/yr
Target Reductions	
Target % Reduction	44.6%
Target Reduction	30,149,195
Target Load (SW-WLA)	37,449,897
FY22 Annual Restoration Reductions	
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	122,312
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	0.2%
FY22 Cumulative Progress Reductions	
FY22 Cumulative Progress Reduction through 6/30/2022	2,206,504
FY22 Progress % Reduction through 6/30/2022	3.3%
FY23 Annual Restoration Reductions	
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	78,158
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	0.1%
FY23 Cumulative Progress Reductions	
FY23 Cumulative Progress Reduction through 6/30/2023	2,283,618
FY23 Progress % Reduction through 6/30/2023	3.4%
Planned Restoration Reductions	
Planned Restoration Reduction	27,873,919
Planned Restoration % Reduction	41.2%
Total Implementation (Cumulative Progress + Planned Restoration)	
Total Implementation Reductions	30,157,537
Total Implementation % Reduction	44.6%
Target Year	2064

3.7.3 Progress Implementation Benchmark Evaluation

Table 3-47 presents FY23 progress assessments for the TSS local TMDL in the Seneca Creek watershed. The County has achieved 7.6% of the TSS goal and a 41.2% reduction remains to reach the 2064 target year.

In order to reach the target year of 2064, milestone goals were set in the County's December 2022 Seneca Creek TMDL Implementation Plan (2022g). Milestones and benchmarks are presented in Table 3-48. FY23 progress results indicate that the County has achieved 3.4% through FY23, leaving a 14.4% reduction to treat over the next 13 years to reach the Milestone 1 goal of 17.3% in 2036.

Planned BMP implementation costs are presented in Table 3-49 by project type. The projected cost to implement the projects described in this Plan to achieve the required reductions for the TSS TMDL in the County's portion of the Seneca Creek watershed is approximately $147,564,000.

Table 3-47: Progress Assessment for the Seneca Creek Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Seneca Creek	TSS	44.6%	3.4%	41.2%	2064	7.6%

Table 3-48: Milestones and Percent Reduction Benchmarks for the Seneca Creek Watershed

Pollutant	Milestone	Year	% Reduction Goal	Reduction Goal EOS lbs/yr
TSS	Milestone 1	2036	17.3%	12,263,825
	Milestone 2	2050	25.1%	17,836,520
	Target Year	**2064**	**44.6%**	**31,701,199**

Table 3-49: Planned Restoration Cost by Project Type for the Seneca Creek Watershed

Project Type	Planned Cost
BMP Conversion	$61,200,000
New BMP	$38,920,000
Stream Restoration	$25,830,000
Tree Planting	$21,610,000
Conservation Landscaping	$4,000
Total	**$147,564,000**

4 Trash Local TMDL

Montgomery County is responsible for one trash local TMDL for the Anacostia River watershed.

Figure 4-1: Location of Montgomery County's Trash TMDL in the Anacostia River Watershed

4.1 BMP Implementation

The County has a robust strategy for preventing and eliminating trash from the Anacostia watershed. The programming can be categorized into two broad groups (1) BMPs, alternative practices, and programs that provide direct litter removal and (2) programs that provide enforcement and education to reduce litter from entering our waterways.

Direct litter removal is achieved using stormwater management BMPs that prevent litter from entering storm drain and streams, and alternative BMPs the practices that remove litter from our streets, sidewalks, communities, and streams. The types of direct litter removal used by the County includes the following:

Stormwater Management BMPs:

- The DEP's Watershed Restoration Program is actively installing stormwater management (SWM) practices to meet the MS4 Permit's impervious area stormwater control requirement and Anacostia TMDL TN, TP and TSS WLA. Many of these practices are structural and do not allow trash to pass. The trash and debris build up around forebays, plants and internal elements, and outlets and are removed from the facilities through DEP's Stormwater Inspection and Maintenance Program.

Alternative Practices:

- Arterial Street Sweeping: DEP administers an arterial street-sweeping program. Arterial routes are larger roads with more commercial activity, traffic, and observed trash. The arterial routes are swept at night when traffic volumes are low. This is intended to reduce traffic impacts, promote safety, avoid parked cars, and reduce energy consumption. The sweeping is regularly inspected to ensure consistent quality. In FY23, the County adjusted the arterial sweeping program to increase efficiency and reduce additional pollutants. The frequency was changed from one cycle every 2 weeks to one cycle monthly, except for spring and fall when a cycle is swept every 1 to 2 weeks. In FY22, DEP managed the sweeping of 126.2 lane miles per cycle in Anacostia Watershed. In FY23, the land miles were reduced to 106.3 in the Anacostia watershed.
- Inlet and conveyance system cleaning: DOT's inlet/storm drain cleaning program includes removing materials from clogged inlets, storm drains, drainage ditches, outfalls, and adjacent drainage areas. This is performed by using a vacuum truck, excavators, and manual labor. Material removed via vacuum truck is disposed of at the Oaks Landfill Leachate Pre-treatment Facility. Other organic and inorganic materials are disposed of at the Shady Grove Transfer Station. The amount of material removed the inlets will vary each year. In FY23 less material was removed from the inlets in Anacostia due to needs for maintenance and cleaning in other watersheds of the County.
- Trash Trap: The County has installed an in-stream trash trap that collects floating trash and litter. The trash trap is cleaned monthly and/or after a heavy storm event. The trash collected from the trap is removed, sorted, and the put into a trash bag for proper disposal. The trash trap also has educational signs installed along the stream bank to educate the neighborhood about the trash trap.

Direct Litter Removal Programmatic BMPs:

- Volunteer clean-ups- The County provides two types of programming that offer volunteers an opportunity to remove trash and litter from their communities. These include:
    - Plogging & community clean-ups: DEP Stream Stewards volunteer program provides cleanup supplies to groups who want to do a community clean up and individuals who join our plogging program to clean trash on their own time. Each FY, DEP continues to grow and expand the number of volunteer efforts throughout the watershed.
    - Adopt A Road: DOT's Adopt-A-Road Program supplies community groups with equipment in exchange for their voluntary services of picking up trash and litter along roadways.

- Litter Collected Along Roadside Drainage Areas: The DOT maintains roadside drainage areas throughout the County which includes concrete gutters, drainage ditches, and shoulders adjacent to the drainage ditches. This requires the mowing of the grass shoulders along the roadway. During mowing operations, DOT performs a collection of litter along shoulder drainage areas to prevent it from entering the storm drain system. Bags are collected and recorded daily and deposited at the Transfer Station on Shady Groove Road.
- Stream Cleanups: Most of the stream valley corridors in the Anacostia are under the operation and management by the Maryland National Park and Planning Commission. In FY23, DEP worked with MNCPPC to learn more about their volunteer stream clean-up program and to collaborate when possible. MNCPPC does not have a WLA in the Anacostia Trash TMDL and therefore agreed to let DEP use the amount of trash collected by their volunteers from the streams and parks in the Anacostia toward the trash TMDL annual WLA. FY23 is the first year DEP is reporting the amount of trash removed from MNCPPC streams and parkland in the Anacostia watershed.
- Contractor Clean-ups: The County will pursue conducting contractor cleanups in more challenging locations within the Anacostia watershed. Metropolitan Washington Council of Governments (MWCOG) performs a trash hot spot analysis within the Anacostia watershed for DEP. Some of these locations identified will require a more physical effort than groups of volunteers can be expected to perform. DEP will explore entering into a contract with a vendor to remove the trash in these hot spot areas. DEP expects to work with both MNCPPC and private property owners as these hot spot sites are located. County staff will visit the sites for clean-up to evaluate the type and composition of litter found at the site. It is expected that both MS4 WLA and LA litter will be found at the site. The Contractors will be expected to separate the LA litter from the MS4 WLA litter. Bagged items will be weighed and taken to the County's Transfer Station. Depending on the site, a dumpster may be brought in to collect the litter and trash. The County is working on developing a draft scope of work for clean-up of several sites. DEP expects to issue the solicitation in FY24/25.

Litter reduction programs work together to reduce the source of litter. Several programs run by the County provide enforcement and compliance of our laws and outreach and education to change our residents and businesses behavior to prevent and stop littering.

- Solid Waste Law Enforcement Programs: The County has several programs that enforce the prevention and removal of trash and litter. These programs enforce our solid waste law that prohibit littering and dumping of trash.
    - Department of Housing and Community Affairs (DHCA) Clean and Lien Program: The DHCA Code Enforcement Division investigates and enforces violations of litter code on private property.
    - Illegal Dumping Enforcement: Montgomery County citizens can report illegal dumping through 311. A DEP investigator will investigate the complaint and try to identify the source to prevent future dumping. Enforcement actions are taken as necessary using civil citation fines and notices of violations, as well as warning letters. Illegal dumping signs are also placed in areas with frequent dumping.
    - Recycling and Resource Management Enforcement: The DEP Recycling and Resource Management Division manages multiple enforcement programs which contribute to our

litter reduction programs. These programs' primary function is to ensure that materials are recycled correctly, and solid waste is disposed of properly in accordance with the County code and regulations. The type of enforcement includes:

- Violations of vehicle covering requirements that prevent loss of trash from leaving the vehicle.
- Education and enforcement of the County's recycling laws for multi-family and business, including preventing trash on the ground around dumpsters, evaluating locations with inadequate trash and recycling receptacles and dumpsters and conducting enforcement of proper recycling and collection by private haulers.

- Litter reduction through official taxes and ban legislation: The County has passed several pieces of legislation that are targeted to change behaviors by discouraging and/or prohibiting the use of certain plastic products. These bills include a carryout bag tax, polystyrene ban, and straw ban. The Carryout bag tax was passed to encourage residents and business to use reusable bags in place of single use carryout bags. The polystyrene and straw bans were passed because straws and polystyrene are not recyclable plastic material, and these bans encourage businesses to use reusable or home compostable or marine degradable straw and food service ware.
    - Carryout Bag Tax: Montgomery County implemented a carryout bag tax in 2012. All businesses are required to tax 5 cents for each disposable bag provided at the point of sale.
    - Polystyrene ban: In FY21, the County Executive introduced, and the County Council passed legislation to ban the use and sale of rigid polystyrene food service ware, effectively increasing the existing ban on expanded polystyrene to include all polystyrene food service items. The DEP continues efforts to educate businesses; affected retailers; County agencies, contractors, and lessees; and the public about the County's ban on using and selling expanded polystyrene (Styrofoam®) food service ware and loose-fill packing peanuts.
    - Straw ban: In FY21, the County Executive proposed, and the County Council passed legislation pertaining to drinking straws, requiring that restaurants and food service businesses provide straws to dine-in customers only upon request. The legislation further requires any straws provided be either reusable or made from only marine degradable or home compostable materials. DEP maintains education programs to work with numerous partners providing information to affected businesses as well as an enforcement program to investigate complaints received of noncompliance.

- Recycling Education: The County provides outreach and education on recycling and litter reduction through a variety of methods, including virtual training, social media, in-person trainings, attending events, volunteers, and printed educational and instructional materials. Some campaigns are more general, such as the "Reduce, Reuse, and Recycle Right" campaign, which aims to educate residents, multi-family properties and businesses, and organizations on how to reduce waste and recycle properly. Other campaigns are more specific to certain types of materials, such as the Skip the Straw and Switch from no. 6 Plastics campaigns, which are focused on straws and no. 6 polystyrene food service ware, respectively.

- Litter Reduction Education: The County conducts a social media plogging promotion and challenges to County residents to pick up litter while walking, jogging, or running in local neighborhoods. Annually, the County holds a holiday campaign, which includes social media, bus advertisements, and events to encourage residents to have more environmentally friendly holiday practices, including using reusable shopping bags. Specific targeted litter education programs include:
    - Storm drain marking program- Storm drain markers help educate the public about our storm drain system. The DEP provides the marking supplies and instructions to residents interested in leading a storm drain marking effort in their community.
    - Storm drain art program – A keyway that to educate others is through art. The DEP Storm Drain Art program uses the creative skills of our residents to spread the word to stop litter and other pollution from ending up in our environment and eventually ending up in our waterways. As part of this program, DEP invites local residents, artists, students, and activities to develop art that can be put on storm drain inlets. The art is visible to the public and will play an important role in educating County residents on water quality issues. Plus, the art helps beautify the County and add a pop of color and beauty to typically boring storm drains.

Table 4-1 and Table 4-2 present BMP implementation for the trash local TMDL in the Anacostia River watershed in FY22 Progress and FY23 Progress, respectively. Annual stormwater BMP restoration completed in FY22 and FY23 in the Anacostia River watershed is presented in Section 3.1.1. Planned BMPs summarized in the Table 4-3 represent what is needed to achieve the SW-WLA target.

Table 4-1: FY22 Progress BMP Implementation for the Anacostia River Trash Local TMDL

Project Category and Type	Number of BMPs	Area Treated (ac)	Trash Removed (lbs)
Stormwater	314	213.4	3,357.8
Bioretention	291	192.8	3,034.7
Bioswale	13	8.7	119.0
Extended Detention Dry Ponds	1	3.8	68.6
Filtering Practices	5	6.8	110.2
Infiltration Practices	4	1.4	25.2
Alternative Practices[1]	0	0.0	58,538.5
Inlet/Storm Drain Cleaning			456.9
Street Sweeping			207.6
Outreach/Education Programs			1,485.2
Recycling Education			1,621.3
Volunteer Cleanups			5,230.4
Litter Collected Along Roadside Drainage Areas			10,661.1
Carryout Plastic Bag Tax			16,880.4
Straw Ban			21,968.3
Trash Nets/Trash Traps			27.3
Total Trash Reduction from FY22 Progress BMPs (lbs)			61,896

[1]All alternative practices are annual practices.

Table 4-2: FY23 Progress BMP Implementation for the Anacostia River Trash Local TMDL

Project Category and Type	Number of BMPs	Area Treated (ac)	Trash Removed (lbs)
Stormwater	316	213.7	3,362.6
Bioretention	293	193.1	3,039.5
Bioswale	13	8.7	119.0
Extended Detention Dry Ponds	1	3.8	68.6
Filtering Practices	5	6.8	110.2
Infiltration Practices	4	1.4	25.2
Alternative Practices	0	0.0	84,899.0
Inlet/Storm Drain Cleaning[1]			189.8
Street Sweeping[1]			177.0
Outreach/Education Programs[1]			1,485.2
Recycling Education[1]			1,621.3
Stream Cleanups[1]			24,745.3
Volunteer Cleanups[1]			7,132.6
Litter Collected Along Roadside Drainage Areas[1]			10,672.8
Carryout Plastic Bag Tax			16,880.4
Straw Ban			21,968.3
Trash Nets/Trash Traps[1]			26.3
Total Trash Reduction from FY23 Progress BMPs (lbs)			88,262

[1]Annual practices.

Table 4-3: Progress and Planned BMP Implementation for the Anacostia River Trash Local TMDL

BMP	Unit	FY2009 – FY2023 Progress	FY2024 – FY2035 Future	Total
Stormwater BMPs	Area Treated (ac)	213.7	2.7	216.4
	Trash Removed (lbs)	3,362.6	20.4	3,383.0
Street Sweeping[1]	Miles Swept	106.3	106.3	106.3
	Trash Removed (lbs)	177.0	177.0	177.0
Inlet/Storm Drain Cleaning[1]	Total Material Removed (lbs)	4,746.0	8,018.4	8,018.4
	Trash Removed (lbs)	189.8	320.7	320.7
Outreach/Education Programs[1]	Trash Removed (lbs)	1,485.2	5,940.7	5,940.7
Recycling Education[1]	Trash Removed (lbs)	1,621.3	6,485.3	6,485.3
Stream Cleanups[1]	# Bags of Trash Removed	1,542	93	93
	Trash Removed (lbs)	24,745.3	1,500.0	1,500.0
Volunteer Clean-ups[1]	# Bags of Trash Removed	444	530	530
	Trash Removed (lbs)	7,132.6	8,500.0	8,500.0
Litter Collected Along Roadside Drainage Areas[1]	# Bags of Trash Removed	665	1,246	1,246
	Trash Removed (lbs)	10,672.8	20,000.0	20,000.0
Contractor Clean-ups[1]	# Bags of Trash Removed	0	9,346	9,346
	Trash Removed (lbs)	0.0	150,000.0	150,000.0
Carryout Plastic Bag Tax	Trash Removed (lbs)	16,880.4	n/a	16,880.4
Straw Ban	Trash Removed (lbs)	21,968.3	n/a	21,968.3
Littering and Illegal Dumping Enforcement[1]	Trash Removed (lbs)	0.0	5,000.0	5,000.0
Trash Nets/Trash Traps[1]	Trash Removed (lbs)	26.3	1,000.0	1,000.0
Sum of Trash Removed Annually (lbs)		88,262	198,944	241,155

[1]Annual practice.

4.2 Load Reductions

Table 4-4 below presents trash reductions achieved cumulatively for FY22 progress, the trash reductions achieved annually for the FY23 reporting year, cumulative reductions for FY23 progress, reductions from Planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for the trash local TMDL in the Anacostia River 8-digit watershed.

Results indicate the trash reduction target of 100% will be achieved by 2035.

Table 4-4: Progress and Planned Reductions for the Trash Local TMDL in the Anacostia River Watershed

	Anacostia River Trash lbs/yr
Baseline Loads and Target Reductions	
Target % Reduction	100%
Target Reduction	240,117
Target Load (SW-WLA)	n/a
FY22 Cumulative Progress Reductions	
FY22 Cumulative Progress Reduction through 6/30/2022	61,896
FY22 Progress % Reduction through 6/30/2022	25.8%
FY23 Cumulative Progress Reductions	
FY23 Cumulative Progress Reduction through 6/30/2023	88,262
FY23 Progress % Reduction through 6/30/2023	36.8%
Planned Restoration Reductions	
Planned Restoration Reduction	152,894
Planned Restoration % Reduction	63.6%
Total Implementation (Cumulative Progress + Planned Restoration)	
Total Implementation Reductions	241,155
Total Implementation % Reduction	100.4%
Target Year	2035

4.3 Progress Implementation Benchmark Evaluation

Table 4-5 presents FY23 progress assessments for the trash local TMDL in the Anacostia River watershed. The County has achieved 36.8% of the trash goal and a 63.2% reduction remains to reach the 2035 target year.

Table 4-5: Progress Assessment for the Trash TMDL in the Anacostia River Watershed

Local TMDL Watershed Name	Pollutant	Target % Reduction	Progress % Reduction	% Reduction Remaining	Target Year	% of Goal Achieved
Anacostia River	Trash	100%	36.8%	63.2%	2035	36.8%

5 Bacteria Local TMDLs

Montgomery County is responsible for four bacteria TMDLs: one each in Anacostia River, Cabin John Creek, Lower Monocacy River, and Rock Creek.

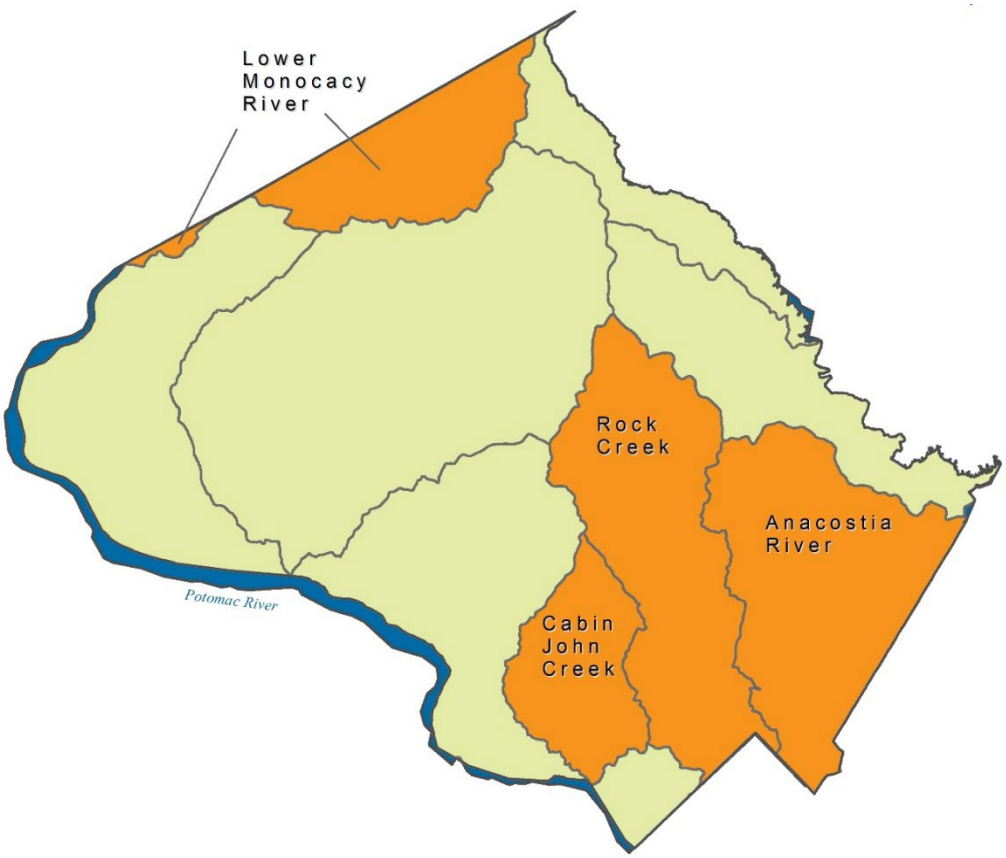

Figure 5-1: Location of Montgomery County's Bacteria TMDL Watersheds

Montgomery County is preparing bacteria TMDL implementation plans following MDE's Bacteria Implementation Plan Guidance published in February 2022 (MDE, 2022e). The plans are focused on identifying the bacteria sources (spatially and by source type) through desktop analysis and monitoring. Once potential sources are identified and confirmed, they will be addressed, and monitoring will continue so that trends and ideally a reduction can be detected. The County has coordinated with MDE on a submittal of the draft plans to MDE in early 2024. A brief summary is provided here.

The County researched and compiled data under a desktop source identification, with results documented in a data compilation results technical memorandum and associated data summary table listing the datasets researched and compiled to support the analysis. Data sources compiled include spatial data, monitoring data, data related to human sources, and data to describe potential non-human sources. Data fall into general categories related to land use, municipal stormwater infrastructure, municipal sanitary sewer systems, on-site disposal systems, landfills, wildlife, pet related elements such as dog parks, illicit

discharges, and data to characterize potential exposures such as water contact recreation areas and beaches.

Currently the County is reviewing and analyzing the compiled spatial and monitoring data, and identifying potential sources of bacteria contamination, both by type or source and by location. For each source, the implementation plan will identify, where possible at this early stage, strategies to address the source. An associated monitoring strategy is being developed with the goal of confirming existing sources, identifying new sources, assessing trends, and evaluating impairment status. Potential methods will include fixed bacteria monitoring stations sampled monthly, source tracking procedures using indicators such as ammonia nitrogen, and microbial source tracking when needed to identify a specific source type. The monitoring strategy will include sites identified by the County to satisfy the MS4 permit bacteria monitoring requirements (Watershed Assessment Monitoring IV.G.2.b.ii) for at least one long-term bacteria monitoring station in each TMDL watershed. Following MDE review and approval of the implementation plan / monitoring strategy, a quality assurance project plan (QAPP) will be prepared to detail the monitoring methods and quality assurance elements of the program.

6 PCBs Local TMDLs

Montgomery County is responsible for three PCB TMDLs, two in the Tidal/Nontidal Anacostia River and one in the Patuxent River.

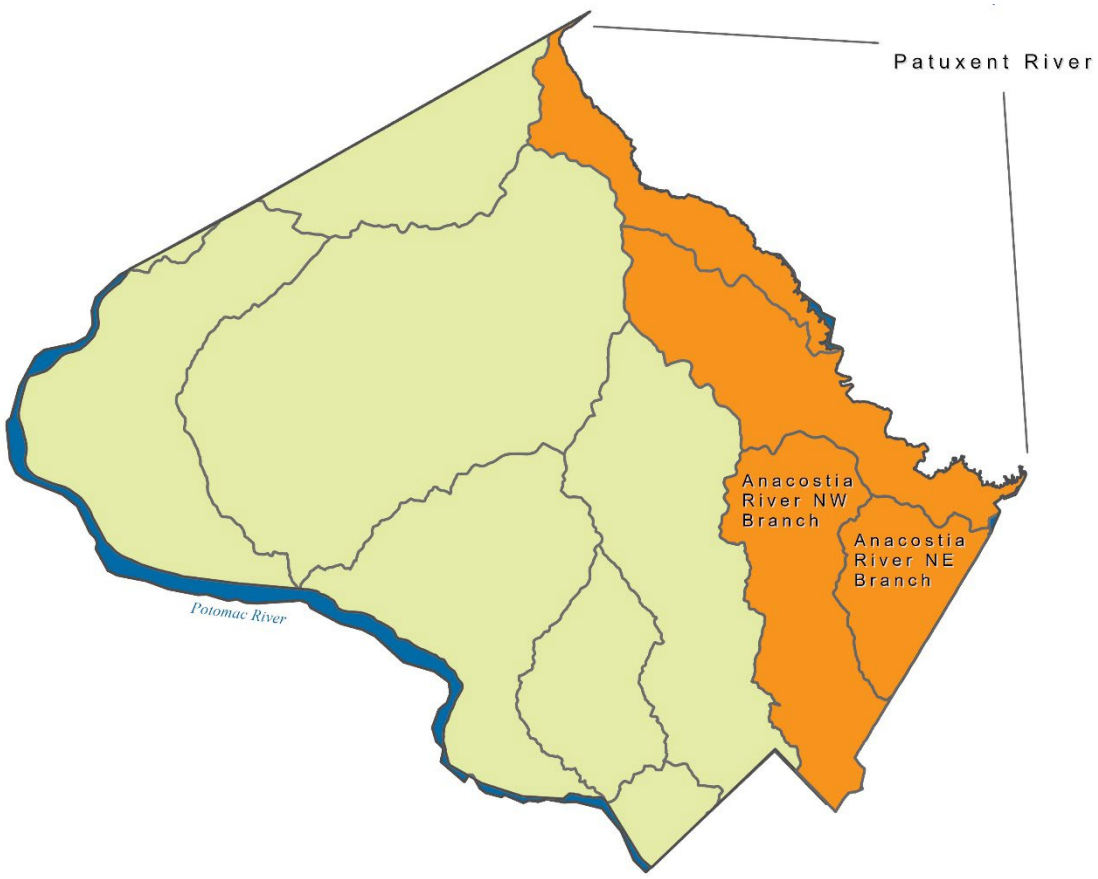

Figure 6-1: Location of Montgomery County's PCBs TMDL Watersheds

Montgomery County is preparing PCB TMDL implementation plans following MDE's PCB implementation plan guidance published in August of 2022 (MDE, 2022c). Per the guidance, the plans focus on the identification of potential PCBs sources within the TMDL watersheds through an initial desktop source assessment, followed by a risk assessment, subwatershed prioritization and monitoring plan. The PCB plans detail the desktop source assessment process and results and include the sampling and analysis plan to monitor locations throughout each watershed to determine where PCB source locations exist. The County's PCB TMDL plans are slated to be submitted to MDE in early 2024. Per MDE guidance the official due date is August 2024. A brief summary is provided here.

The County completed a desktop source assessment, compiling spatial data relevant to potential watershed PCB sources from the data package provided by MDE as well as open-source databases linked in MDEs guidance. Datasets include both potential sources such as EPA PCB transformer and PCB activities databases, hazardous waste sites, and EPA toxic release inventories, and locations of potential exposure such as public angler access sites.

Once all potential sources and their locations were compiled and mapped, the County conducted further investigation to confirm the relevance of each record. The County then entered the source records located in each 12-digit subwatershed into the TMDL subwatershed risk assessment template spreadsheet provided by MDE to calculate a risk score for each subwatershed resulting in a subwatershed prioritization.

The County has identified potential monitoring sites in the Patuxent and Anacostia watersheds including reference sites away from potential PCB sources to serve as control samples. Potential sampling locations were selected based on their proximity to and inclusion of potential sources, as well their physical and legal accessibility. The PCB implementation plan source tracking and monitoring process will continue as an adaptive approach based on monitoring results following each phase of monitoring. The plans will include a sampling and analysis plan (SAP) detailing the PCB sampling study design, field and laboratory methods, and data analysis procedures. Following MDE review and approval of the implementation plan with the SAP, a QAPP will be prepared to detail the monitoring methods and quality assurance elements of the program.

Montgomery County is coordinating implementation of the plan with Anne Arundel County and Howard County, both of which have similar requirements to address their portion of the Patuxent PCB TMDL. Partnering counties will coordinate timing of sampling to maximize efficiency and reduce overall laboratory costs. Field and laboratory methods will be consistent across the jurisdictions so that data from study and reference sites can be shared. The County's SAP and QAPP will be prepared in tandem with both Anne Arundel and Howard to ensure method consistency. The County will continue to coordinate with MDE on development of the plans and implementing the sampling program.

7 Chesapeake Bay TMDL

Countywide completed BMP implementation and loads for FY22 progress, FY23 annual restoration, and FY23 cumulative progress are presented in the sections below. Progress is assessed by comparing the calculated percent reduction achieved for TN and TP against the MDE published percent reductions assigned for Montgomery County's portion of the Chesapeake Bay TMDL. As stated in section 1.2.2, unlike TN and TP, there is no required percent reduction for TSS in the Chesapeake Bay TMDL; rather, it is

assumed that the TSS target will be met if the TP target is met. Although a TSS target reduction is not included for the Chesapeake Bay TMDL, the County is presenting the TSS reductions associated with restoration BMPs in this Plan.

Planned BMP implementation and loads are also summarized in the tables below and are presented in two ways: 1. Planning up to the 2025 Chesapeake Bay TMDL target year; and 2. Planning associated with achieving all local TMDL SW-WLA targets.

7.1 BMP Implementation

Table 7-1 presents Countywide BMP implementation for annual restoration completed in both FY22 and FY23 reporting years, cumulative BMP implementation through FY23, and planned BMP implementation.

Planned BMP implementation is presented through the 2025 Bay TMDL target year and through FY2027, the last fiscal year of the County's current MS4 permit.

Table 7-1: BMP Implementation for the Chesapeake Bay TMDL Through 2027

BMP	Unit	FY22	FY23	FY23 Progress	Planned Through FY2025	Planned FY2026-2027	Total
Stormwater							
Bioretention	# of BMPs	25	76	1,053	1	12	1,066
	drainage acres	14.3	48.5	489.2	67.9	4.6	561.7
Bioswale	# of BMPs	0	0	23	0	0	23
	drainage acres	0.0	0.0	36.6	0.0	0.0	36.6
Extended Detention Dry Ponds	# of BMPs	0	0	3	0	0	3
	drainage acres	0.0	0.0	288.1	0.0	0.0	288.1
Filtering Practices	# of BMPs	0	0	6	0	0	6
	drainage acres	0.0	0.0	7.4	0.0	0.0	7.4
Green Roof/ Rainwater Harvesting	# of BMPs	41	66	829	0	7	836
	drainage acres	0.4	0.6	108.3	0.0	0.4	108.7
Infiltration Practices	# of BMPs	0	0	48	0	0	48
	drainage acres	0.0	0.0	16.3	0.0	0.0	16.3
Permeable Pavement	# of BMPs	41	25	264	0	8	272
	drainage acres	1.0	0.7	45.0	0.0	0.4	45.4
Vegetated Open Channels	# of BMPs	0	0	241	0	0	241
	drainage acres	0.0	0.0	309.0	0.0	0.0	309.0
Wet Ponds and Wetlands	# of BMPs	0	0	2	0	0	2
	drainage acres	0.0	0.0	260.5	0.0	0.0	260.5
BMP Conversion	# of BMPs	2	1	63	7	13	83
	drainage acres	46.3	9.24	6,272.6	410.0	330.3	6,602.9
Alternative Practices							
Urban Nutrient Management[1]	drainage acres	77,256.4	77,256.4	77,256.4	0.0	0.0	77,256.4

BMP	Unit	FY22	FY23	FY23 Progress	Planned Through FY2025	Planned FY2026-2027	Total
Urban Stream Restoration	# of BMPs	1	0	23	4	4	31
	linear feet	2,525	0.0	57,457.8	8,849	8,525.0	74,831.8
Outfall Stabilization	# of BMPs	0	2	34	1	4	39
	linear feet	0.0	364.0	3,181.0	190.0	2,805.0	6,176.0
Inlet/Storm Drain Cleaning[2]	material removed (lbs)	45,920.0	83,240.0	83,240.0	0	64,580.0	64,580.0
Street Sweeping[2]	miles swept	221.9	335.2	335.2	0.0	335.2	335.2
Land Use Conversion							
Impervious Surface Reduction	# of BMPs	5	6	94	0	6	100
	acres converted	0.04	0.1	14.9	0.0	0.06	15.0
Forest Planting	# of BMPs	0	0	64	0	0	64
	acres converted	0.0	0.0	65.7	0.0	0.0	65.7
Urban Tree Canopy Planting	# of BMPs	1,713	3,708	11,379	0	3,000	14,379
	acres converted	17.1	37.1	113.8	0.0	30	143.8
Street Trees	# of BMPs	1,670	2,264	9,446	0	1,500	10,946
	acres converted	16.7	22.6	181.4	0.0	15.0	196.4
Conservation Landscaping	# of BMPs	93	106	221	0	12	233
	acres converted	1.7	1.9	4.0	0.0	0.2	4.2

[1]Urban Nutrient Management data comes from a statewide number of acres provided to MDE by Maryland Department of Agriculture. These acres are distributed by the CBP WM P6 to County/watershed implementation levels (2021 Progress CAST scenario).

[2]Annual BMP.

7.2 Load Reductions

Table 7-2 presents the TIPP modeling results for pollutant reductions achieved annually and the cumulative progress for both FY22 and FY23 reporting years, reductions from planned BMPs, and total reductions (sum of reductions associated with FY23 progress and planned BMPs) for each TN, TP, and TSS local TMDL SW-WLA in the Chesapeake Bay watershed. Planned BMP reductions and total implementation are presented through the 2025 Bay TMDL target year and through 2027, the last year of the County's current MS4 permit.

Although additional BMP implementation occurred throughout the County in FY23, as shown in Table 7-1, progress results in Table 7-2 show a slight decrease in TP and TSS cumulative progress reductions in FY23 when compared to FY22. The higher TP and TSS reductions observed in FY22 is attributed to more street sweeping and inlet/storm drain cleaning throughout the County during the FY22 reporting year. Since street sweeping and inlet/storm drain cleaning are annual practices, the same level of implementation must be maintained annually for the County to credit the same level of reductions.

Table 7-2: Progress and Planned Reductions for the Chesapeake Bay TMDL in Montgomery County's Portion of the Chesapeake Bay Watershed

	Chesapeake Bay TMDL		
	TN EOT lbs/yr	TP EOT lbs/yr	TSS EOT lbs/yr
Target Reductions			
Target % Reduction	17.5%	27.8%	n/a
Target Reduction	143,224	24,039	n/a
Target Load (SW-WLA)	675,667	62,339	n/a
FY22 Annual Restoration Reductions			
FY22 Annual Restoration Reduction from 7/1/2021 – 6/30/2022	33,499	2,972	221,217
FY22 Annual Restoration % Reduction from 7/1/2021 – 6/30/2022	4.1%	3.4%	0.1%
FY22 Cumulative Progress Reductions			
FY22 Cumulative Progress Reduction through 6/30/2022	46,014	6,721	10,995,957
FY22 Progress % Reduction through 6/30/2022	5.6%	7.8%	7.0%
FY23 Annual Restoration Reductions			
FY23 Annual Restoration Reduction from 7/1/2022 – 6/30/2023	33,794	2,997	260,238
FY23 Annual Restoration % Reduction from 7/1/2022 – 6/30/2023	4.1%	3.5%	0.2%
FY23 Cumulative Progress Reductions			
FY23 Cumulative Progress Reduction through 6/30/2023	46,383	6,683	10,761,723
FY23 Progress % Reduction through 6/30/2023	5.7%	7.7%	6.9%
Planned Restoration Reductions			
Planned Through 2025 Reduction	1,067	602	1,330,346
Planned Through 2025 % Reduction	0.1%	0.7%	0.9%
Planned Through 2027 Reduction	1,040	684	1,802,207
Planned Through 2027 % Reduction	0.1%	0.8%	1.2%
Total Implementation (Cumulative Progress + Planned Restoration)			
Total Implementation Through 2025 Reductions	47,450	7,285	12,092,070
Total Implementation Through 2025 % Reduction	5.8%	8.4%	7.7%
Total Implementation Through 2027 Reductions	48,490	7,969	13,894,277
Total Implementation Through 2027 % Reduction	5.9%	9.2%	8.9%

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Appendix A: Future Implementation Project List

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NE Branch	Conversion	Extended Detention Structure, Wet	DA Acres	28.47	In Design	2027
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	16.1	In Design	2027
Anacostia NE Branch	Restoration	Conservation Landscape	Acres	0.002	Planned	2026
Anacostia NE Branch	Restoration	Street Tree	Acres	0.59	Planned	2026
Anacostia NE Branch	Restoration	Urban Tree Canopy	Acres	2.65	Planned	2026
Anacostia NE Branch	Restoration	Bioretention	Acres	1.39	Planned	2027
Anacostia NE Branch	Restoration	Permeable Pavements	Acres	0.006	Planned	2026
Anacostia NE Branch	Restoration	Rainwater Harvesting	Acres	0.035	Planned	2026
Anacostia NE Branch	Conversion	Bioretention	DA Acres	4.60	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	1.67	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	2.61	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	3.70	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	5.50	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	3.78	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	6.29	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	6.17	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	2.55	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	3.41	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	9.23	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	4.82	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	6.59	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	5.98	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	3.52	To be determined	To be determined
Anacostia NE Branch	Conversion	Bioretention	DA Acres	3.31	To be determined	To be determined
Anacostia NE Branch	Conversion	Extended Detention Structure, Wet	DA Acres	21.30	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	22.57	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	16.46	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	13.57	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	18.77	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	17.98	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	16.19	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	17.16	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	30.62	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	44.77	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	23.85	To be determined	To be determined
Anacostia NE Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	23.40	To be determined	To be determined
Anacostia NE Branch	Conversion	Submerged Gravel Wetlands	DA Acres	20.21	To be determined	To be determined
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	0.80	To be determined	To be determined
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	1.20	To be determined	To be determined
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	4.40	To be determined	To be determined
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	0.30	To be determined	To be determined
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	0.90	To be determined	To be determined
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	0.90	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NE Branch	Conversion	Underground Filter	DA Acres	2.60	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	1,013.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	180.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	4872.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	3100.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	2826.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	2771.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	181.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	260.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	60.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	6089.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	1650.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	2390.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	2009.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	1705.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	0.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	0.50	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	0.70	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	0.80	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	0.80	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	1.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	1.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	1.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	1.60	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	2.80	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	1.90	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	2.10	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	2.20	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	2.50	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	3.50	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NE Branch	Restoration	Bioretention	DA Acres	3.50	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	4.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	5.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	12.22	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	9.20	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	7.20	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	8.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	6.80	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	11.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	14.30	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	20.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Bioretention	DA Acres	27.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Micro-Bioretention	DA Acres	7.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Micro-Bioretention	DA Acres	3.60	To be determined	To be determined
Anacostia NE Branch	Restoration	Micro-Bioretention	DA Acres	34.20	To be determined	To be determined
Anacostia NE Branch	Restoration	Bio-Swale	DA Acres	2.70	To be determined	To be determined
Anacostia NE Branch	Restoration	Bio-Swale	DA Acres	0.80	To be determined	To be determined
Anacostia NE Branch	Restoration	Bio-Swale	DA Acres	2.90	To be determined	To be determined
Anacostia NE Branch	Restoration	Sand Filter	DA Acres	1.90	To be determined	To be determined
Anacostia NE Branch	Restoration	Sand Filter	DA Acres	2.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Sand Filter	DA Acres	2.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Green Roof - Extensive	DA Acres	8.40	To be determined	To be determined
Anacostia NE Branch	Restoration	Green Roof - Extensive	DA Acres	2.10	To be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	0.50	To be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	0.60	To be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	1.80	To be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	0.70	To be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	1.00	To be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	1.40	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NE Branch	Restoration	Stream Restoration	Linear Ft	19,824.00	Additional to be determined	To be determined
Anacostia NE Branch	Restoration	Forest Planting	Acres	375.00	Additional to be determined	To be determined
Anacostia NE Branch	Restoration	Riparian Forest Planting	Acres	269.00	Additional to be determined	To be determined
Anacostia NE Branch	Restoration	Urban Tree Canopy	Acres	10.00	Additional to be determined	To be determined
Anacostia NE Branch	Restoration	New Stormwater - RR	DA Acres	369.55	Additional to be determined	To be determined
Anacostia NE Branch	Restoration	New Stormwater - ST	DA Acres	482.8	Additional to be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	22.60	In Design	2025
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1725.00	In Design	2025
Anacostia NW Branch	Restoration	Bioretention	Acres	0.71	Planned	2027
Anacostia NW Branch	Restoration	Bioretention	Acres	0.51	Planned	2027
Anacostia NW Branch	Restoration	Permeable Pavements	Acres	0.10	Planned	2026
Anacostia NW Branch	Restoration	Rainwater Harvesting	Acres	0.06	Planned	2026
Anacostia NW Branch	Restoration	Rain Gardens	Acres	0.12	Planned	2026
Anacostia NW Branch	Restoration	Conservation Landscape	Acres	0.06	Planned	2026
Anacostia NW Branch	Restoration	Impervious Surface Reduction	Acres	0.02	Planned	2026
Anacostia NW Branch	Restoration	Street Tree	Acres	3.09	Planned	2026
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2050.00	Planned	2026
Anacostia NW Branch	Restoration	Urban Tree Canopy	Acres	5.74	Planned	2026
Anacostia NW Branch	Conversion	Bioretention	DA Acres	75.78	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	33.96	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	31.60	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Restoration	Bioretention	DA Acres	13.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	15.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	13.50	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	26.90	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	20.67	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	16.00	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	25.23	To be determined	To be determined
Anacostia NW Branch	Restoration	Green Roof - Extensive	DA Acres	14.50	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	24.98	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	8.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	11.30	To be determined	To be determined
Anacostia NW Branch	Restoration	Bio-Swale	DA Acres	9.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	11.00	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	9.18	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	8.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	12.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	11.90	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	6.43	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	7.08	To be determined	To be determined
Anacostia NW Branch	Conversion	Extended Detention Structure, Wet	DA Acres	8.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	4.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	5.70	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	9.36	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	13.94	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Restoration	Green Roof - Extensive	DA Acres	4.80	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	18.88	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	7.90	To be determined	To be determined
Anacostia NW Branch	Restoration	Green Roof - Extensive	DA Acres	6.70	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	12.82	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	37.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.80	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	22.83	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	6.44	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	7.28	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	4.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	4.30	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.40	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.91	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	6.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Permeable Pavements	DA Acres	4.10	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	20.81	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	11.09	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.20	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.20	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.53	To be determined	To be determined
Anacostia NW Branch	Restoration	Rain Gardens	DA Acres	3.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.88	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	23.93	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	3.40	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	7.44	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.50	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.39	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	23.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.70	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	5.82	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	6.48	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	10.05	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	8.35	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	5.04	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.60	To be determined	To be determined
Anacostia NW Branch	Conversion	Retention Pond (Wet Pond)	DA Acres	11.13	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.30	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.90	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	8.58	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	5.57	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.67	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.80	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.80	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.00	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	4.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.88	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.67	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.38	To be determined	To be determined
Anacostia NW Branch	Restoration	Bio-Swale	DA Acres	1.80	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	3.89	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.30	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.60	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.99	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.03	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.60	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	4.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.58	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.30	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.40	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.42	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.99	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.20	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.20	To be determined	To be determined
Anacostia NW Branch	Conversion	Bioretention	DA Acres	2.28	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	0.90	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	4.30	To be determined	To be determined
Anacostia NW Branch	Restoration	Bio-Swale	DA Acres	1.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	1.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	2.69	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	0.95	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Restoration	Bioretention	DA Acres	1.30	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	6.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	0.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	0.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	0.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	0.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Bioretention	DA Acres	0.35	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	2.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Micro-Bioretention	DA Acres	1.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	700.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1000.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	360.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	700.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	385.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	900.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	689.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	900.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	600.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	3300.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2832.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2800.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	489.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	500.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	300.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	300.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	512.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	519.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	5776.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	320.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2583.00	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	500.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	6176.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	325.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	6026.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1330.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1681.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1600.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1540.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1088.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2200.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2200.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	2100.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	1819.00	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	0.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	3.60	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	3.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	9.40	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	2.20	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	2.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	3.20	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	7.10	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	1.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	2.50	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	5.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	0.70	To be determined	To be determined
Anacostia NW Branch	Restoration	Stream Restoration	Linear Ft	69,384.00	Additional to be determined	To be determined
Anacostia NW Branch	Restoration	Forest Planting	Acres	750.00	Additional to be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Anacostia NW Branch	Restoration	Riparian Forest Planting	Acres	538.00	Additional to be determined	To be determined
Anacostia NW Branch	Restoration	Urban Tree Canopy	Acres	10.00	Additional to be determined	To be determined
Anacostia NW Branch	Restoration	New Stormwater - RR	DA Acres	899.50	Additional to be determined	To be determined
Anacostia NW Branch	Restoration	New Stormwater - ST	DA Acres	2,006.40	Additional to be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	78.59	In Design	2027
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	1193.00	In Design	2026
Cabin John Creek	Restoration	Rain Gardens	Acres	0.07	Planned	2026
Cabin John Creek	Restoration	Permeable Pavements	Acres	0.02	Planned	2026
Cabin John Creek	Restoration	Rainwater Harvesting	Acres	0.03	Planned	2026
Cabin John Creek	Restoration	Conservation Landscape	Acres	0.03	Planned	2026
Cabin John Creek	Restoration	Impervious Surface Reduction	Acres	0.00	Planned	2026
Cabin John Creek	Restoration	Street Tree	Acres	1.43	Planned	2026
Cabin John Creek	Restoration	Urban Tree Canopy	Acres	2.42	Planned	2026
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	0.59	To be determined	To be determined
Cabin John Creek	Restoration	Impervious Surface Reduction	DA Acres	0.02	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	0.06	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	0.09	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	0.13	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	0.69	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	0.62	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	0.28	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	1.56	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	2.30	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	0.44	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	0.86	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	2.30	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	1.84	To be determined	To be determined
Cabin John Creek	Restoration	Rain Gardens	DA Acres	0.51	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	0.57	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	2.07	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	1.42	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	1.81	To be determined	To be determined
Cabin John Creek	Restoration	Bio-Swale	DA Acres	2.92	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	1.47	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	3.05	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	2.59	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	2.44	To be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	27.86	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	3.92	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	3.79	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	4.00	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	3.54	To be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	10.58	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	13.09	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	5.27	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	4.40	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	5.00	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	18.14	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	4.36	To be determined	To be determined
Cabin John Creek	Restoration	Bioretention	DA Acres	12.63	To be determined	To be determined
Cabin John Creek	Restoration	Wet Pond - Wetland	DA Acres	12.76	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Cabin John Creek	Restoration	Bioretention	DA Acres	12.70	To be determined	To be determined
Cabin John Creek	Restoration	Wet Pond - Wetland	DA Acres	13.54	To be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	15.45	To be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	20.89	To be determined	To be determined
Cabin John Creek	Restoration	Wet Pond - Wetland	DA Acres	25.25	To be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	14.62	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	9.56	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	9.87	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	9.41	To be determined	To be determined
Cabin John Creek	Restoration	Wet Pond - Wetland	DA Acres	32.35	To be determined	To be determined
Cabin John Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	15.86	To be determined	To be determined
Cabin John Creek	Restoration	Dry Channel Regenerative Step Pool Stormwater Conveyance System	DA Acres	45.00	To be determined	To be determined
Cabin John Creek	Conversion	Bioretention	DA Acres	8.34	To be determined	To be determined
Cabin John Creek	Restoration	Wet Pond - Wetland	DA Acres	26.40	To be determined	To be determined
Cabin John Creek	Restoration	Micro-Bioretention	DA Acres	30.97	To be determined	To be determined
Cabin John Creek	Restoration	Wet Pond - Wetland	DA Acres	41.32	To be determined	To be determined
Cabin John Creek	Conversion	Extended Detention Structure, Wet	DA Acres	144.41	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	647.26	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	879.25	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	892.10	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	1021.15	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	431.91	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	802.96	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	514.36	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	580.56	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	346.47	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	1907.77	To be determined	To be determined
Cabin John Creek	Restoration	Stream Restoration	Linear Ft	1,416.0	Additional TBD	To be determined
Cabin John Creek	Restoration	Forest Planting	Acres	150.00	Additional TBD	To be determined
Cabin John Creek	Restoration	Riparian Forest Planting	Acres	80.70	Additional TBD	To be determined
Cabin John Creek	Restoration	Urban Tree Canopy	Acres	10.00	Additional TBD	To be determined
Cabin John Creek	Restoration	New Stormwater - RR	DA Acres	68.65	Additional TBD	To be determined
Cabin John Creek	Restoration	New Stormwater - ST	DA Acres	54.88	Additional TBD	To be determined
Lower Monocacy River	Restoration	Rain Gardens	Acres	0.18	Planned	2026
Lower Monocacy River	Restoration	Street Tree	Acres	0.02	Planned	2026
Lower Monocacy River	Restoration	Urban Tree Canopy	Acres	0.38	Planned	2026
Lower Monocacy River	Restoration	Stream Restoration	Linear Ft	8,496.00	Additional to be determined	To be determined
Lower Monocacy River	Restoration	Forest Planting	Acres	125.00	Additional to be determined	To be determined
Lower Monocacy River	Restoration	Riparian Forest Planting	Acres	107.60	Additional to be determined	To be determined
Lower Monocacy River	Restoration	Urban Tree Canopy	Acres	10.00	Additional to be determined	To be determined
Lower Monocacy River	Restoration	New Stormwater - RR	DA Acres	150.65	Additional to be determined	To be determined
Lower Monocacy River	Restoration	New Stormwater - ST	DA Acres	453.44	Additional to be determined	To be determined
Potomac River Mo Cnty	Restoration	Rain Gardens	Acres	0.01	Planned	2026
Potomac River Mo Cnty	Restoration	Rain Gardens	Acres	0.01	Planned	2026
Potomac River Mo Cnty	Restoration	Rainwater Harvesting	Acres	0.01	Planned	2026
Potomac River Mo Cnty	Restoration	Rainwater Harvesting	Acres	0.02	Planned	2026
Potomac River Mo Cnty	Restoration	Permeable Pavements	Acres	0.03	Planned	2026

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Potomac River Mo Cnty	Restoration	Permeable Pavements	Acres	0.06	Planned	2026
Potomac River Mo Cnty	Conversion	Submerged Gravel Wetlands	Acres	42.64	Planned	2026
Potomac River Mo Cnty	Restoration	Street Tree	Acres	0.77	Planned	2026
Potomac River Mo Cnty	Restoration	Street Tree	Acres	0.97	Planned	2026
Potomac River Mo Cnty	Restoration	Urban Tree Canopy	Acres	0.16	Planned	2026
Potomac River Mo Cnty	Restoration	Urban Tree Canopy	Acres	0.38	Planned	2026
Potomac River Mo Cnty	Restoration	Urban Tree Canopy	Acres	0.59	Planned	2026
Potomac River Mo Cnty	Restoration	Urban Tree Canopy	Acres	1.95	Planned	2026
Potomac River Mo Cnty	Restoration	Outfall Stabilization	Linear Ft	300.00	Planned	2026
Potomac River Mo Cnty	Restoration	Conservation Landscape	Acres	0.00	Planned	2026
Potomac River Mo Cnty	Restoration	Impervious Surface Reduction	Acres	0.01	Planned	2026
Potomac River Mo Cnty	Restoration	Impervious Surface Reduction	Acres	0.01	Planned	2026
Potomac River Mo Cnty	Restoration	Conservation Landscape	Acres	0.02	Planned	2026
Potomac River Mo Cnty	Restoration	Conservation Landscape	Acres	0.02	Planned	2026
Potomac River Mo Cnty	Restoration	Green Roof - Extensive	DA Acres	0.21	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	1.32	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	7.45	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	2.22	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	1.77	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	1.90	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Bioretention	DA Acres	1.86	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	3.32	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	3.65	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	7.74	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	2.29	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	4.19	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	4.53	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	5.95	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Micro-Bioretention	DA Acres	3.56	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Micro-Bioretention	DA Acres	7.00	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Retention Pond (Wet Pond)	DA Acres	13.79	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	8.58	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Bioretention	DA Acres	5.51	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Retention Pond (Wet Pond)	DA Acres	18.26	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Retention Pond (Wet Pond)	DA Acres	29.49	To be determined	To be determined
Potomac River Mo Cnty	Conversion	Shallow Marsh	DA Acres	199.13	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	487.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	402.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	742.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	780.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	767.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	5690.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	4050.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	3930.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	3692.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	2822.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	275.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	594.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1574.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1569.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1464.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1382.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1690.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1206.00	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1204.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	626.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1847.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1863.00	To be determined	To be determined
Potomac River Mo Cnty	Restoration	Stream Restoration	Linear Ft	1408.50	Additional to be determined	To be determined
Potomac River Mo Cnty	Restoration	Forest Planting	Acres	800.00	Additional to be determined	To be determined
Potomac River Mo Cnty	Restoration	Riparian Tree Planting	Acres	538.00	Additional to be determined	To be determined
Potomac River Mo Cnty	Restoration	Urban Tree Canopy	Acres	10.00	Additional to be determined	To be determined
Potomac River Mo Cnty	Restoration	New Stormwater - RR	DA Acres	116.45	Additional to be determined	To be determined
Potomac River Mo Cnty	Restoration	New Stormwater - ST	DA Acres	468.00	Additional to be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	45.11	In Design	2026
Rock Creek	Restoration	Stream Restoration	Linear Ft	5648.00	In Design	2025
Rock Creek	Restoration	Rain Gardens	Acres	0.15	Planned	2026
Rock Creek	Restoration	Permeable Pavements	Acres	0.004	Planned	2026
Rock Creek	Restoration	Permeable Pavements	Acres	0.15	Planned	2026
Rock Creek	Restoration	Rainwater Harvesting	Acres	0.22	Planned	2026
Rock Creek	Restoration	Bioretention	Acres	1.45	Planned	2027
Rock Creek	Restoration	Dry Channel Regenerative Step Pool Stormwater Conveyance System	Acres	67.70	Planned	2027
Rock Creek	Conversion	Extended Detention Structure, Wet	Acres	63.25	Planned	2025

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Conversion	Submerged Gravel Wetlands	Acres	32.11	Planned	2026
Rock Creek	Restoration	Conservation Landscape	Acres	0.001	Planned	2026
Rock Creek	Restoration	Conservation Landscape	Acres	0.07	Planned	2026
Rock Creek	Restoration	Impervious Surface Reduction	Acres	0.00	Planned	2026
Rock Creek	Restoration	Impervious Surface Reduction	Acres	0.02	Planned	2026
Rock Creek	Restoration	Stream Restoration	Linear Ft	4775.00	Planned	2026
Rock Creek	Restoration	Street Tree	Acres	0.01	Planned	2026
Rock Creek	Restoration	Street Tree	Acres	4.99	Planned	2026
Rock Creek	Restoration	Urban Tree Canopy	Acres	0.04	Planned	2026
Rock Creek	Restoration	Urban Tree Canopy	Acres	7.19	Planned	2026
Rock Creek	Restoration	Micro-Bioretention	DA Acres	67.92	Under Construction	2024
Rock Creek	Restoration	Outfall Stabilization	Linear Ft	190.00	Under Construction	2024
Rock Creek	Restoration	Impervious Surface Reduction	DA Acres	0.03	To be determined	To be determined
Rock Creek	Restoration	Impervious Surface Reduction	DA Acres	0.03	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.04	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.03	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.52	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.18	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.50	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.10	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.22	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.26	To be determined	To be determined
Rock Creek	Restoration	Permeable Pavements	DA Acres	0.08	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Restoration	Bioretention	DA Acres	0.14	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.24	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.20	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.28	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.38	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.13	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.25	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.26	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.18	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.20	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.17	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.32	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.25	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.24	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.53	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.18	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	0.57	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.51	To be determined	To be determined
Rock Creek	Restoration	Impervious Surface Reduction	DA Acres	0.18	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	0.37	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.24	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	0.38	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.65	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.78	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.20	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.21	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	0.34	To be determined	To be determined
Rock Creek	Restoration	Grass Swale	DA Acres	0.45	To be determined	To be determined
Rock Creek	Restoration	Permeable Pavements	DA Acres	0.25	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Restoration	Bioretention	DA Acres	0.70	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.25	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.29	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.24	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.23	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.66	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.68	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.24	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.28	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.25	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.28	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.25	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.37	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.52	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.36	To be determined	To be determined
Rock Creek	Restoration	Permeable Pavements	DA Acres	0.31	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.34	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.69	To be determined	To be determined
Rock Creek	Restoration	Impervious Surface Reduction	DA Acres	0.28	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.69	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.70	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.43	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.98	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.33	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.39	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.37	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	1.06	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.55	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.11	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Restoration	Bioretention	DA Acres	0.45	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.69	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.59	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.38	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.52	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.99	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	0.84	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.58	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.60	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.48	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	0.96	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.35	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	0.95	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.73	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.54	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.57	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	1.10	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	1.40	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.60	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.67	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.97	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	0.62	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	1.21	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	0.72	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	1.14	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	0.83	To be determined	To be determined
Rock Creek	Restoration	Bio-Swale	DA Acres	3.13	To be determined	To be determined
Rock Creek	Restoration	Sand Filter	DA Acres	1.06	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	3.18	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	1.65	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Conversion	Bioretention	DA Acres	1.86	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	1.58	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	1.70	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.83	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	2.26	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.93	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	2.88	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.53	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	2.06	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.01	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	5.43	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	3.46	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	3.64	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	5.24	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.92	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	1.58	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	2.30	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.86	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	1.73	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	5.51	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	2.29	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	2.44	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	2.41	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	3.63	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	3.04	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	2.84	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	2.63	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	5.15	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	7.78	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.45	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Restoration	Bioretention	DA Acres	2.41	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	15.70	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.73	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	8.25	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	8.11	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	6.07	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.60	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	10.40	To be determined	To be determined
Rock Creek	Restoration	Micro-Bioretention	DA Acres	6.23	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.29	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	6.58	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	4.65	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	7.91	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	6.60	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	5.21	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	11.43	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	7.57	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	7.72	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	12.79	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	6.64	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	5.65	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	17.38	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	40.95	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	14.24	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	9.98	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	5.09	To be determined	To be determined
Rock Creek	Restoration	Underground Filter	DA Acres	5.75	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	7.44	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	26.87	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	25.39	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	16.01	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	15.81	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	14.85	To be determined	To be determined
Rock Creek	Conversion	Bioretention	DA Acres	9.84	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	33.29	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	20.43	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	20.86	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	26.71	To be determined	To be determined
Rock Creek	Restoration	Bioretention	DA Acres	9.30	To be determined	To be determined
Rock Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	24.45	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	46.08	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	49.93	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	121.86	To be determined	To be determined
Rock Creek	Conversion	Extended Detention Structure, Wet	DA Acres	290.87	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	775.13	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	781.03	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	921.97	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	418.93	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	828.59	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	899.00	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	700.55	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	337.01	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	2829.33	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	2641.16	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	581.97	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	511.19	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	436.16	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	305.21	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	715.89	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	507.70	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	626.18	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	1634.69	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	1425.92	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	1148.70	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	1108.18	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	1093.74	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	348.18	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	2049.36	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rock Creek	Restoration	Stream Restoration	Linear Feet	1955.70	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	339.29	To be determined	To be determined
Rock Creek	Restoration	Stream Restoration	Linear Feet	1416.00	Additional to be determined	To be determined
Rock Creek	Restoration	Forest Planting	Acres	250.00	Additional to be determined	To be determined
Rock Creek	Restoration	Riparian Forest Planting	Acres	134.50	Additional to be determined	To be determined
Rock Creek	Restoration	Urban Tree Canopy	Trees planted	2.50	Additional to be determined	To be determined
Rock Creek	Restoration	Bioretention/Rain Gardens	DA Acres	119.85	Additional to be determined	To be determined
Rock Creek	Restoration	Pond/Wetland/Surface Sand Filter	DA Acres	169.44	Additional to be determined	To be determined
Rocky Gorge Reservoir	Restoration	Rain Gardens	DA Acres	0.02	Planned	2026
Rocky Gorge Reservoir	Restoration	Permeable Pavements	DA Acres	0.01	Planned	2026
Rocky Gorge Reservoir	Restoration	Rainwater Harvesting	DA Acres	0.01	Planned	2026
Rocky Gorge Reservoir	Restoration	Conservation Landscape	DA Acres	0.00	Planned	2026
Rocky Gorge Reservoir	Restoration	Street Tree	Acres	0.50	Planned	2026
Rocky Gorge Reservoir	Restoration	Urban Tree Canopy	Acres	1.23	Planned	2026
Rocky Gorge Reservoir	Restoration	Bioretention	DA Acres	0.80	To be determined	To be determined
Rocky Gorge Reservoir	Restoration	Bioretention	DA Acres	1.20	To be determined	To be determined
Rocky Gorge Reservoir	Conversion	Retention Pond (Wet Pond)	DA Acres	11.31	To be determined	To be determined
Rocky Gorge Reservoir	Restoration	Stream Restoration	Linear Feet	2832.00	Additional to be determined	To be determined
Rocky Gorge Reservoir	Restoration	Reforestation	Acres	321.05	Additional to be determined	To be determined
Rocky Gorge Reservoir	Restoration	Reforestation	Trees planted	2.50	Additional to be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Rocky Gorge Reservoir	Restoration	Bioretention/Rain Gardens	DA Acres	72.95	Additional to be determined	To be determined
Rocky Gorge Reservoir	Restoration	Pond/Wetland/Surface Sand Filter	DA Acres	214.08	Additional to be determined	To be determined
Triadelphia Reservoir	Restoration	Street Tree	Acres	0.002	Planned	2026
Triadelphia Reservoir	Restoration	Street Tree	Acres	0.05	Planned	2026
Triadelphia Reservoir	Restoration	Urban Tree Canopy	Acres	0.05	Planned	2026
Triadelphia Reservoir	Restoration	Urban Tree Canopy	Acres	0.07	Planned	2026
Triadelphia Reservoir	Restoration	Riparian Forest Planting	Acres	10.76	Additional to be determined	To be determined
Triadelphia Reservoir	Restoration	Urban Tree Canopy	Trees planted	1.75	Additional to be determined	To be determined
Triadelphia Reservoir	Restoration	Bioretention/Rain Gardens	DA Acres	14.50	Additional to be determined	To be determined
Triadelphia Reservoir	Restoration	Pond/Wetland	DA Acres	25.28	Additional to be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	1.32	In Design	2027
Seneca Creek	Conversion	Bioretention	DA Acres	4.55	In Design	2027
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	22.27	In Design	2026
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	85.23	In Design	2025
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	42.26	In Design	2025
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	15.70	In Design	2027
Seneca Creek	Restoration	Stream Restoration	Linear Feet	896.00	In Design	2025
Seneca Creek	Restoration	Rain Gardens	Acres	0.01	Planned	2026
Seneca Creek	Conversion	Submerged Gravel Wetlands	Acres	8.13	Planned	2026

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Seneca Creek	Conversion	Submerged Gravel Wetlands	Acres	10.18	Planned	2026
Seneca Creek	Conversion	Submerged Gravel Wetlands	Acres	25.15	Planned	2026
Seneca Creek	Restoration	Street Tree	Acres	0.01	Planned	2026
Seneca Creek	Restoration	Street Tree	Acres	0.02	Planned	2026
Seneca Creek	Restoration	Street Tree	Acres	0.82	Planned	2026
Seneca Creek	Restoration	Street Tree	Acres	1.73	Planned	2026
Seneca Creek	Restoration	Urban Tree Canopy	Acres	0.05	Planned	2026
Seneca Creek	Restoration	Urban Tree Canopy	Acres	0.66	Planned	2026
Seneca Creek	Restoration	Urban Tree Canopy	Acres	1.23	Planned	2026
Seneca Creek	Restoration	Urban Tree Canopy	Acres	5.21	Planned	2026
Seneca Creek	Restoration	Outfall Stabilization	Linear Feet	740.00	Planned	2026
Seneca Creek	Restoration	Outfall Stabilization	Linear Feet	1240.00	Planned	2026
Seneca Creek	Restoration	Outfall Stabilization	Linear Feet	525.00	Planned	2026
Seneca Creek	Restoration	Stream Restoration	Linear Feet	507.00	Planned	2026
Seneca Creek	Restoration	Conservation Landscape	Acres	0.00	Planned	2026
Seneca Creek	Restoration	Conservation Landscape	Acres	0.00	Planned	2026
Seneca Creek	Restoration	Conservation Landscape	Acres	0.00	Planned	2026
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	114.00	Under Construction	2024
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	23.92	Under Construction	2024
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	58.78	Under Construction	2024
Seneca Creek	Restoration	Stream Restoration	Linear Feet	580.00	Under Construction	2024
Seneca Creek	Conversion	Bioretention	DA Acres	3.53	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	3.12	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	4.35	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Seneca Creek	Conversion	Bioretention	DA Acres	7.84	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	8.50	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	3.37	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	4.94	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	3.26	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	5.62	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	5.77	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	8.55	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	9.45	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	9.22	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	4.88	To be determined	To be determined
Seneca Creek	Restoration	Bioretention	DA Acres	4.98	To be determined	To be determined
Seneca Creek	Conversion	Bioretention	DA Acres	5.34	To be determined	To be determined
Seneca Creek	Conversion	Bio-Swale	DA Acres	6.04	To be determined	To be determined
Seneca Creek	Conversion	Detention Structure (Dry Pond)	DA Acres	28.70	To be determined	To be determined
Seneca Creek	Conversion	Detention Structure (Dry Pond)	DA Acres	35.50	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Dry	DA Acres	6.33	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	10.30	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	49.33	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	69.99	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	54.72	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	69.82	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	80.71	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	113.19	To be determined	To be determined
Seneca Creek	Conversion	Extended Detention Structure, Wet	DA Acres	377.65	To be determined	To be determined
Seneca Creek	Conversion	Infiltration Basin	DA Acres	10.83	To be determined	To be determined
Seneca Creek	Restoration	Micro-Bioretention	DA Acres	2.73	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.06	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.18	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.44	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.55	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	1.02	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.70	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.74	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	0.98	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	1.34	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	1.32	To be determined	To be determined
Seneca Creek	Restoration	Other	DA Acres	1.38	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	16.09	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	16.18	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	26.12	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	10.45	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	12.24	To be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	11.67	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	15.73	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	17.36	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	30.41	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	26.94	To be determined	To be determined
Seneca Creek	Conversion	Retention Pond (Wet Pond)	DA Acres	37.31	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	1300.00	To be determined	To be determined
Seneca Creek	Conversion	Submerged Gravel Wetlands	DA Acres	4.95	To be determined	To be determined
Seneca Creek	Conversion	Submerged Gravel Wetlands	DA Acres	10.75	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	700.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	3569.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	2764.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	2503.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	2600.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	6395.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	1264.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	2400.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	2351.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	2075.00	To be determined	To be determined
Seneca Creek	Restoration	Stream Restoration	Linear Feet	19,824.00	Additional to be determined	To be determined

8-DIGIT WATERSHED	CONSTRUCTION PURPOSE	BMP TYPE	UNIT	TREATMENT	STATUS	PROJECTED IMPL YEAR
Seneca Creek	Restoration	Forest Planting	Acres	1,000.00	Additional to be determined	To be determined
Seneca Creek	Restoration	Riparian Forest Planting	Acres	739.75	Additional to be determined	To be determined
Seneca Creek	Restoration	Urban Tree Canopy	Trees planted	10.00	Additional to be determined	To be determined
Seneca Creek	Restoration	Bioretention/Rain Gardens	DA Acres	476.90	Additional to be determined	To be determined
Seneca Creek	Restoration	Pond/Wetland/Surface Sand Filter	DA Acres	592.56	Additional to be determined	To be determined

Appendix B: TIPP Excel Workbooks

Excel Files Included:

FY22 TIPPs

- MDE_TIPP_Anacostia_FY22_2023.10.02.xlsx
- MDE_TIPP_BrightonDam_FY22_2023.09.29.xlsx
- MDE_TIPP_CabinJohnCreek_FY22_2023.10.02.xlsx
- MDE_TIPP_LowerMonocacy_FY22_2023.10.02.xlsx
- MDE_TIPP_PotomacRMOCnty_FY22_2023.10.02.xlsx
- MDE_TIPP_RockCreek_FY22_2023.07.05_2023.09.29.xlsx
- MDE_TIPP_RockyGorgeReservoir_FY22_2023.09.29.xlsx
- MDE_TIPP_SenecaCreek_FY22_2023.09.29.xlsx
- ANATF_TIPP_FY2022_2023.09.15.xlsx
- PAXTF_TIPP_FY2022_2023.09.15.xlsx
- POTTF_DC_TIPP_FY2022_2023.09.15.xlsx
- POTTF_MD_TIPP_FY2022_2023.09.15.xlsx

FY23 TIPPs

- MDE_TIPP_Anacostia_FY23_2023.12.22.xlsx
- MDE_TIPP_Anacostia_FY23_2023.12.22_TPto100%.xlsx
- MDE_TIPP_Anacostia_FY23_2023.12.22_TSSto100%.xlsx
- MDE_TIPP_BrightonDam_FY23_2023.12.05.xlsx
- MDE_TIPP_CabinJohnCreek_FY23_2023.12.05.xlsx
- MDE_TIPP_LowerMonocacy_FY23_2023.12.05_TPto100%.xlsx
- MDE_TIPP_LowerMonocacy_FY23_2023.12.05.xlsx
- MDE_TIPP_PotomacRMOCnty_FY23_2023.12.05.xlsx
- MDE_TIPP_RockCreek_FY23_2023.12.05.xlsx
- MDE_TIPP_RockCreek_FY23_2023.12.05_TSSto100%.xlsx
- MDE_TIPP_RockyGorgeReservoir_FY23_2023.12.05.xlsx
- MDE_TIPP_SenecaCreek_FY23_2023.12.05.xlsx
- ANATF_TIPP_FY2023_2023.12.02.xlsx
- PAXTF_TIPP_FY2023_2023.12.02.xlsx
- POTTF_DC_TIPP_FY2023_2023.12.02.xlsx
- POTTF_MD_TIPP_FY2023_2023.12.02.xlsx