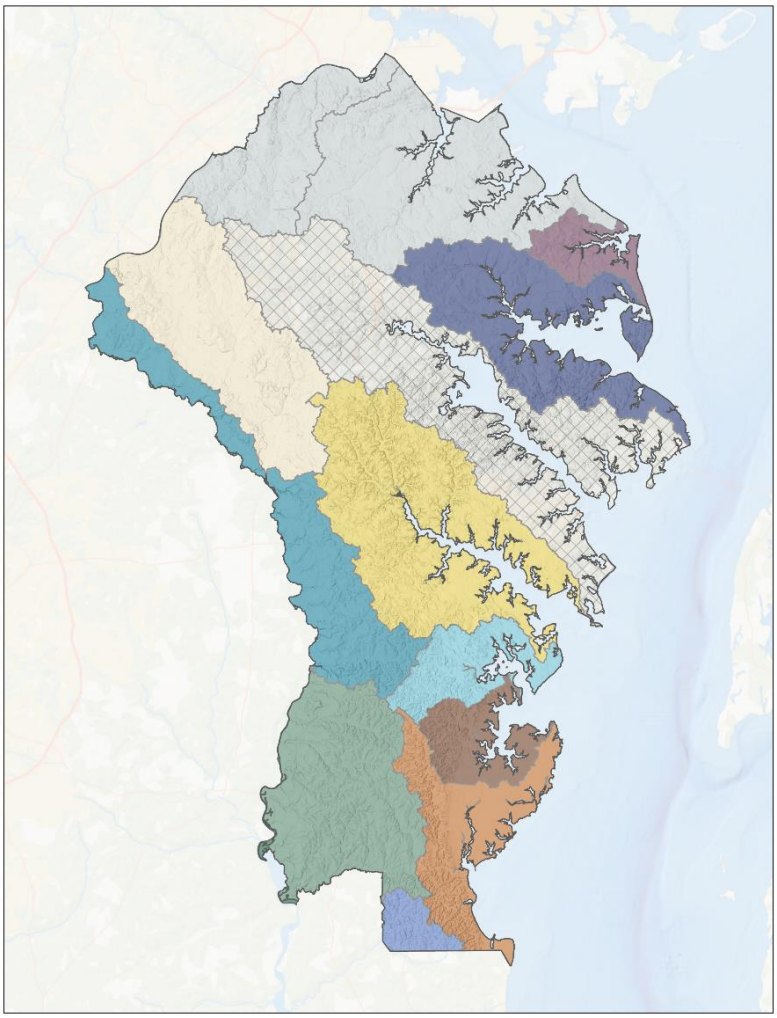
Anne Arundel Countywide TMDL Stormwater Implementation Plan

FY 24 Annual Progress Report - December 2024



Anne Arundel County Bureau of Watershed Protection & Restoration

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FY 24 Annual Progress Report

December 2024

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Bureau of Watershed Protection and Restoration

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Definitions of Key Terms

Anne Arundel County Watershed Stewards Academy	A non-profit organization that builds capacity in Anne Arundel County by training Master Watershed Stewards to help neighbors reduce pollution in our local creeks and rivers.
Backcasting	A method developed by Baltimore County and approved by Maryland Department of Environment to 'translate' historical land cover datasets to a format consistent with Phase 6 Chesapeake Bay Watershed Model land cover classes. This allows the most accurate estimation of land cover and loads at the baseline year for each TMDL and ensures baseline loads are not over or underestimated.
Baseline Load	A Baseline load is a pollutant load estimate for each TMDL watershed at baseline year conditions. Baseline loads are estimated as the sum of land use loads minus any reductions from BMPs that were installed in or before the baseline year.
Baseline Year	The baseline year is the bench mark year from which progress in reducing pollutant loads is assessed.
Bay segment	Bay segments are geographical areas of the Chesapeake Bay as defined within the Phase 5 Chesapeake Bay Model.
BMP	A watershed Best Management Practice that is used to reduce and control stormwater and associated pollution.
Chesapeake Bay Program	A regional partnership that directs and conducts the restoration of the Chesapeake Bay.

Chesapeake Bay Conservancy	A non-profit organization that works conserve and restore the natural and cultural resources of the Chesapeake Bay watershed. The Conservancy also develops geospatial datasets such as land cover.
CIP	The Capital Improvement Program of Anne Arundel County Government.
EPA	The United States Environmental Protection Agency.
Interim Programmed Reduction	Load reduction, expressed as either lbs, counts, or percent, which are achieved from BMPs that are under a design contract and have reached the 30% design stage.
MDE	The Maryland Department of the Environment.
MDNR	The Maryland Department of Natural Resources.
MS4	MS4, or Municipal Separate Storm Sewer System, is a conveyance or system of conveyances owned by a state, city, town, village, or other public entity that discharges stormwater to waters of the United States.
National Land Cover Database	Nationwide data on land cover data at a 30m resolution produced by the Multi-Resolution Land Characteristics (MRLC) Consortium.
NPDES	NPDES, or the National Pollutant Discharge Elimination System, is an EPA program that addresses water pollution by regulating point sources that discharge pollutants to waters of the United States.

Planned Reduction	Load reduction, expressed as either lbs, counts, or percent, which are achieved from BMPs that are either not under a design contract or have not yet reached the 30% design stage.
Progress	Progress, in the context of TMDLs, is the cumulative amount of pollutant reduction, measured in lbs, counts, or percent, which the County has achieved to attain a Stormwater Waste Load Allocation for a given pollutant.
Progress Reduction	Cumulative load reductions, expressed as either lbs, counts, or percent, which are achieved via stormwater BMP implementation through the end of the current fiscal year.
SW-WLA	SW-WLA, or a Stormwater Wasteload Allocation, is the maximum load of pollutants originating from the stormwater sector that is allowed to be discharged to waters of the United States.
Target Date	The target date when the Stormwater Wasteload Allocation is expected to be met.
TIPP	TIPP, or the TMDL Implementation Progress and Planning tool, is a planning tool to help estimate baseline loads and reductions from BMPs to meet stormwater waste load allocations. The TIPP tool was created by Maryland Department of the Environment.
TMDL	A TMDL, or Total Maximum Daily Load, is a calculation of the maximum amount of a pollutant that is allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards and support the waterbodies designated uses.
WIP	WIP, or Watershed Implementation Plan, is a roadmap of how a jurisdiction will achieve its waste load allocations.

I. Background

Maryland Department of Environment (MDE) issued NPDES Permit No. 20-DP-3316 to Anne Arundel County on November 5, 2021. Part IV.F of this permit requires Anne Arundel County to submit a Countywide Stormwater Total Maximum Daily Load (TMDL) Implementation Plan (Countywide Plan) that addresses all TMDLs with Stormwater Wasteload Allocations (SW-WLAs) listed in Appendix A within one year of permit issuance. The Countywide Plan represents Anne Arundel County's roadmap to achieve SW-WLAs for each TMDL, and ultimately the progress towards attaining water quality criteria ensuring that each waterbody supports its designated uses. The Countywide Plan must be approved by MDE and must annually document progress toward meeting TMDL SW-WLAs. The Countywide Plan is to be based on the Department's analyses or equivalent, and where applicable, document Anne Arundel County water quality analyses. The plan should include:

- A list of stormwater BMPs, programmatic initiatives, or alternative control practices that will be implemented to reduce pollutants for the TMDL;
- A description of the County's analyses and methods, and how they are comparable with MDE's TMDL analyses; and
- Final implementation dates and benchmarks for meeting the TMDL's applicable stormwater WLA. Once approved by the Department, any new TMDL implementation plan shall be incorporated into the Countywide Plan and subject to the annual progress report requirements under Part IV.F of the permit.

Annual progress toward meeting the TMDL SW-WLAs listed in Appendix A of the permit must be documented in the Countywide Plan and shall include:

- A summary of all completed BMPs, programmatic initiatives, alternative control practices, or other actions implemented for each TMDL stormwater WLA;
- An analysis and table summary of the net pollutant reductions achieved annually and cumulatively for each TMDL stormwater WLA;
- 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

II. Introduction

A. Chesapeake Bay TMDL and Progress Modeling Approach

The Chesapeake Bay TMDL was approved on December 29, 2010 and applies to all of Anne Arundel County. On September 15, 2011 MDE finalized its Phase II Load Allocations and on July 2, 2012 Anne Arundel County submitted its Phase II WIP to MDE. Anne Arundel County's Phase II WIP serves as the restoration plan for the SW-WLAs for each impairment addressed by the Chesapeake Bay TMDL.[1] At the time of writing this report, the final date for meeting the Chesapeake Bay TMDL SW-WLA is 2025, as set by the U.S. Environmental Protection Agency (EPA).

MDE's TIPP spreadsheet tool was used for all Chesapeake Bay TMDL progress modeling. Land cover data from the National Land Cover Database (NLCD) was used to quantify land cover acreage for the 2009 TMDL baseline year. NLCD data was used because the Chesapeake Conservancy (CC) land cover data, which reflects 2013/2014 conditions, does not reflect the baseline year land use conditions for each TMDL watershed. MS4 regulated land cover increased in many watersheds between the baseline years and 2013/2014, and therefore, relying on 2013/2014 landcover would inflate baseline year loads. The backcasting method developed by Baltimore County, and approved by MDE, resolves this issue. The backcasting method was applied to NLCD data and makes it consistent with the Phase 6 Chesapeake Bay Watershed Model land cover classes.

Backcasting was achieved by comparing 2013/2014 Chesapeake Conservancy (CC) land cover data, that was modified by MDE, to 2013 NLCD land cover data. Before backcasting, several steps were taken to preprocess both the NLCD and CC data. Firstly, MDE's classification of 'Mixed Open/Agriculture' was disaggregated into 'Mixed Open' and 'Agriculture'. This was achieved by reclassifying 'Mixed Open/Agriculture' to 'Agriculture' where the land cover classification intersected with a parcel having an agricultural assessment. All other occurrences of 'Mixed Open/Agriculture' that did not intersect with a parcel having an agricultural assessment were reclassified as 'Mixed Open'.

NLCD land cover data does not have an 'Impervious' land cover category, but is instead classified as different intensities of 'Developed'. To be consistent with Phase 6 Chesapeake Bay Watershed Model land cover classes, all NLDC land cover data were reclassified as 'Impervious' if it intersected with the County's impervious land cover dataset. The 2007 County impervious data were used for the backcasting, as it was the best available impervious dataset closest to the baseline year that provided an accurate representation of impervious surfaces in the County. Finally, NLCD data were

[1] https://mde.maryland.gov/programs/water/TMDL/TMDLImplementation/Pages/WIPPhaseIICountyDocuments.aspx

clipped to the extent of the County MS4-regulated area, removing State, Federal, and any other land that does not fall under the County's jurisdiction.

The backcasting method was conducted for each Bay segment TMDL watershed separately. Each Bay segment TMDL watershed has a unique fingerprint of land cover classes and acreage, therefore the translation of NLCD land cover classes to CC land cover classes is expected to be unique for each watershed. Using both the 2013/2014 NLCD and CC land cover data, for each NLCD land cover category, the percentage of different CC land cover classes within each NLCD land cover class were summarized. Figure 1 shows the results of this comparison for all Bay segment TMDL watersheds, and serves as the key with which to 'translate' NLCD data prior to 2014 and make data consistent with the Phase 6 Chesapeake Bay Watershed Model land cover classes.

NLCD land cover acreages were multiplied by the percentages of CC land covers presented in Figure 2, thereby transforming the NLCD land cover to CC land cover classes. For each watershed, backcasted 'Aggregate Impervious' and 'Turf' acres were entered into the TIPP Tool to determine the baseline load. Land cover including 'Tree Canopy over Turf' and 'Tree Canopy over Aggregate Impervious' were added to the 'Turf' and 'Aggregate Impervious' baseline acres respectively, and included as land cover conversions. TIPP spreadsheets can be found in Appendix E.

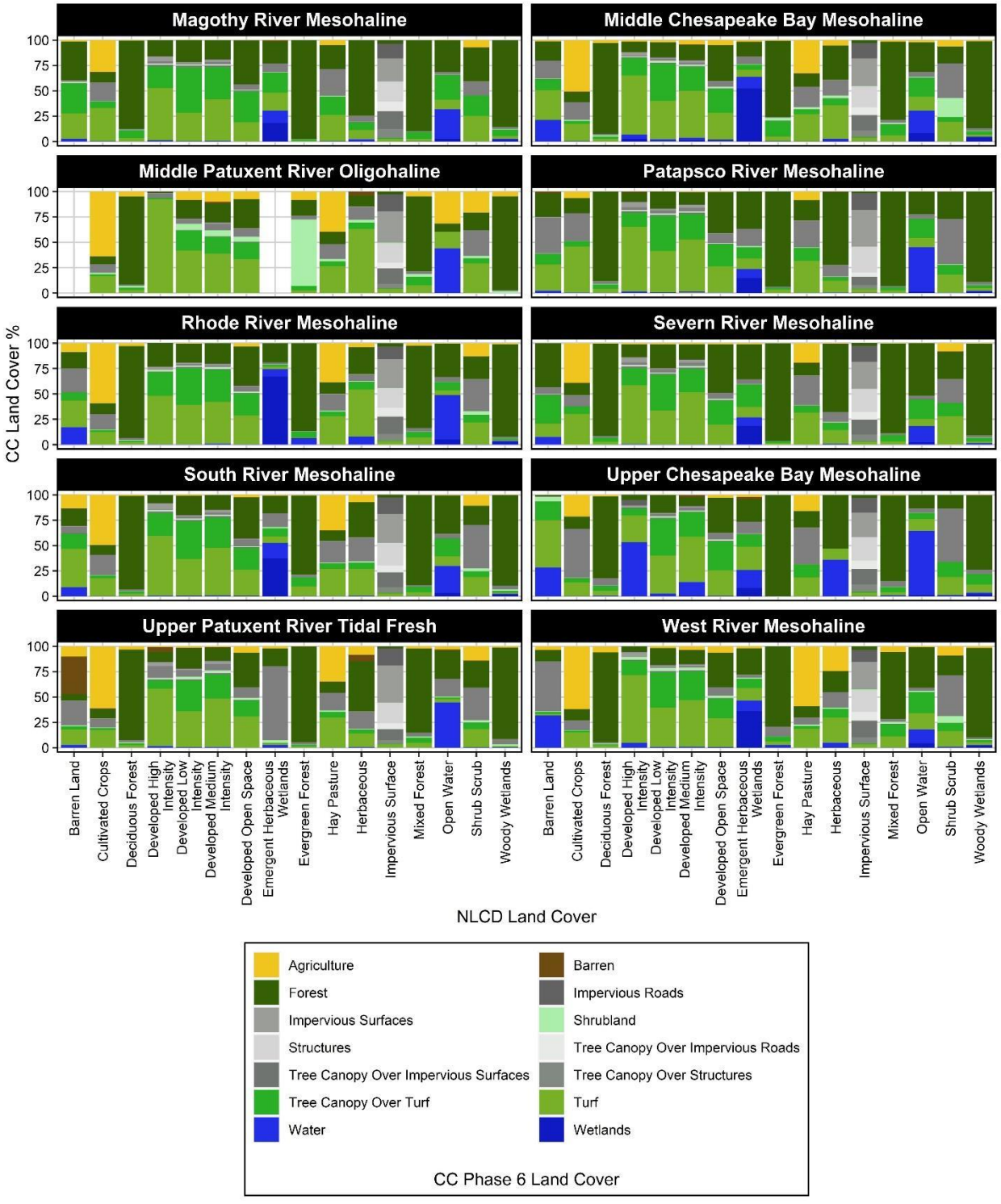

Figure 1: Unique NLCD-CC translations for each Bay segment TMDL watershed. These relationships are used as a key to 'translate' NLCD data to Phase 6 Chesapeake Bay Watershed Model land cover classes.

B. Local Nutrient and Sediment TMDLs and Progress Modeling Approach

Anne Arundel County has one local nutrient TMDL, and nine local sediment TMDLs. The local nutrient TMDL, "Total Maximum Daily Loads of Nitrogen and Phosphorus for the Baltimore Harbor in Anne Arundel, Baltimore, Carroll and Howard Counties and Baltimore City, Maryland", was approved by EPA in 2007 and revised by MDE in August 2015. The 10 local TMDLs, and their approval dates can be found in Table 1. Anne Arundel County established final dates for meeting the SW-WLAs in the individual sediment and nutrient TMDLs, approved by EPA prior to FY 19, as 2025 and 2030, respectively. Individual sediment TMDLs approved in FY 19 have a target date of 2030 for meeting the SW-WLA.

Table 1: Anne Arundel County nutrient and sediment TMDLs

TMDL Watershed	Approval Date of TMDL
Baltimore Harbor - Nutrient, 8 Digit WS 02130903	December, 17, 2007
Non-Tidal Baltimore Harbor - Sediment, 8 Digit WS 02130903	January, 27, 2022
Little Patuxent River - Sediment, 8 Digit WS 02131105	September 30, 2011
Upper Patuxent River - Sediment, 8 Digit WS 02131104	September 30, 2011
Patapsco River Lower North Branch - Sediment, 8 Digit WS 02130906	September 30, 2011
South River - Sediment, 8 Digit WS 02131003	September 28, 2017
Other West Chesapeake - Sediment, 8 Digit WS 02131005	February 9, 2018
Middle Patuxent River - Sediment, 8 Digit WS 02131102	July 2, 2018
Lower Patuxent River - Sediment, 8 Digit WS 02131101	July 2, 2018
West River - Sediment, 8 Digit WS 02131004	April 24, 2019

As with the Bay segment TMDLs, MDE's TIPP spreadsheet tool was used for all local nutrient and sediment TMDL progress modeling. The backcasting methodology was used for all local TMDLs following the same methodology as the Bay segment TMDLs as noted in Section III.A. Land cover data from the National Land Cover Database (NLCD) was used to quantify land cover acreage for each TMDL baseline year (either 1995, 2005, or 2009).

The backcasting method was conducted for each nutrient and sediment TMDL watershed separately. Figure 2 shows the results of the backcasting for all TMDL watersheds, and serves as the key with which to 'translate' NLCD data prior to 2014 and make data consistent with the Phase 6 Chesapeake Bay Watershed Model land cover classes. As seen in Figure 2, the NLCD land cover category 'Mixed Forest' in the South River comprises 88.5% of the CC land cover category 'Forest'. In contrast, the NLCD land cover category 'Developed, High Intensity' in the South River comprises 58.6% Turf, 22.8% Tree Canopy over Turf, and 7.3% Impervious.

Backcasted NLCD land cover data for each TMDL watershed is presented in Figure 3. As shown in Figure 3, urban land cover classes increased between 1995 and 2009, indicating the sensitivity of the backcasting method to land cover change and also the necessity of backcasting to make the baseline loads as accurate as possible. Following the approach for the Bay segment TMDLs, each watershed, backcasted 'Aggregate Impervious' and 'Turf' acres were entered into the TIPP Tool to determine the baseline load. Land cover including 'Tree Canopy over Turf' and 'Tree Canopy over Aggregate Impervious' were added to the 'Turf' and 'Aggregate Impervious' baseline acres respectively, and included as land cover conversions. TIPP spreadsheets can be found in Appendix E.

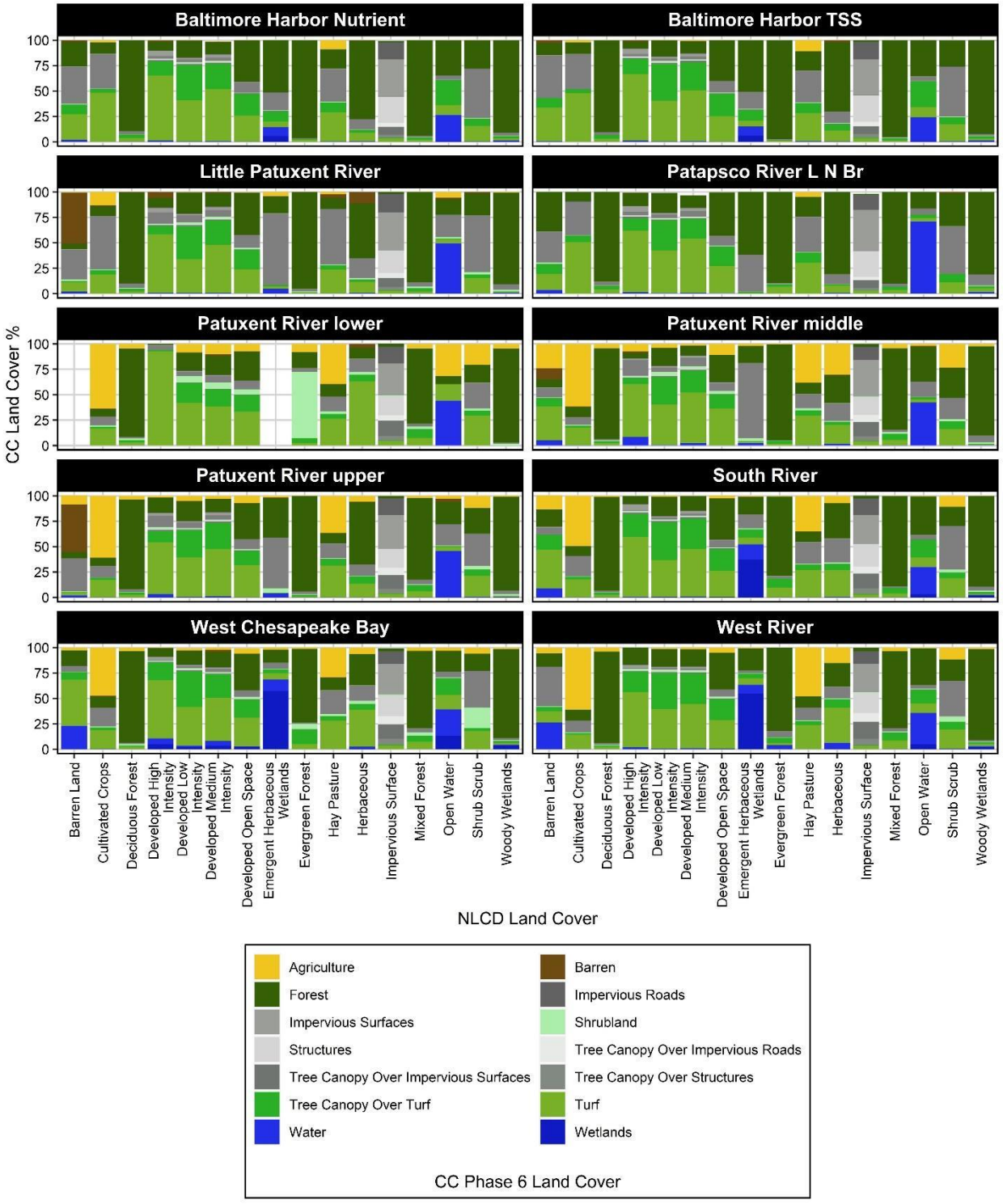

Figure 2: Unique NLCD-CC translations for each Nutrient and Sediment TMDL watershed. These relationships are used as a key to 'translate' NLCD data to Phase 6 Chesapeake Bay Watershed Model land cover classes.

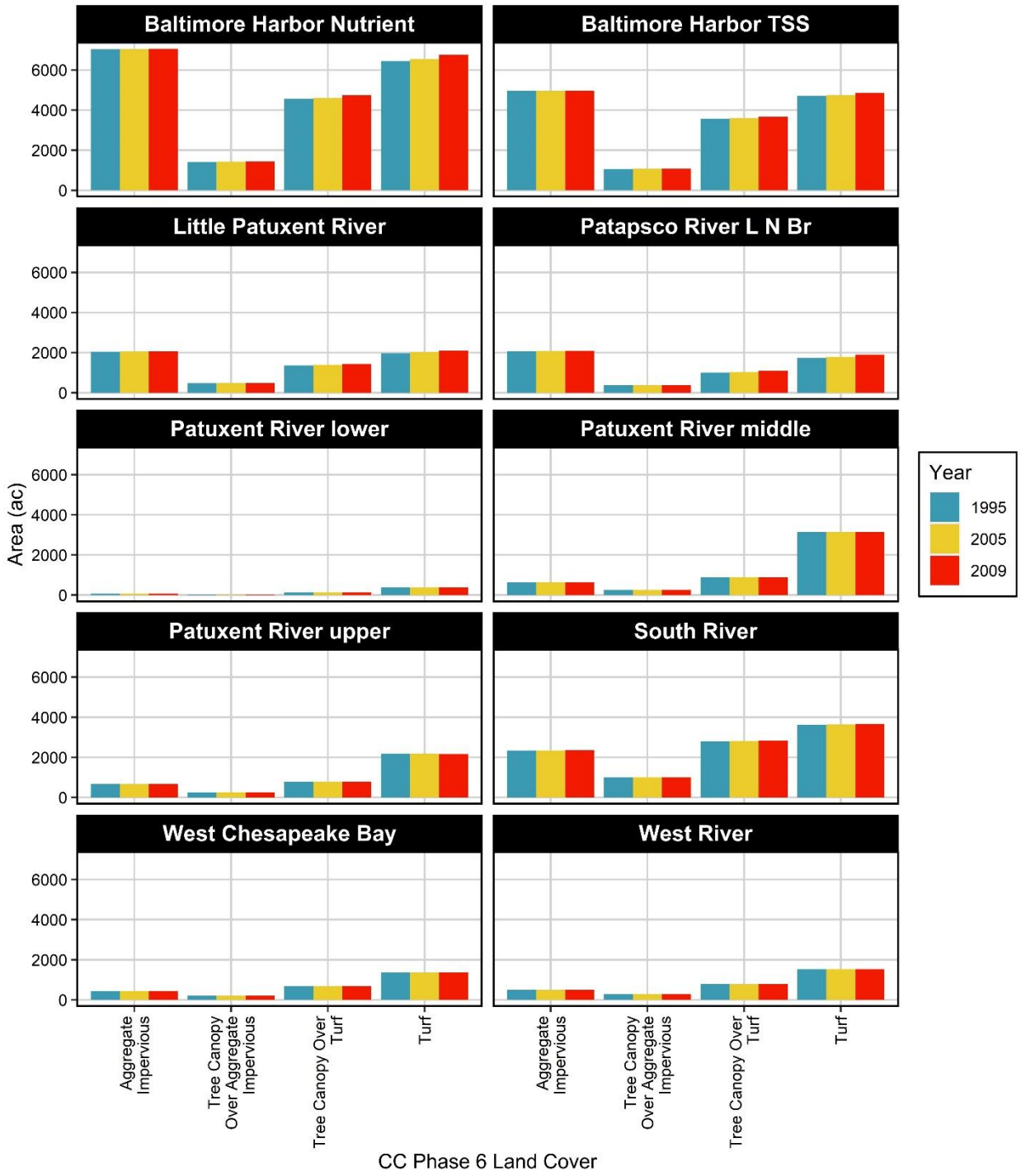

Figure 3: Backcasted MS4 land cover for each Nutrient and Sediment TMDL watershed

C. Bacteria

Anne Arundel County has 19 individual bacteria TMDLs, approved by EPA between November 2005 and August 2011 (Table 2). Pursuant to MDE guidance, compliance for bacteria TMDLs is assessed programmatically by monitoring activities rather than by modeling.

Table 2: Anne Arundel County bacterial TMDLs

TMDL Watershed	Approval Date
Magothy River Mainstem	February 20, 2006
Magothy River/Forked Creek	February 20, 2006
Magothy River/Tar Cove	February 20, 2006
Patapsco River/Furnace Creek	March 10, 2011
Patapsco River/Marley Creek	March 10, 2011
Patapsco River Lower North Branch, 8 Digit WS 02130906	December 3, 2009
Upper Patuxent River, Subsegment of 8 Digit WS 0213114	August 9, 2011
Rhode River/Bear Neck Creek	February 20, 2006
Rhode River/Cadle Creek	February 20, 2006
Severn River Mainstem, Subsegment of 8 Digit WS 02131002	April 10, 2008
Severn River/Mill Creek	April 10, 2008
Severn River/Whitehall & Meredith Creeks	April 10, 2008
South River/Duvall Creek	November 4, 2005
South River, Subsegment of 8 Digit WS 02131003	November 4, 2005
South River/Ramsey Lake	November 4, 2005
South River/Selby Bay	November 4, 2005
W. Chesapeake Bay/Tracy & Rockhold Creeks	February 20, 2006
West River, Subsegment of 8 Digit WS 02131004	February 20, 2006
West River/Parish Creek	February 20, 2006

D. Polychlorinated Biphenyls (PCBs)

Anne Arundel County has a total of six PCB TMDLs, only two of which have SW-WLAs requiring reductions. These two PCB TMDLs, the Baltimore Harbor, Curtis Creek/Bay and Bear Creek portions of the Patapsco River Mesohaline, and the Patuxent River – Tidal Fresh watersheds are shared with other jurisdictions, and were approved by EPA between October 2012 and September 2017 (Table 3). As with Bacteria TMDLs, compliance for PCB TMDLs is assessed programmatically by monitoring activities rather than by modeling.

Table 3: Anne Arundel County PCB TMDLs

TMDL Watershed	Approval Date
Baltimore Harbor, Curtis Creek/Bay, and Bear Creek portions of the Patapsco River Mesohaline Tidal Chesapeake Bay Segment	October 1, 2012
Patuxent River – Tidal Fresh	September 19, 2017

Draft PCB TMDL restoration plans can be found in Appendix B.

III. FY 24 BMP Implementation

In Fiscal Year (FY) 24, 11 alternative BMPs, 14 upland BMPs, 23 septic connections to WWTP (within bacterial TMDL watersheds only) were implemented, with 535 tons of material collected from annual practices including street sweeping and catch basin cleaning (Table 4).

Table 4: FY 24 BMP implementation in Anne Arundel County

BMP Type	Number/Tons
Bio-Swale	1
Forest Planting on Urban	2
Grass Swale	2
Infiltration Berm	1
Micro-Bioretention	1
Outfall Stabilization	2
Riparian Forest Planting	1
Shallow Wetland	1
Shoreline Restoration*	3
Step Pool Conveyance System	6
Stream Restoration	3
Wet Pond	2
Septic Connections to WWTP**	23
Street Sweeping***	234
Catch Basin Cleaning***	301

* Only applicable to the Chesapeake Bay TMDL.

** Number of connections excludes those outside of Bacterial TMDL watersheds.

*** Annual practice totals for FY24 only. Progress modeling used averages for FY 16-FY 18 and FY 17-FY 18 for street sweeping and catch basin cleaning, respectively.

A summary of interim programmed restoration and planned restoration via future planned BMPs are presented in Appendix C and Appendix D respectively.

IV. Chesapeake Bay TMDL Progress

Anne Arundel County's total nitrogen, total phosphorus, and total suspended sediment target loads (SW-WLAs) for the Chesapeake Bay are 449,641 lbs, 30,147 lbs, and 4,646,000 lbs, respectively, which are required to be achieved by 2025. These SW-WLAs equate to required reductions of 31.6%, 46.7%, and 67.3% for the 2009 baseline loads of nitrogen, phosphorus, and sediment.

In previous NPDES permits, the SW-WLAs and the annual progress the County made in meeting them were reported at the county-level. Within the County's recently issued NPDES permit, county-level SW-WLAs for nitrogen and phosphorus are disaggregated for each Chesapeake Bay Model Phase 5 segment (Bay segment). Using MDE's TIPP tool, the target loads based on the SW-WLAs and FY 23 progress were re-calculated and are presented in Table 5 and Table 6. Sediment SW-WLAs are not presented for each Bay segment as the State of Maryland did not set individual sector targets for sediment within the Chesapeake Bay Phase II Watershed Implementation Plan. Based on experience from the Chesapeake Bay Phase I Watershed Implementation Plan, the State of Maryland expected that reductions in phosphorus would result in concurrent sediment reductions to satisfy the sediment SW-WLA.

Table 5: FY 24 Chesapeake Bay TMDL TN progress for each Bay segment within Anne Arundel County

Bay Segment	Target TN Load (lbs/year)	Required TN Reduction (%)	FY 24 TN Reduction (%)	Interim Planned TN Reduction (%)
Upper Chesapeake Bay Mesohaline	1,770.9	37	0.01	6.92
Middle Chesapeake Bay Mesohaline	39,615.0	36	10.42	10.83
Magothy River Mesohaline	87,753.4	36	6.44	8.35
Patapsco River Mesohaline	102,106.8	35	3.62	7.61
Middle Patuxent River Oligohaline	3,651.0	27	0	19.31
Upper Patuxent River Tidal Fresh	107,096.4	15	1.56	3.99
Rhode River Mesohaline	11,543.8	36	7.81	20.01
Severn River Mesohaline	88,662.0	36	2.58	10.02
South River Mesohaline	63,727.2	36	11.91	14.28
West River Mesohaline	9,506.3	36	1.69	2.02

Table 6: FY 24 Chesapeake Bay TMDL TP progress for each Bay segment within Anne Arundel County

Segment	Target TP Load (lbs/year)	Required TP Reduction (%)	FY 24 TP Reduction (%)	Interim Planned TP Reduction (%)
Upper Chesapeake Bay Mesohaline	128.1	52	0.02	51.45
Middle Chesapeake Bay Mesohaline	5,869.2	51	15.25	15.82
Magothy River Mesohaline	3,778.3	51	18.65	29.96
Patapsco River Mesohaline	5,940.1	49	8.34	18.88
Middle Patuxent River Oligohaline	357.3	45	0	27.02
Upper Patuxent River Tidal Fresh	17,815.4	29	2.74	9.21
Rhode River Mesohaline	1,756.8	52	15.25	46.66
Severn River Mesohaline	6,367.8	51	6.56	31.47
South River Mesohaline	6,215.6	50	35.86	48.61
West River Mesohaline	1,109.4	52	5.71	7.21

Figure 4 and Figure 5 show the load reduction progress (in tons) for each bay segment, showing the target load and required reduction (with the sum being the baseline load), and the FY 24 cumulative progress reduction and interim planned reduction (with the sum being the total implemented and planned load reduction). Figure 4 and Figure 5 help identify where the County needs to expand the current inventory of planned projects to address the SW-WLA in each Bay segment.

As shown in Table 5 and Table 6 and in Figure 4 and Figure 5, load reduction progress at the Bay Segment is variable, with some segments having significantly more BMP implementation than others. Likewise, as Figure 4 and Figure 5 indicate, the interim planned reduction in some Bay segments, defined as projects that are currently under design, will not be enough to meet the required reduction. However, it should be noted that the County has made significant reductions, beyond what is required, in the wastewater sector. For example, the Mayo Water Reclamation Facility in the Rhode River Mesohaline segment was decommissioned in late 2017. Based on average annual discharges from the facility from 2013 to 2016, decommissioning the facility reduced annual inputs of TN and TP to the Rhode River by 23,779 and 1,234 lbs of TN and TP, respectively. To put this in perspective, these reductions equate to 366% of the required TN reduction and 65% of the required TP reduction to meet the Rhode River Mesohaline segment SW-WLAs. Furthermore, the County anticipates that procurement mechanisms such as the annual 'Full Delivery of Turnkey Water Quality Improvements' and the 'Anne Arundel County Watershed Restoration Grant Program' will be enough to meet the required SW-WLAs in each Bay segment. See Appendix C for information on individual projects.

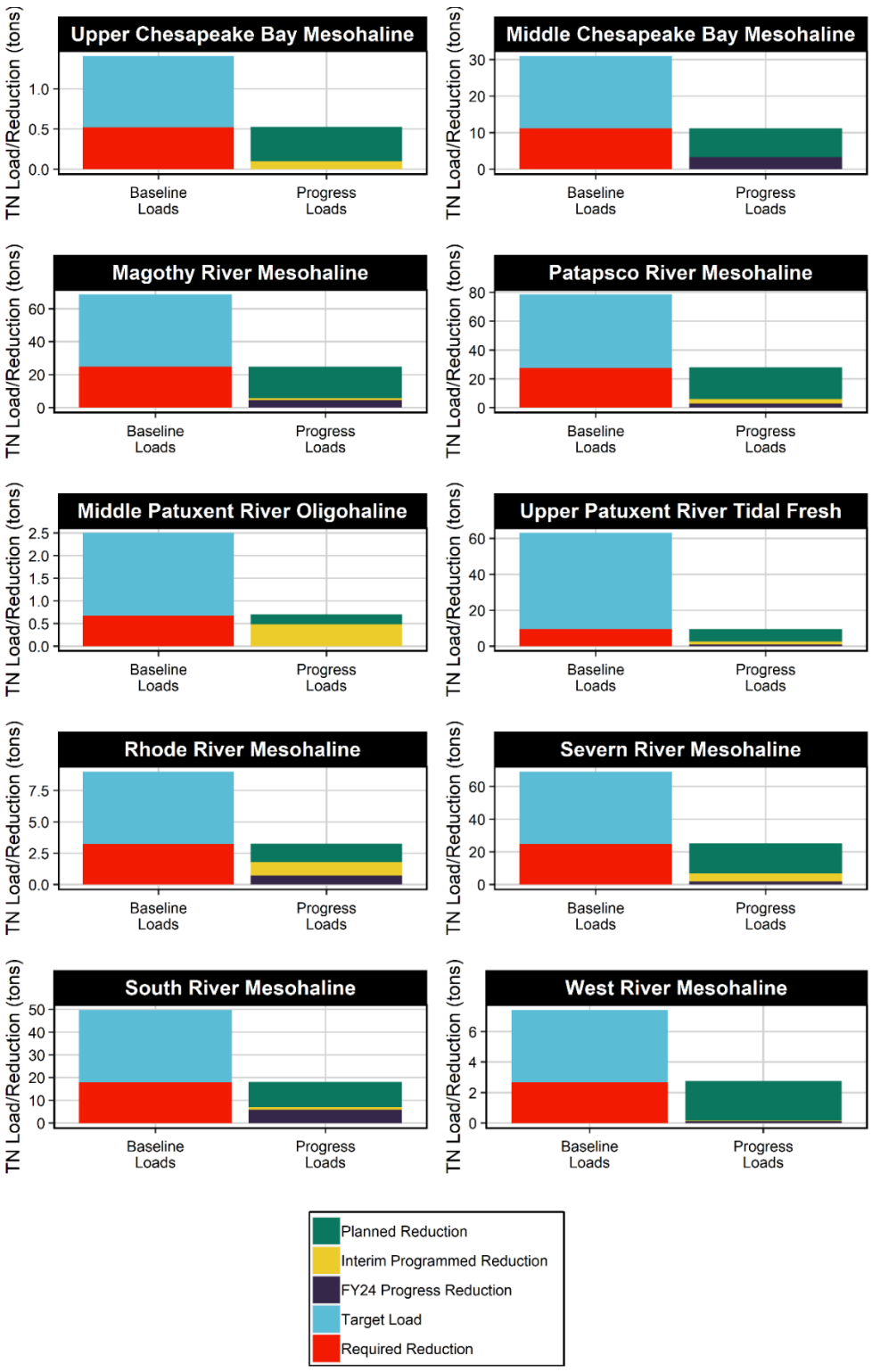

Figure 4: Baseline and progress TN loads for each Bay segment within Anne Arundel County. Where the sum of progress and interim programmed reductions are smaller than the required reductions, the County needs to expand the current inventory of planned projects to address the SW-WLA in each Bay segment.

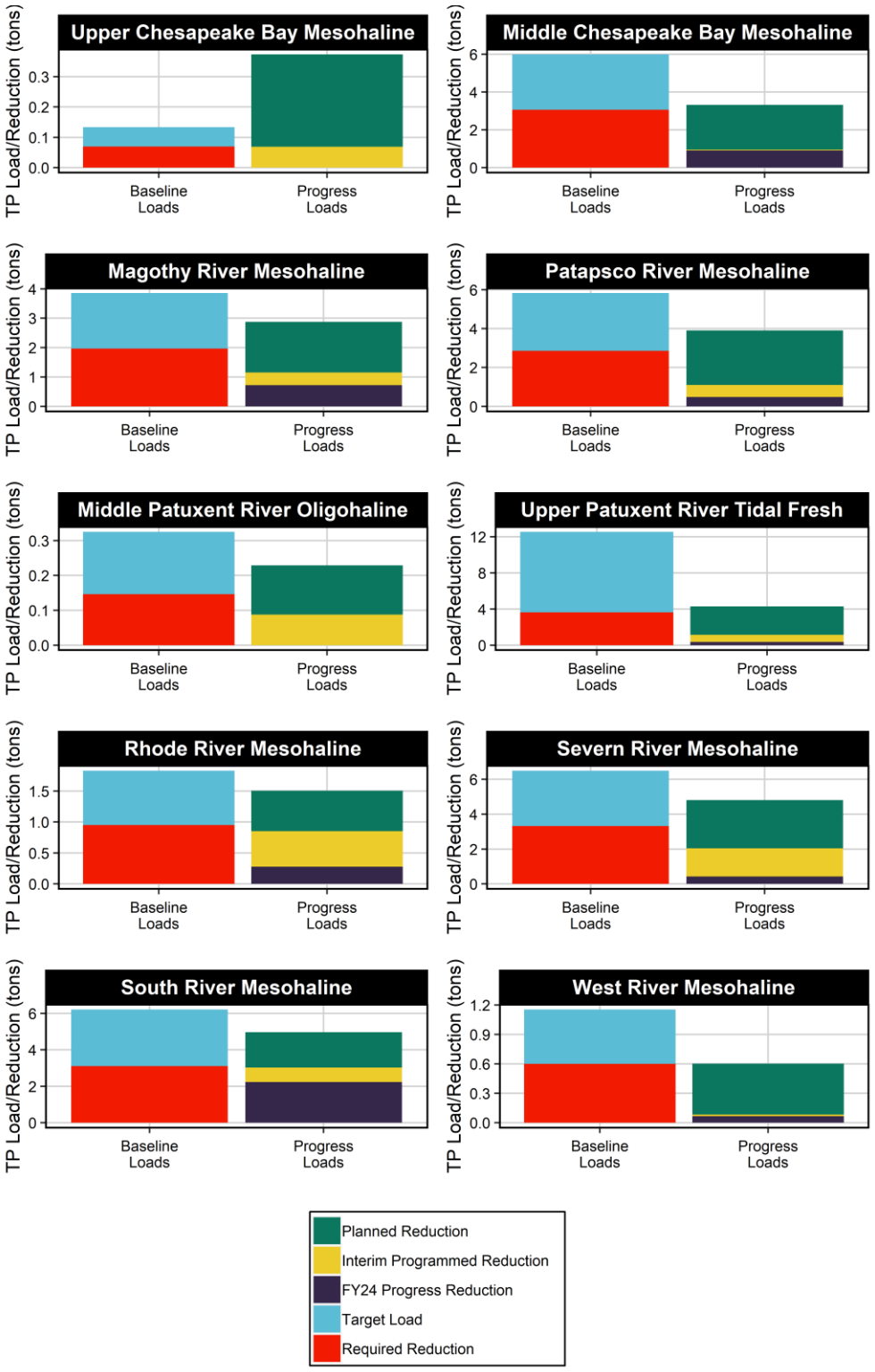

Figure 5: Baseline and progress TP loads for each Bay segment within Anne Arundel County. Where the sum of progress and interim programmed reductions are smaller than the required reductions, the County needs to expand the current inventory of planned projects to address the SW-WLA in each Bay segment.

V. Local Sediment and Nutrient TMDL Progress

The location of the ten local TMDLs within Anne Arundel County are presented in Figure 6. Each TMDL's nitrogen, phosphorus, and sediment target load (SW-WLAs) is presented in Table 7, along with the completion year, FY 24 cumulative progress, and the expected progress by the completion year. Based on the current interim programmed and planned reductions (Appendix C), the SW-WLAs for each TMDL are expected to be met for all local sediment and nutrient TMDLs. The pie charts in Figure 7 represent the proportion of the required reduction achieved with current progress reductions, interim programmed reductions, and planned reductions, for each watershed.

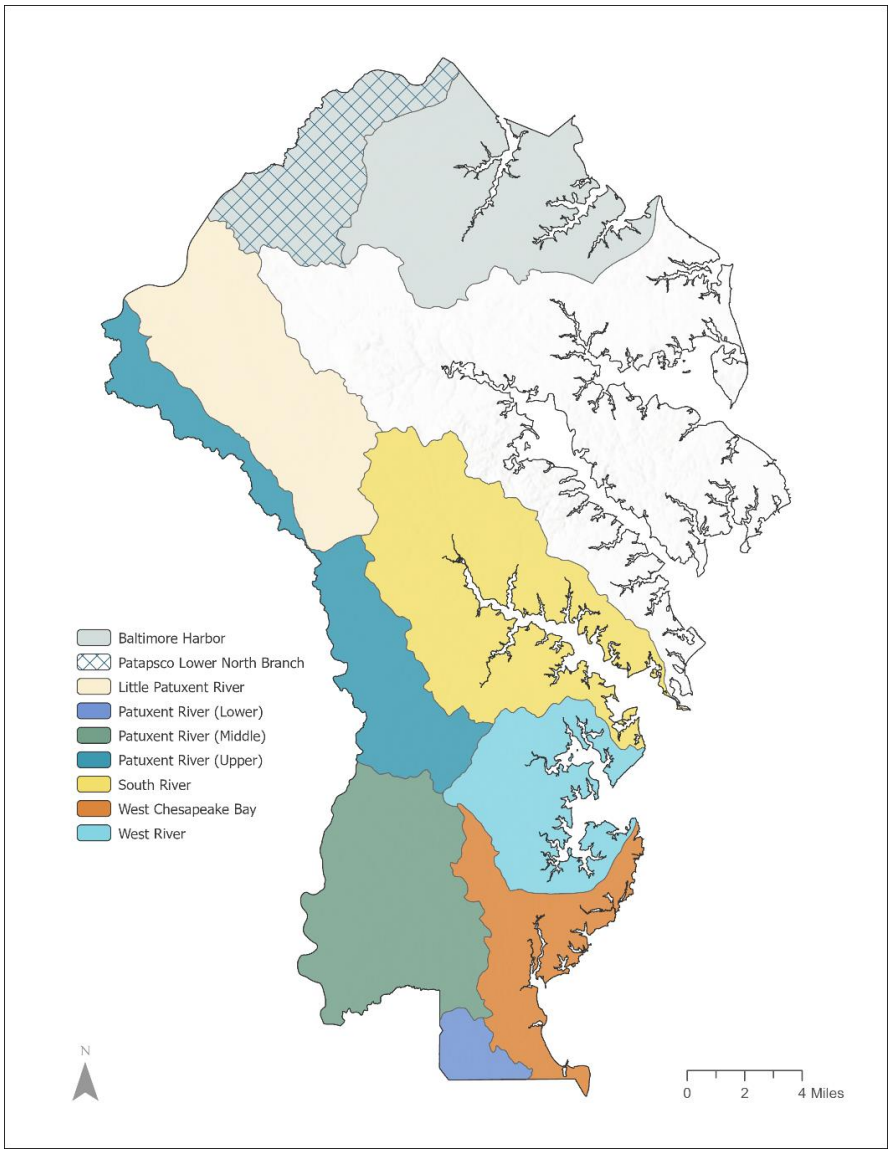

Figure 6: Map of local TSS and nutrient TMDL watersheds

Table 7: Local TSS and nutrient TMDL progress

Watershed	TMDL	Target Load (lbs)	Required Reduction (%)	Required Completion Year (actual)	FY 24 Cumulative Progress (%)*	Completion Year Progress (%)*
Baltimore Harbor	TN	232,941.4	15%	2030	3.41%	15.10%
Baltimore Harbor	TP	18,380.3	15%	2030	6.86%	34.00%
Baltimore Harbor	TSS	9,145,526.7	58%	2030	11.44%	70.20%
Little Patuxent	TSS	15,047,258.0	20.5%	2025	9.51%	28.83%
Lower Patuxent	TSS	767,132.1	61%	2030	0.00%	91.13%
Middle Patuxent	TSS	6,982,285.2	56%	2030	0.48%	56.31%
Upper Patuxent	TSS	11,314,309.7	11.4%	2025	1.30%	33.01%
Patapsco Lower North Branch	TSS	12,960,021.0	22.2%	2025	7.64%	23.23%
South River	TSS	13,634,211.2	28%	2025 (2023)	40.79%	55.28%
Other West Chesapeake	TSS	7,363,965.3	33%	2030	1.88%	23.27%
West River	TSS	7,150,213.7	22%	2030	0.66%	22.20%

* Orange shading indicates TMDL compliance has been achieved by FY 24. Light green shading indicates TMDL compliance is expected to be met or exceeded by the completion year.

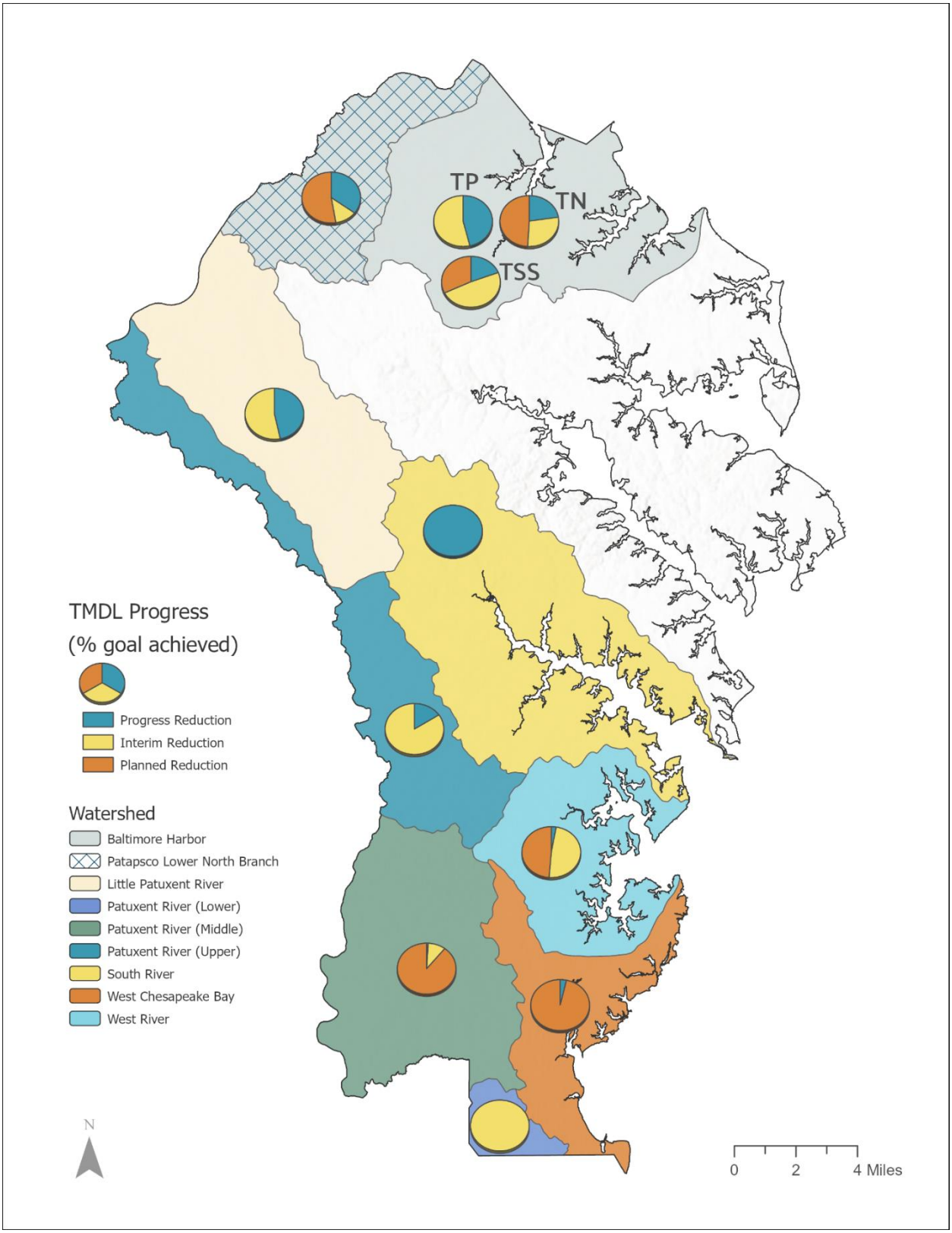

Figure 7: Map of local TSS and nutrient TMDL watersheds, with pie charts representing goal reduction achieved by current progress, interim, and planned implementation.

A. Sediment TMDLs

Figure 8 shows the progress, expressed in tons, for each TMDL watershed, showing the target load and required reduction (with the sum being the baseline load), and the FY 24 cumulative progress reduction, interim programmed reduction, and planned reduction (with the sum being the total implemented and planned load reduction). Figure 8 helps identify where the County needs to expand the current inventory of planned projects to address the SW-WLA in each TMDL watershed. In watersheds such as South River, the FY 24 progress reduction comprises the greatest amount, whereas in others, such as Patapsco Lower North Branch or Baltimore Harbor, load reductions are more evenly split between FY 24 progress load reductions, interim programmed load reductions, and planned reduction.

Figure 9 shows the breakdown of load reductions by BMP type for all implemented, programmed, and planned reductions. As shown in Figure 9, the majority of load reductions come from stormwater management BMPs and stream restorations. Within the more rural TMDL watersheds, stream restorations make up the bulk of TSS reductions due to limited stormwater management BMP retrofit opportunities.

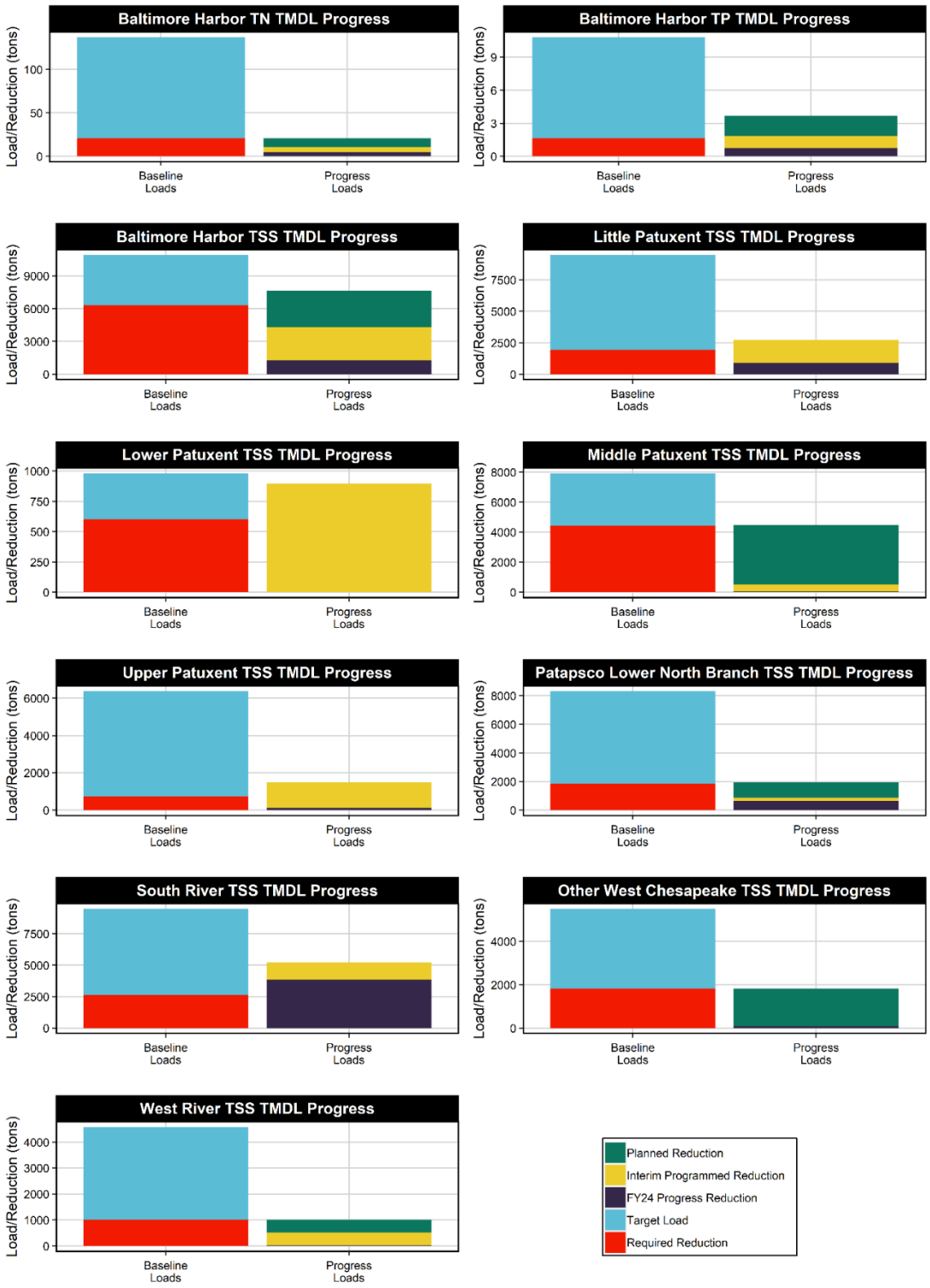

Figure 8: Baseline and progress loads within each TMDL watershed. Where the sum of progress, interim programmed reductions, and planned are smaller than the required reductions, the County needs to expand the current inventory of planned projects to address the SW-WLA in each Bay segment.

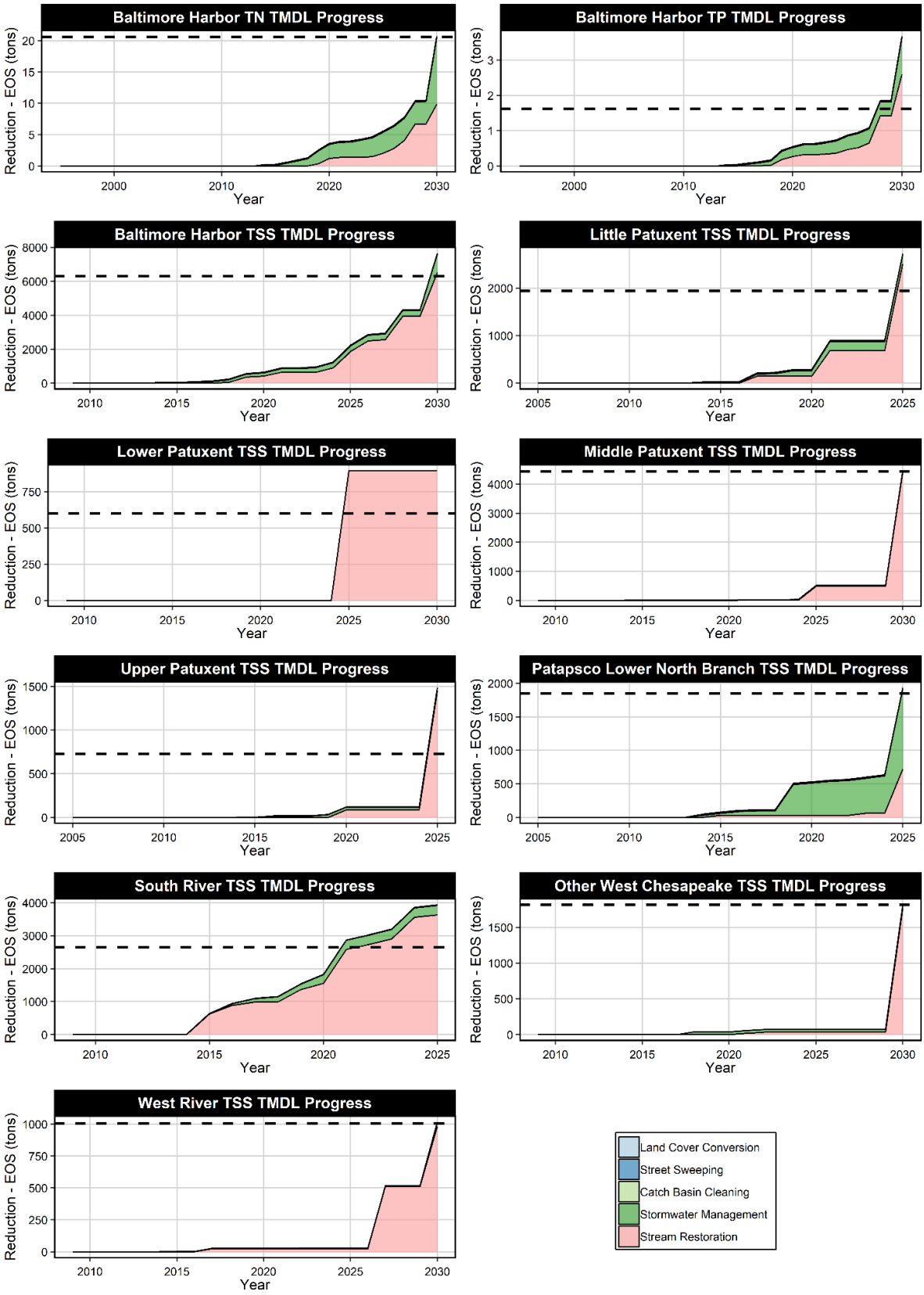

Figure 9: Expected load reductions over time by BMP type within each TMDL watershed.

1.Baltimore Harbor

The Baltimore Harbor Watershed is situated in the northern portion of the County, and shares political boundaries with Baltimore City, Baltimore, Carroll, and Howard Counties (Figure 10). The Anne Arundel County portion of the Baltimore Harbor watershed is approximately 30,357 acres (47.4 square miles) in area and contains approximately 160.4 total miles of stream reaches.

The target sediment load for the Baltimore Harbor is 9,145,527 pounds per year - a 58% reduction from the baseline by 2035. Current FY 24 progress shows a reduction of 2,491,671 pounds (11.44%). Total interim programmed and planned restoration will result in a further 12,794,037 pounds of reduction, resulting in a total of 70.20% reduction by the completion year (Table 8).

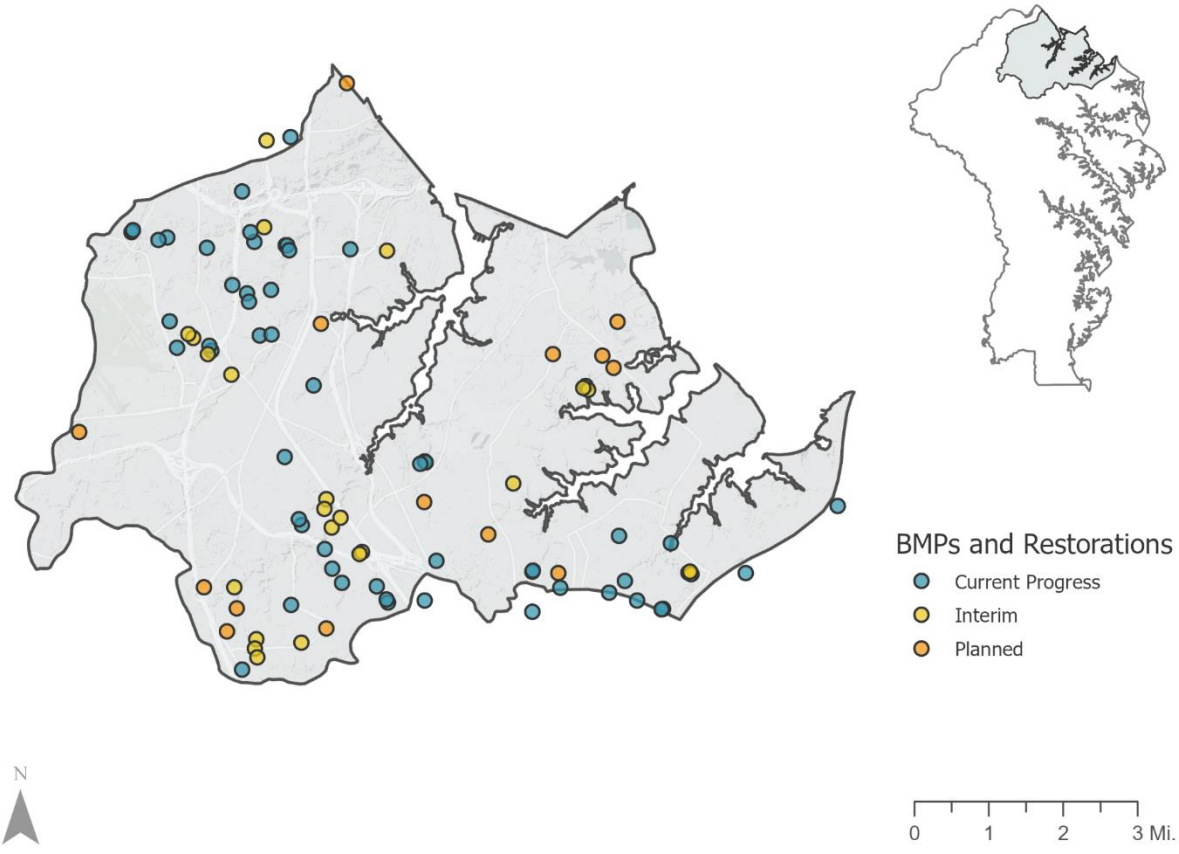

Figure 10: Map of the Baltimore Harbor TSS TMDL watershed

The Baltimore Harbor FY 24 progress reduction (11.44%) was achieved via street sweeping (~60.2 lane miles), storm drain cleaning (~126,043 pounds), 44 stormwater management practices, three land cover conversion BMPs (2.81 acres) and seven stream restorations (7,733 linear feet). The interim programmed and planned reduction consists of 18 stormwater management practices and 21 stream restorations (40,968 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects. Note that there are several BMP points providing water quality treatment that plot outside the watershed boundary shown in Figure 10. The drainage areas for these BMPs overlap partially with the Baltimore Harbor TMDL watershed, despite their centroids falling outside the boundary used for mapping. These BMP drainage areas are determined from high-resolution QL1 LiDAR and the County's stormwater infrastructure network, and as such are more accurate than the MD 8-digit watershed boundaries. This is the case for all subsequent maps containing BMP points outside the map boundary.

The top three implemented projects that provide the greatest sediment reductions in the Baltimore Harbor are:

- BMP0291, a stream restoration that reduces 610,000 lbs of sediment annually;
- BMP0300, a stream restoration that reduces 493,000 lbs of sediment annually; and
- BMP0746, a stream restoration that reduces 283,869.2 lbs of sediment annually.

Table 8: TMDL summary for Baltimore Harbor TSS

Results and TMDL WLA	Loads and Percent Reduction
2009 Baseline Load (lbs)	21,775,064
FY 24 Progress Load (lbs)	19,283,393
FY 35 Planned Load (lbs)	6,489,356
FY 24 Percent Reduction	11.44%
FY 35 Percent Reduction	70.20%
Target TMDL WLA Reduction	58.00%

Anne Arundel County completed development of an implementation plan in FY23 to address the sediment load reduction required by the "*Total Maximum Daily Load of Sediment in the Baltimore Harbor Watershed, Baltimore County, and Anne Arundel County*" that was approved by EPA on January 27, 2023. A copy of the draft plan was submitted to MDE with the FY22 Annual MS4 Report. The draft plan was advertised for a 30-day public comment period from January 18 – February 18, 2023. No public comments were received. MDE approved the draft plan on January 26, 2024. MDE's comments and recommendations were included in the approval letter. MDE's comments and recommendations will be addressed during the development of the plan update which is due to MDE before November 4, 2026. The County initiated a contract in 2024 to update all nine of its Sediment TMDL implementation plans including the Baltimore Harbor. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved. See Appendix A for more information.

2. Patuxent River (Little Patuxent River, Upper Patuxent River, Middle Patuxent River, and Lower Patuxent River)

a. Little Patuxent

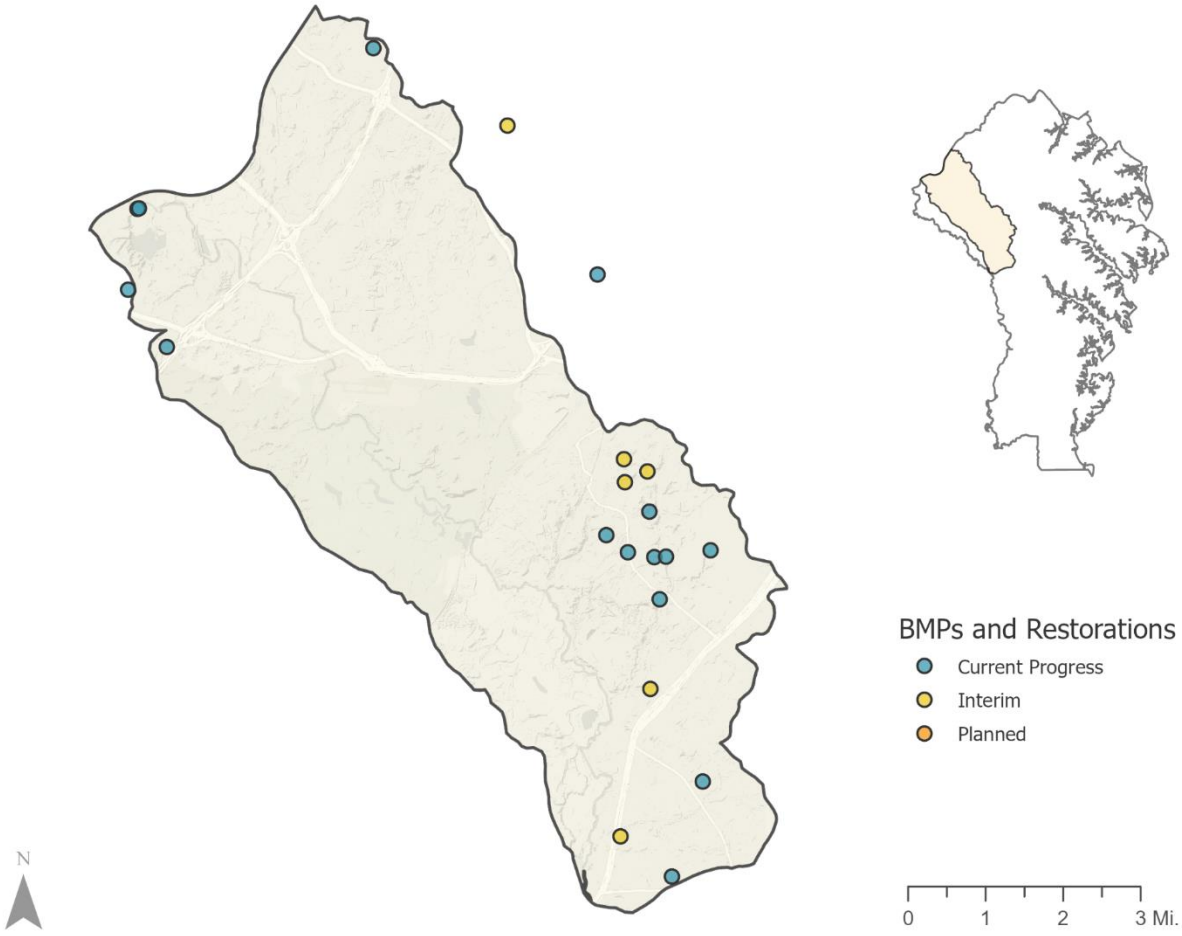

Figure 11: Map of the Little Patuxent River TSS TMDL watershed

The Little Patuxent is situated in the western portion of the County, and shares political boundaries with Howard County (Figure 11). Anne Arundel County's portion of the Little Patuxent watershed is approximately 27,752 acres (43.4 square miles) in area and contains approximately 1,200 total miles of stream reaches.

The target sediment load for the Little Patuxent is 15,047,258 pounds per year - a 20.5% reduction from the baseline by 2025. Current FY 24 progress shows a reduction of 1,799,872 pounds (9.51%).

Total interim programmed and planned restoration will result in a further 3,656,426 pounds of reduction, resulting in a total of 28.83% reduction by the completion year (Table 9).

The Little Patuxent FY 24 progress reduction (9.51%) was achieved via street sweeping (~44.6 lane miles), storm drain cleaning (~16,690 pounds), 11 stormwater management practices, and four stream restorations (4,221 linear feet). The interim programmed and planned reduction consists of one stormwater management practice and five stream restorations (14,497 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the Little Patuxent are:

- BMP0324, a stream restoration that reduces 620,053 lbs of sediment annually;
- BMP0712, a stream restoration that reduces 454,000 lbs of sediment annually; and
- BMP0266, a stream restoration that reduces 250,728 lbs of sediment annually.

Table 9: TMDL summary for Little Patuxent TSS

Results and TMDL WLA	Loads and Percent Reduction
2005 Baseline Load (lbs)	18,927,369
FY 24 Progress Load (lbs)	17,127,496
FY 25 Planned Load (lbs)	13,471,070
FY 24 Percent Reduction	9.51%
FY 25 Percent Reduction	28.83%
Target TMDL WLA Reduction	20.5%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the Little Patuxent. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

b. Upper Patuxent

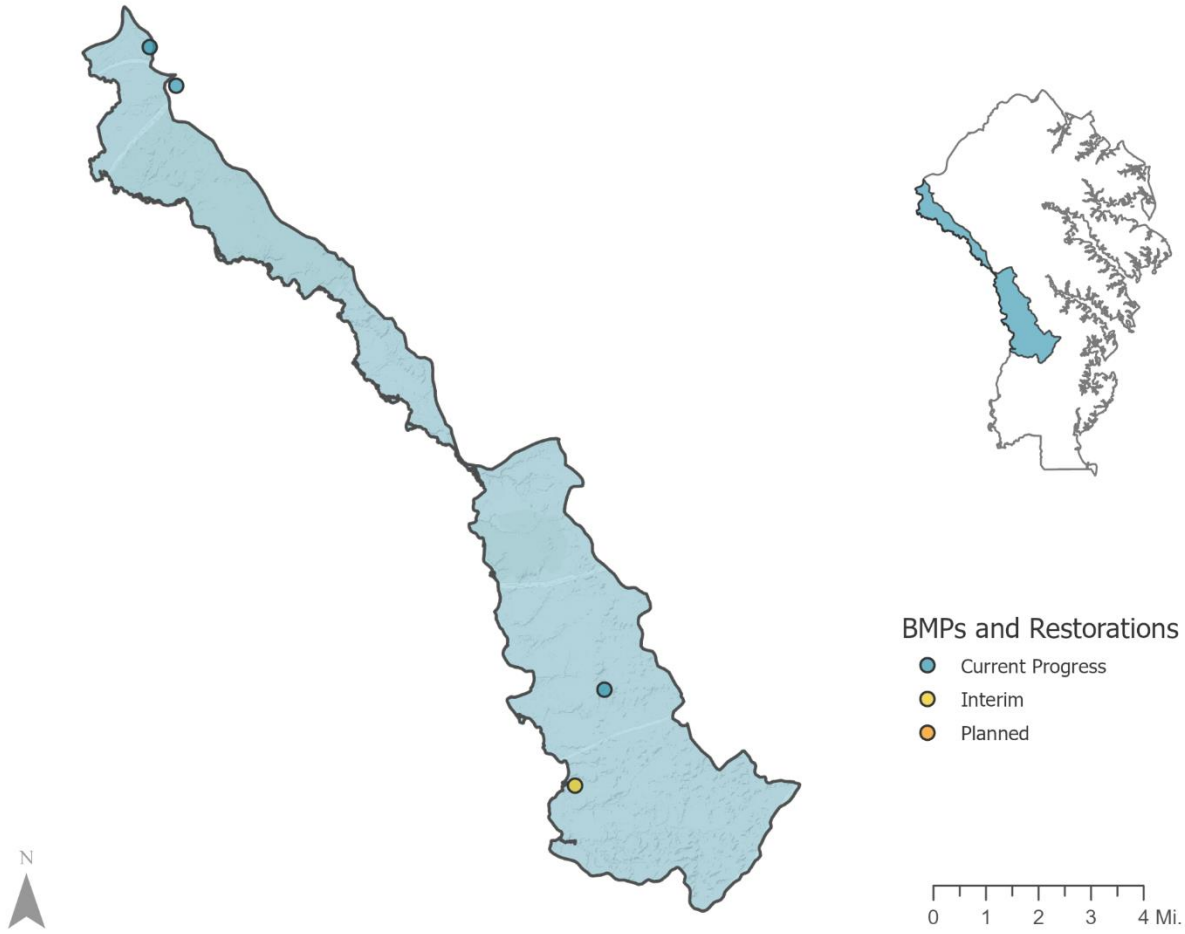

Figure 12: Map of the Upper Patuxent River TSS TMDL watershed

The Upper Patuxent is situated in the western portion of the County, and shares political boundaries with Prince George's County along the Patuxent River and a small portion of Howard County (Figure 12). Anne Arundel County's portion of the Upper Patuxent watershed is approximately 22,420 acres (35.0 square miles) in area and contains approximately 90 total perennial miles of stream reaches.

The target sediment load for the Upper Patuxent is 11,314,310 pounds per year - an 11.4% reduction from the baseline by 2025. Current FY 24 progress shows a reduction of 240,597 pounds (1.88%). Total interim programmed and planned restoration will result in a further 2,730,472 pounds of reduction, resulting in a total of 23.27% reduction by the completion year (Table 10).

The Upper Patuxent FY 24 progress reduction (1.88%) was achieved via street sweeping (~4.7 lane miles), storm drain cleaning (~1,416 pounds), two stormwater management practices, and one stream restoration (236 linear feet). The interim programmed reduction consists of two stream restoration (2,552 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the Upper Patuxent are:

- BMP0289, a stream restoration that reduces 171,500 lbs of sediment annually;
- BMP0197, a stormwater management BMP that reduces 33,313 lbs of sediment annually;
- BMP0068, a stormwater management BMP that reduces 30,354 lbs of sediment annually.

Table 10:TMDL summary for Upper Patuxent TSS

Results and TMDL WLA	Loads and Percent Reduction
2005 Baseline Load (lbs)	12,770,101
FY 24 Progress Load (lbs)	12,529,504
FY 25 Planned Load (lbs)	9,799,032
FY 24 Percent Reduction	1.88%
FY 25 Percent Reduction	23.27%
Target TMDL WLA Reduction	11.40%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the Upper Patuxent. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

c. Lower Patuxent

The Lower Patuxent is located in the southernmost portion of the county, and shares political boundaries with Calvert County (Figure 13). Only a small portion of the entire Lower Patuxent watershed is located within Anne Arundel County; the rest of the Lower Patuxent watershed extends through Prince George's, Calvert, Charles, and St. Mary's counties until the point of discharge from the Patuxent River into the Chesapeake Bay. The Anne Arundel County portion of the Lower Patuxent watershed is approximately 3,217 acres (5 square miles) and contains approximately 24.7 miles of streams.

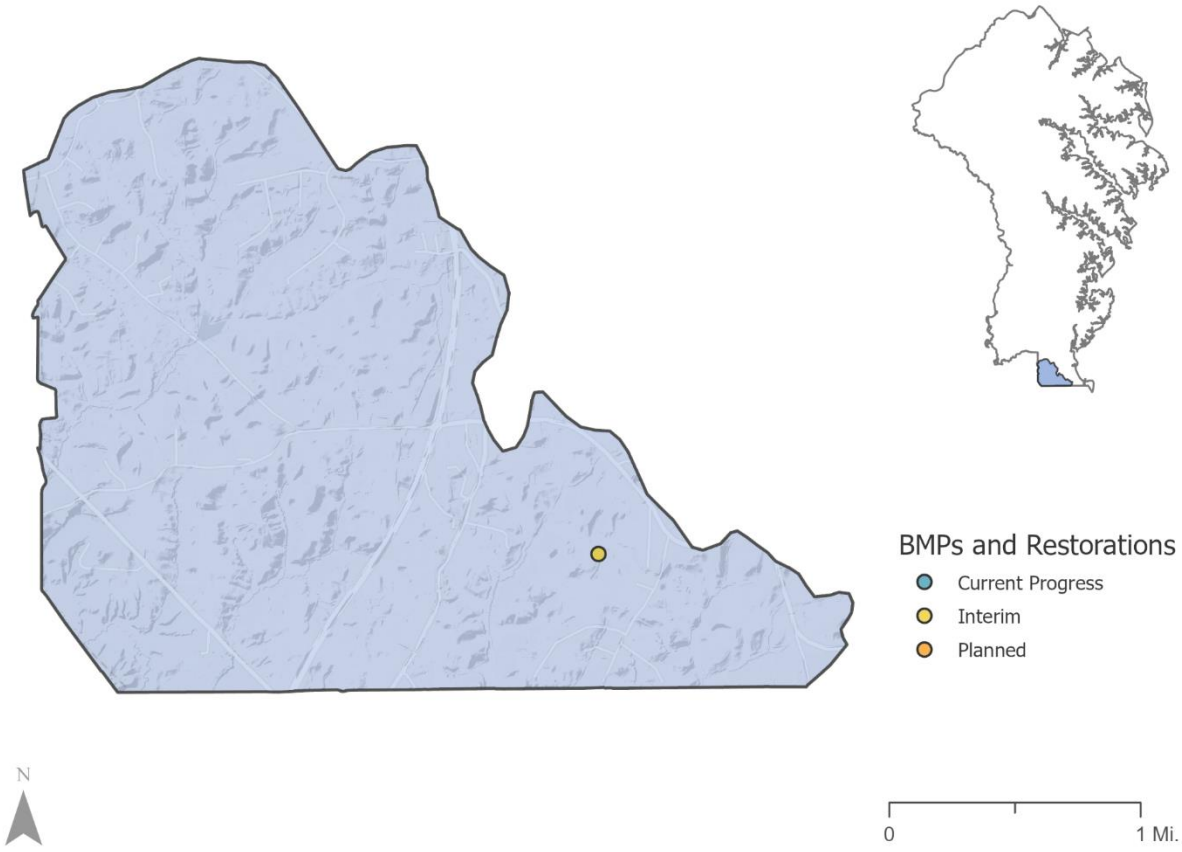

Figure 13: Map of the Lower Patuxent River TSS TMDL watershed

The target sediment load for the Lower Patuxent is 767,132 pounds per year - a 61% reduction from the baseline by 2030. Current FY 24 progress shows a reduction of 0 pounds (0%). Total interim programmed and planned restoration will result in a further 1,792,471 pounds of reduction, resulting in a total of 91.13% reduction by the completion year (Table 11). The interim

programmed reduction consists of one stream restorations (2,906 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

Table 11:TMDL summary for Lower Patuxent TSS

Results and TMDL WLA	Loads and Percent Reduction
2009 Baseline Load (lbs)	1,967,005
FY 24 Progress Load (lbs)	1,967,005
FY 30 Planned Load (lbs)	174,534
FY 24 Percent Reduction	0.00%
FY 30 Percent Reduction	91.13%
Target TMDL WLA Reduction	61.00%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the Lower Patuxent. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

d. Middle Patuxent

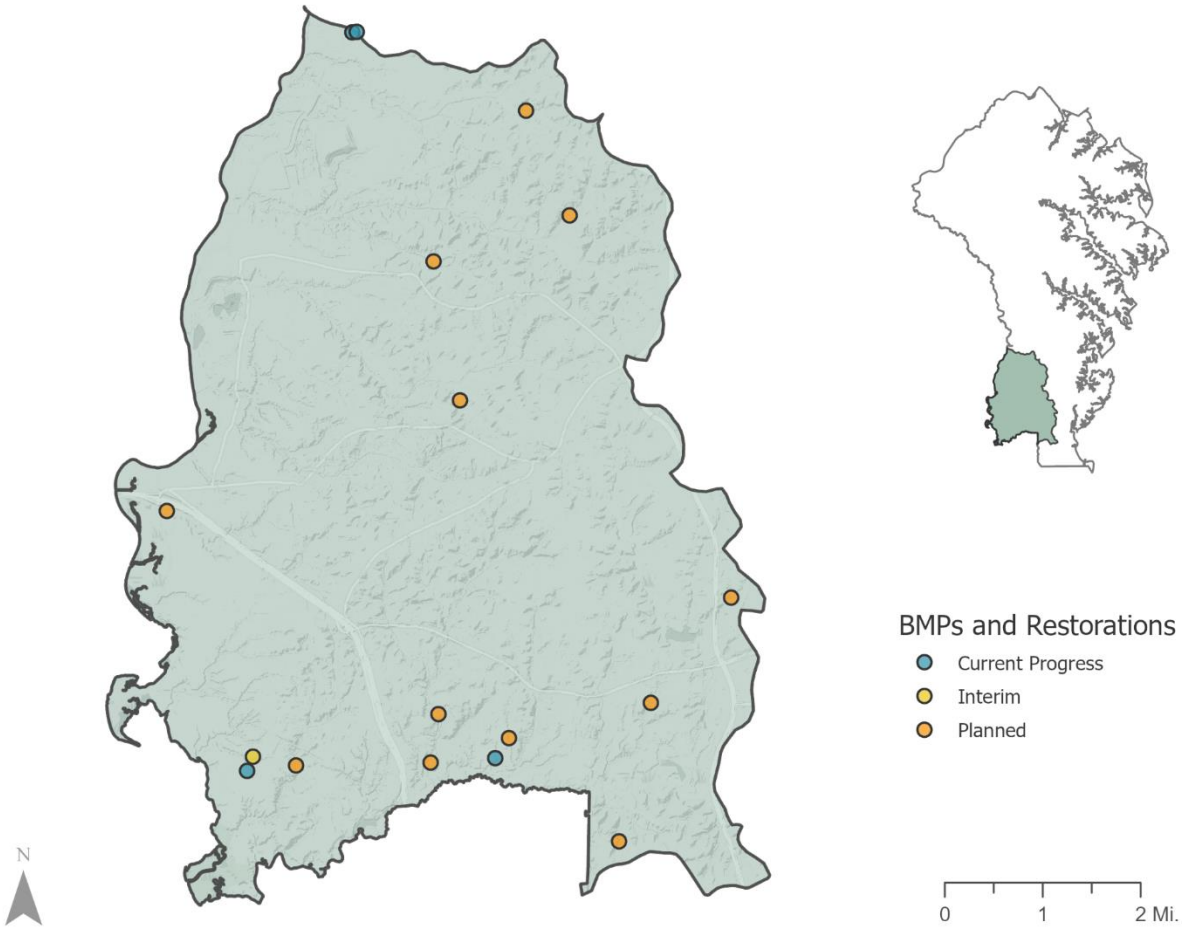

Figure 14: Map of the Middle Patuxent River TSS TMDL watershed

The Middle Patuxent watershed is located in the southwest portion of the county, and shares political boundaries with Prince George's County along the Patuxent River to the west, and with Calvert County along Lyons Creek to the south (Figure 14). The Anne Arundel County portion of the Middle Patuxent watershed is approximately 26,490 acres (41.4 square miles) and contains approximately 228 miles of streams.

The target sediment load for the Middle Patuxent is 6,982,285 pounds per year - a 56% reduction from the baseline by 2030. Current FY 24 progress shows a reduction of 76,158 pounds (0.48%). Total interim programmed and planned restoration will result in a further 8,860,108 pounds of reduction, resulting in a total of 56.31% reduction by the completion year (Table 12).

The Middle Patuxent FY 24 progress reduction (0.48%) was achieved via street sweeping (~1.1 lane miles), storm drain cleaning (~441 pounds), three land cover conversion BMPs (37.50 acres) and one stream restorations (244 linear feet). The interim programmed and planned reduction consists of 13 stream restorations (35,726 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the Middle Patuxent are:

- BMP0821, a land cover conversion that reduces 51,858 lbs of sediment annually;
- BMP0779, an outfall stabilization that reduces 19,785 lbs of sediment annually; and
- BMP0413, a land cover conversion that reduces 1,988 lbs of sediment annually.

Table 12:TMDL summary for Middle Patuxent TSS

Results and TMDL WLA	Loads and Percent Reduction
2009 Baseline Load (lbs)	15,868,830
FY 24 Progress Load (lbs)	15,792,672
FY 30 Planned Load (lbs)	6,932,564
FY 24 Percent Reduction	0.48%
FY 30 Percent Reduction	56.31%
Target TMDL WLA Reduction	56.00%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the Middle Patuxent. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

3.Patapsco River Lower North Branch

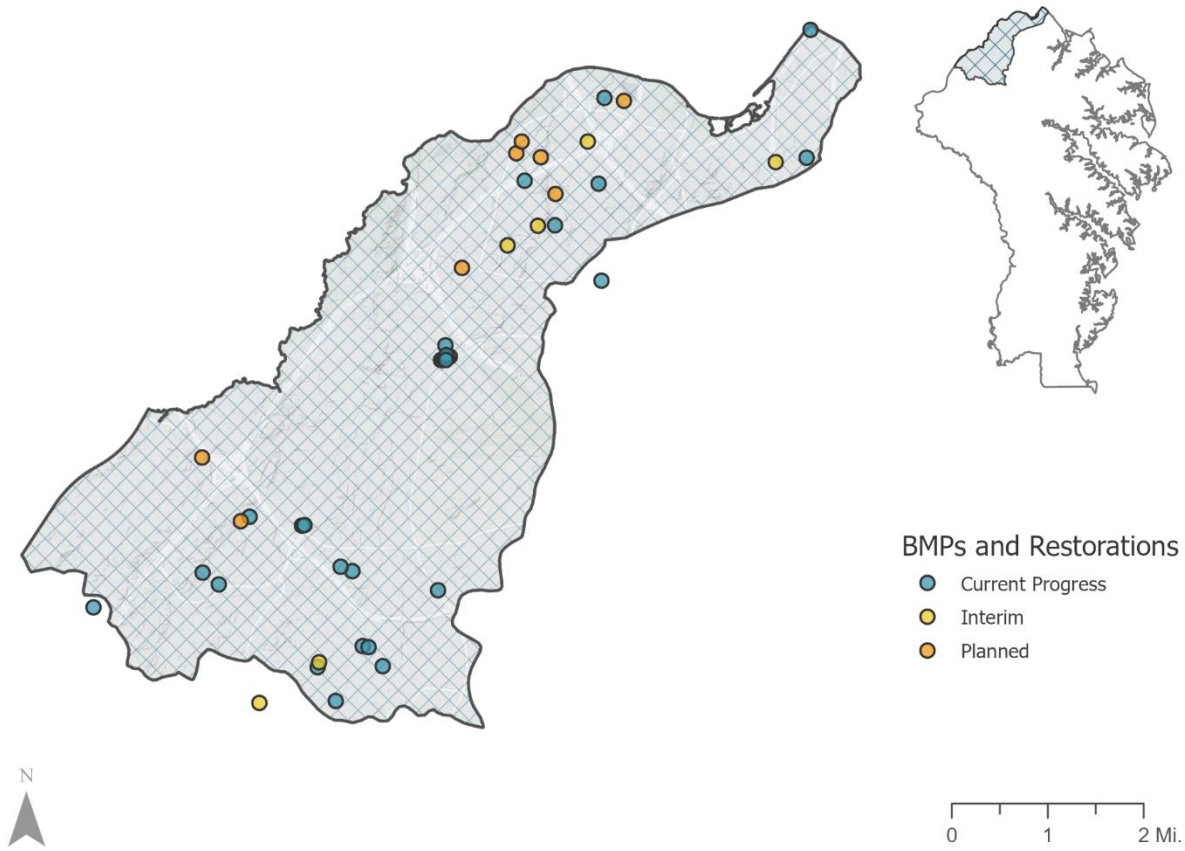

Figure 15: Map of the Patapsco River Lower North Branch TSS TMDL watershed

The Patapsco LNB is situated in the northwestern portion of the County, and shares political boundaries with Howard County along Deep Run and Baltimore County along the mainstem of the Patapsco River (Figure 15). The downstream extent of the watershed borders Baltimore City. Anne Arundel County's portion of the Patapsco LNB watershed is approximately 15,270 acres (23.9 square miles) in area and contains approximately 96 miles of streams.

The target sediment load for the Patapsco LNB is 12,960,021 pounds per year - a 22.2% reduction from the baseline by 2025. Current FY 24 progress shows a reduction of 1,272,478 pounds (7.64%). Total interim programmed and planned restoration will result in a further 2,597,736 pounds of reduction, resulting in a total of 23.23% reduction by the completion year (Table 13).

The Patapsco LNB FY 24 progress reduction (7.64%) was achieved via street sweeping (~33.5 lane miles), storm drain cleaning (~12,221 pounds), 25 stormwater management practices, two land cover conversion BMPs (0.33 acres) and two stream restorations (515 linear feet). The interim programmed and planned reduction consists of 12 stormwater management practices and two stream restorations (14,585 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the Patapsco Lower North Branch are:

- BMP0198, a stormwater management BMP that reduces 508,367 lbs of sediment annually;
- BMP0168, a stormwater management BMP that reduces 128,541 lbs of sediment annually;
- BMP0234, a stormwater management BMP that reduces 105,967 lbs of sediment annually.

Table 13:TMDL summary for Patapsco Lower North Branch TSS

Results and TMDL WLA	Loads and Percent Reduction
2005 Baseline Load (lbs)	16,658,125
FY 24 Progress Load (lbs)	15,385,647
FY 25 Planned Load (lbs)	12,787,911
FY 24 Percent Reduction	7.64%
FY 25 Percent Reduction	23.23%
Target TMDL WLA Reduction	22.20%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the Patapsco Lower North Branch. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

4.South River

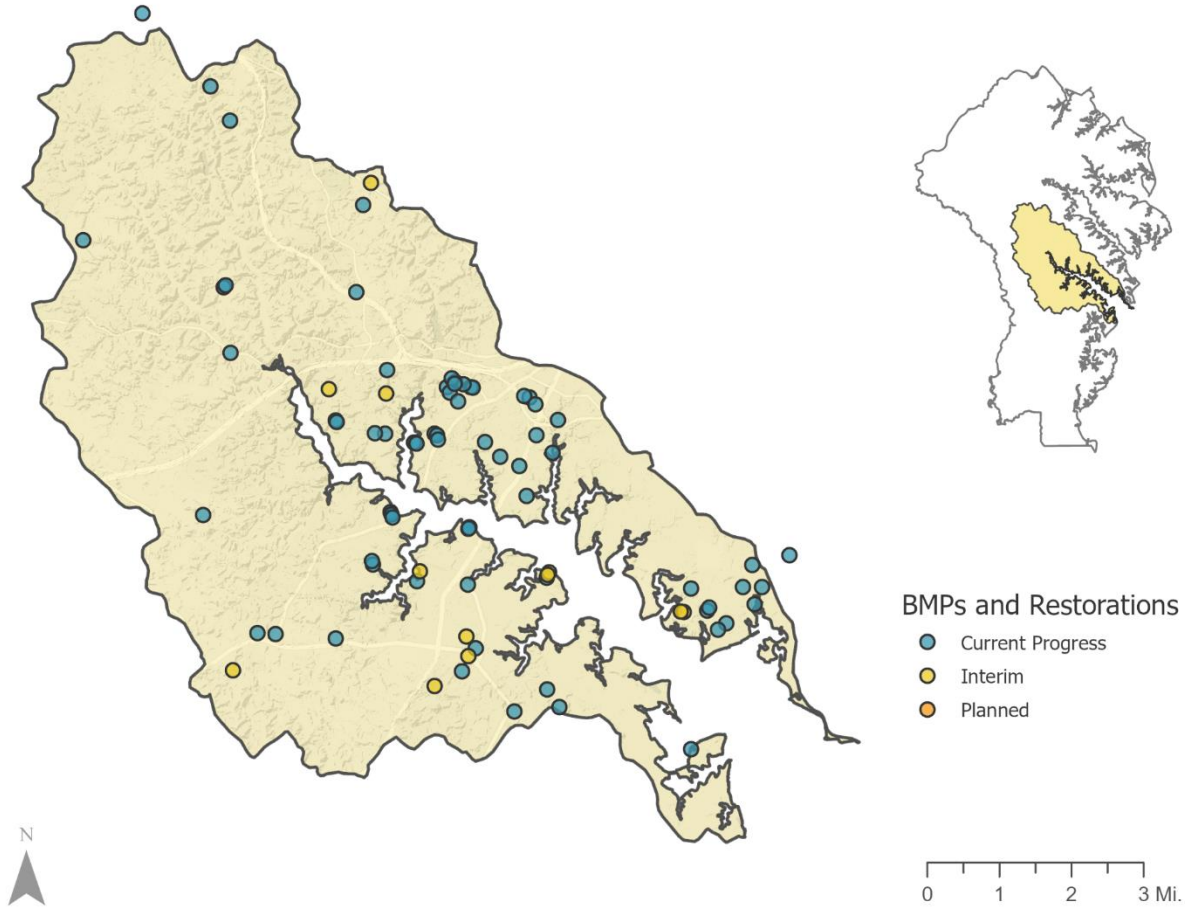

Figure 16: Map of the South River TSS TMDL watershed

The South River is situated in the central portion of the County, and drains directly to the Chesapeake Bay (Figure 16). The watershed comprises approximately 36,514 acres and lies entirely within the County.

The target sediment load for the South River is 13,634,211 pounds per year - a 28% reduction from the baseline by 2025. Current FY 24 progress shows a reduction of 7,724,059 pounds (40.79%), achieving compliance with the TMDL. Additionally, there is a total interim programmed restoration of 2,743,745 pounds, resulting in a total reduction of 55.28% by the completion year (Table 14).

The South River FY 24 progress reduction (40.79%) was achieved via street sweeping (~20.3 lane miles), storm drain cleaning (~25,296 pounds), 43 stormwater management practices, three land

cover conversion BMPs (9.86 acres) and 23 stream restorations (35,055 linear feet). The interim programmed reduction consists of four stormwater management practices and six stream restorations (13,654 linear feet). See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the South River are:

- BMP0286, a stream restoration that reduces 1,327,869 lbs of sediment annually;
- BMP0740, a stream restoration that reduces 991,192 lbs of sediment annually; and
- BMP0283, a stream restoration that reduces 744,000 lbs of sediment annually.

Table 14:TMDL summary for South River TSS

Results and TMDL WLA	Loads and Percent Reduction
2009 Baseline Load (lbs)	18,936,404
FY 24 Progress Load (lbs)	11,212,345
FY 25 Planned Load (lbs)	8,468,601
FY 24 Percent Reduction	40.79%
FY 25 Percent Reduction	55.28%
Target TMDL WLA Reduction	28.00%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the South River. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

5.Other West Chesapeake Bay

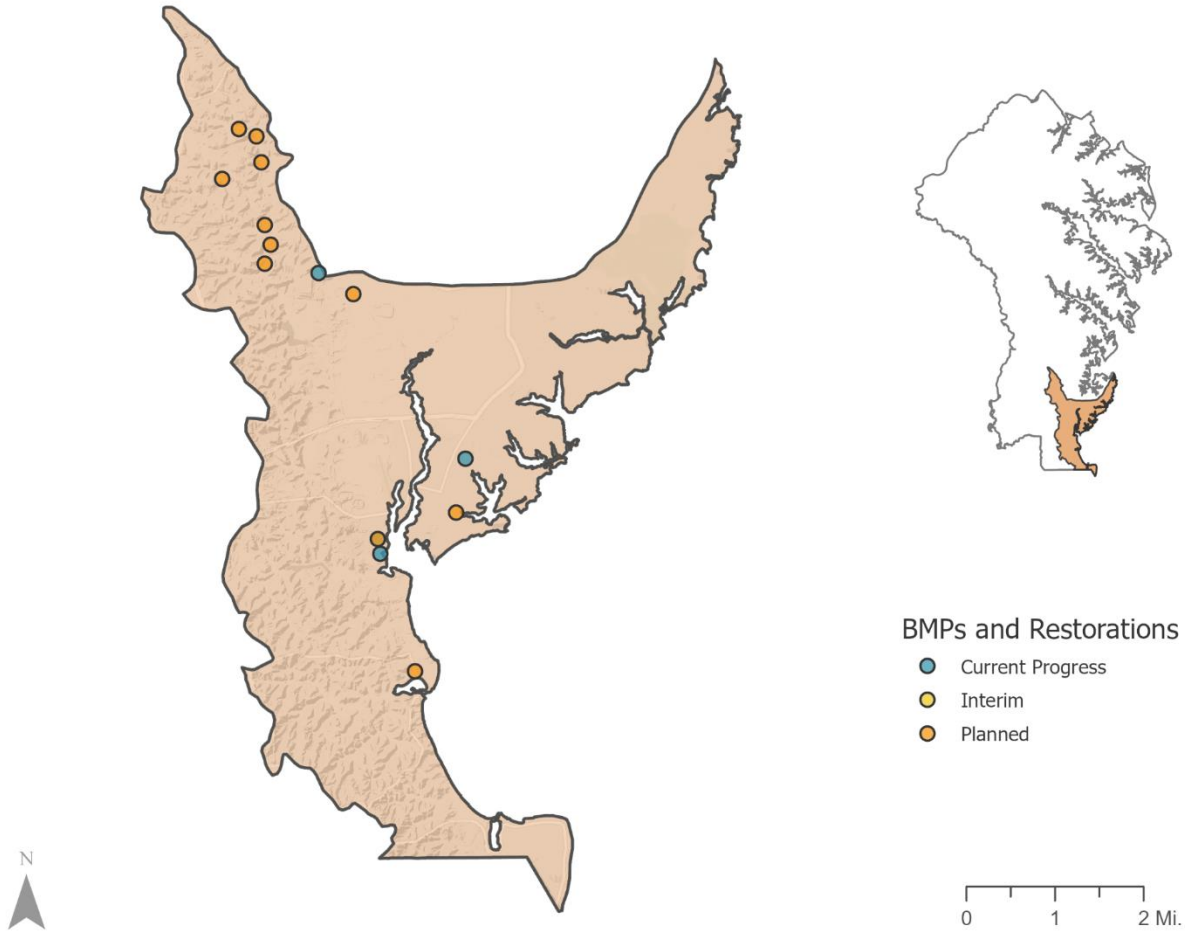

Figure 17: Map of the Other West Chesapeake Bay TSS TMDL watershed

The Other West Chesapeake is situated in the southeastern portion of the County, and shares political boundaries with Calvert County (Figure 17). The Anne Arundel County portion of the Other West Chesapeake watershed is approximately 14,662 acres (22.9 square miles) in area and contains approximately 100 total miles of streams.

The target sediment load for the Other West Chesapeake watershed is 7,363,965 pounds per year - a 33% reduction from the baseline by 2030. Current FY 23 progress shows a reduction of 142,586 pounds (1.3%). Planned restoration will result in a further 3,648,551 lbs of reduction, resulting in a total of 34.49% reduction by the completion year (Table 15).

The Other West Chesapeake watershed FY 23 progress reduction (1.3%) was achieved via street sweeping (~0.1 lane miles), storm drain cleaning (~1,057 pounds), two stormwater management

practices, and two stream restorations (563 linear feet). The planned reduction consists of 11 stream restorations (14,055 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the Other West Chesapeake Bay are:

- BMP0185, a stormwater management BMP that reduces 76,048 lbs of sediment annually;
- BMP0320, a stream restoration that reduces 38,312 lbs of sediment annually; and
- BMP0771, a stream restoration that reduces 27,380 lbs of sediment annually.

Table 15:TMDL summary for Other West Chesapeake Bay TSS

Results and TMDL WLA	Loads and Percent Reduction
2009 Baseline Load (lbs)	10,990,993
FY 24 Progress Load (lbs)	10,848,572
FY 30 Planned Load (lbs)	7,362,957
FY 24 Percent Reduction	1.30%
FY 30 Percent Reduction	33.01%
Target TMDL WLA Reduction	33.00%

In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the Other West Chesapeake Bay. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

6.West River

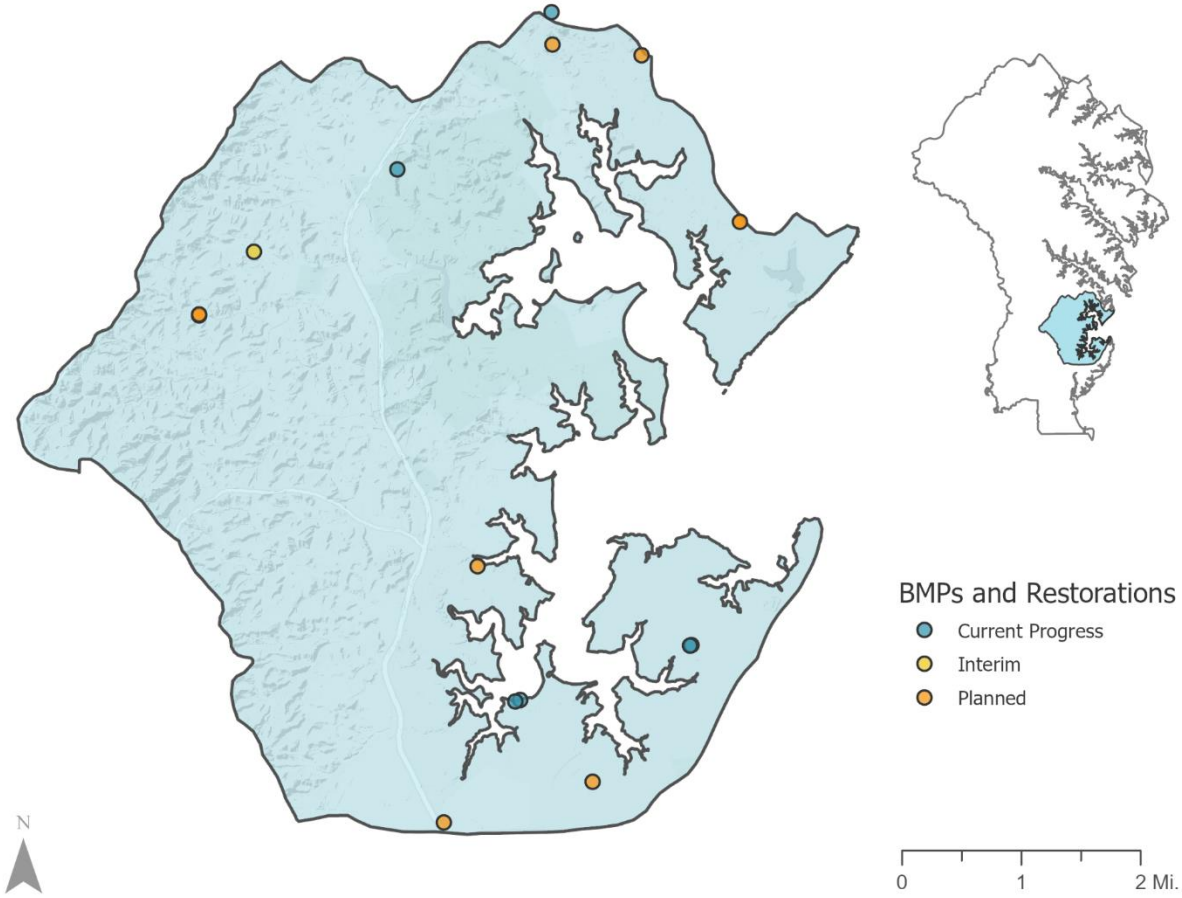

Figure 18: Map of the West River TSS TMDL watershed

The Non-Tidal West River watershed is located in the southeastern part of Anne Arundel County, and consists of two major segments - the West River and the Rhode River (Figure 18). The Non-Tidal West River watershed is approximately 15,623 acres (24.4 square miles) and contains approximately 62 miles of streams, 33 miles of which are perennial streams.

The target sediment load for the West River is 7,150,214 pounds per year - a 22% reduction from the baseline by 2030. Current FY 24 progress shows a reduction of 60,786 pounds (0.66%). Total interim programmed and planned restoration will result in a further 1,974,542 pounds of reduction, resulting in a total of 22.20% reduction by the completion year (Table 16).

The West River FY 24 progress reduction (0.66%) was achieved via street sweeping (~0.1 lane miles), storm drain cleaning (~758 pounds), four stormwater management practices, one land cover conversion BMP (0.08 acres) and one stream restoration (1,400 linear feet). The interim

programmed and planned reduction consists of seven stormwater management practices and three stream restorations (5,380 linear feet) and will achieve compliance with the TMDL. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest sediment reductions in the West River are:

- BMP0259, a stream restoration that reduces 46,364 lbs of sediment annually;
- BMP0725, a stormwater management BMP that reduces 4,535 lbs of sediment annually;
- BMP0069, a stormwater management BMP that reduces 3,760 lbs of sediment annually.

Table 16:TMDL summary for West River TSS

Results and TMDL WLA	Loads and Percent Reduction
2009 Baseline Load (lbs)	9,166,941
FY 24 Progress Load (lbs)	9,106,155
FY 30 Planned Load (lbs)	7,131,613
FY 24 Percent Reduction	0.66%
FY 30 Percent Reduction	22.20%
Target TMDL WLA Reduction	22.00%

Anne Arundel County received MDE approval of the West River Watershed Sediment TMDL Implementation Plan on August 14, 2023 with recommendations for revision. MDE's recommendations will be taken into consideration with the update to the plan. An updated plan will be submitted to MDE prior to the end of the current MS4 permit expiration date, November 4, 2026. In 2024 the County initiated a contract to update all nine of its Sediment TMDL implementation plans including the West River. The plan updates will present progress toward achieving the SW-WLA and strategies for maintaining the SW-WLA once achieved.

B. Nutrient TMDLs

Required load reductions and progress load reductions for the Baltimore Harbor TN and TP TMDL are presented in Figure 8. Figure 9 shows the breakdown of load reductions by BMP type for FY 24 progress load reductions, programmed load reductions, and planned load reductions. As shown in Figure 9, the majority of load reductions come from stormwater management BMPs and stream restorations.

1.Baltimore Harbor

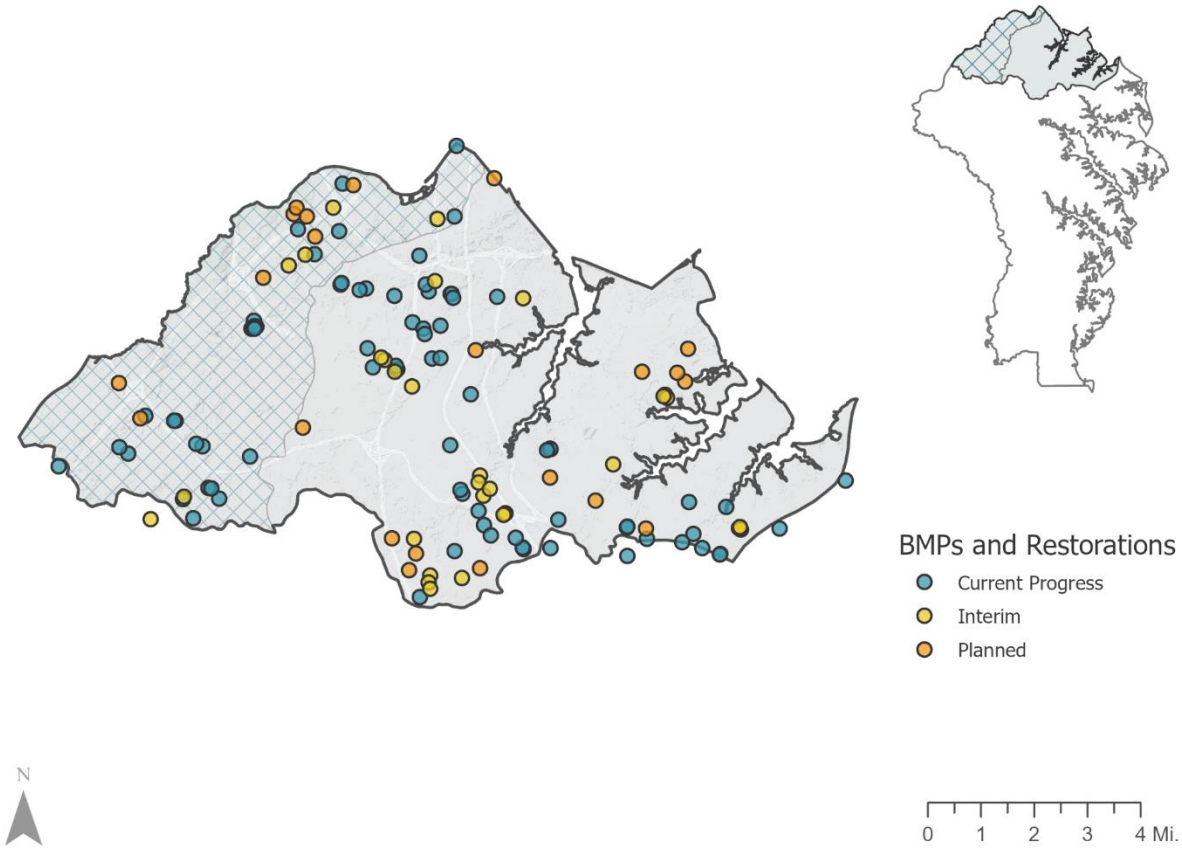

Figure 19: Map of the Baltimore Harbor TN and TP TMDL watershed

The Baltimore Harbor Watershed is situated in the northern portion of the County, and shares political boundaries with Baltimore City, Baltimore, Carroll, and Howard Counties (Figure 19). The

Anne Arundel County portion of the Baltimore Harbor watershed is approximately 45,134 acres (70.5 square miles) in area and contains approximately 202 total miles of stream reaches.

The target Total Nitrogen (TN) load for the Baltimore Harbor is 232,941 pounds per year - a 15% reduction from the baseline by 2030. Current FY 24 progress shows a reduction of 9,358 pounds (3.41%). Total interim programmed and planned restoration will result in a further 32,010 pounds of reduction, resulting in a total of 15.10% reduction by the completion year (

Table 17).

The target Total Phosphorus (TP) load for the Baltimore Harbor is 18,380 pounds per year - a 15% reduction from the baseline by 2030. Current FY 24 progress shows a reduction of 1,484 pounds (6.86%). Total interim programmed and planned restoration will result in a further 5,868 pounds of reduction, resulting in a total of 34.00% reduction by the completion year (Table 18).

The Baltimore Harbor FY 24 progress reductions for both TN and TP were achieved via street sweeping (~93.7 lane miles), storm drain cleaning (~138,264 pounds), 67 stormwater management practices, five land cover conversion BMPs (3.14 acres) and nine stream restorations (8,248 linear feet). The interim programmed and planned reduction consists of 29 stormwater management practices and 23 stream restorations (55,553 linear feet) and will achieve compliance with both the TN and TP TMDLs. See Appendix C for information on individual projects.

The top three implemented projects that provide the greatest TN reductions in the Baltimore Harbor are:

- BMP0268, a stream restoration that reduces 1,683 lbs of TN annually;
- BMP0198, a stormwater management BMP that reduces 977 lbs of TN annually; and
- BMP0291, a stream restoration that reduces 696 lbs of TN annually.

The top three implemented projects that provide the greatest TP reductions in the Baltimore Harbor are:

- BMP0291, a stream restoration that reduces 321 lbs of TP annually;
- BMP0268, a stream restoration that reduces 167 lbs of TP annually; and
- BMP0198, a stormwater management BMP that reduces 121 lbs of TP annually.

Table 17:TMDL summary for Baltimore Harbor TN

Results and TMDL WLA	Loads and Percent Reduction
1995 Baseline Load (lbs)	274,049
FY 24 Progress Load (lbs)	264,691
FY 30 Planned Load (lbs)	232,681
FY 24 Percent Reduction	3.41%
FY 30 Percent Reduction	15.10%
Target TMDL WLA Reduction	15.00%

Table 18:TMDL summary for Baltimore Harbor TP

Results and TMDL WLA	Loads and Percent Reduction
1995 Baseline Load (lbs)	21,624
FY 24 Progress Load (lbs)	20,140
FY 30 Planned Load (lbs)	14,272
FY 24 Percent Reduction	6.86%
FY 30 Percent Reduction	34.00%
Target TMDL WLA Reduction	15.00%

Anne Arundel County began work in FY24 on updating the County's 2016 Baltimore Harbor Watershed Nutrient TMDL Implementation Plan, pursuant to MDE's "General Guidance for Local TMDL Stormwater Wasteload Allocation Watershed Implementation Plans, August 2022". The update was completed in 2024 and is being submitted to MDE for review and comment with the County's 2024 Annual MS4 Report. The updated plan is included in Appendix H of this Countywide TMDL Stormwater Implementation Plan.

VI. Bacteria TMDL Progress

The location of the 19 waterways with EPA-approved TMDLs associated with bacteria impairments are presented in Figure 20. Fecal coliforms are identified as the cause of impairment in 15 of the 19 waterways. E. coli and Enterococci are identified as the impairments in the remaining four watersheds (Table 19).

Due to the number of bacteria TMDLs, and because the four source categories (pet waste, wildlife, human, and livestock) were represented in all the impaired waterbodies, Anne Arundel County chose to develop a single consolidated implementation plan to address all 19 bacteria TMDLs.[2]

A summary of FY24 bacteria TMDL implementation progress can be found in Appendix F.

[2] www.aacounty.org/departments/public-works/wprp/watershed-assessment-and-planning/chesapeake-bay-tmdl/index.html

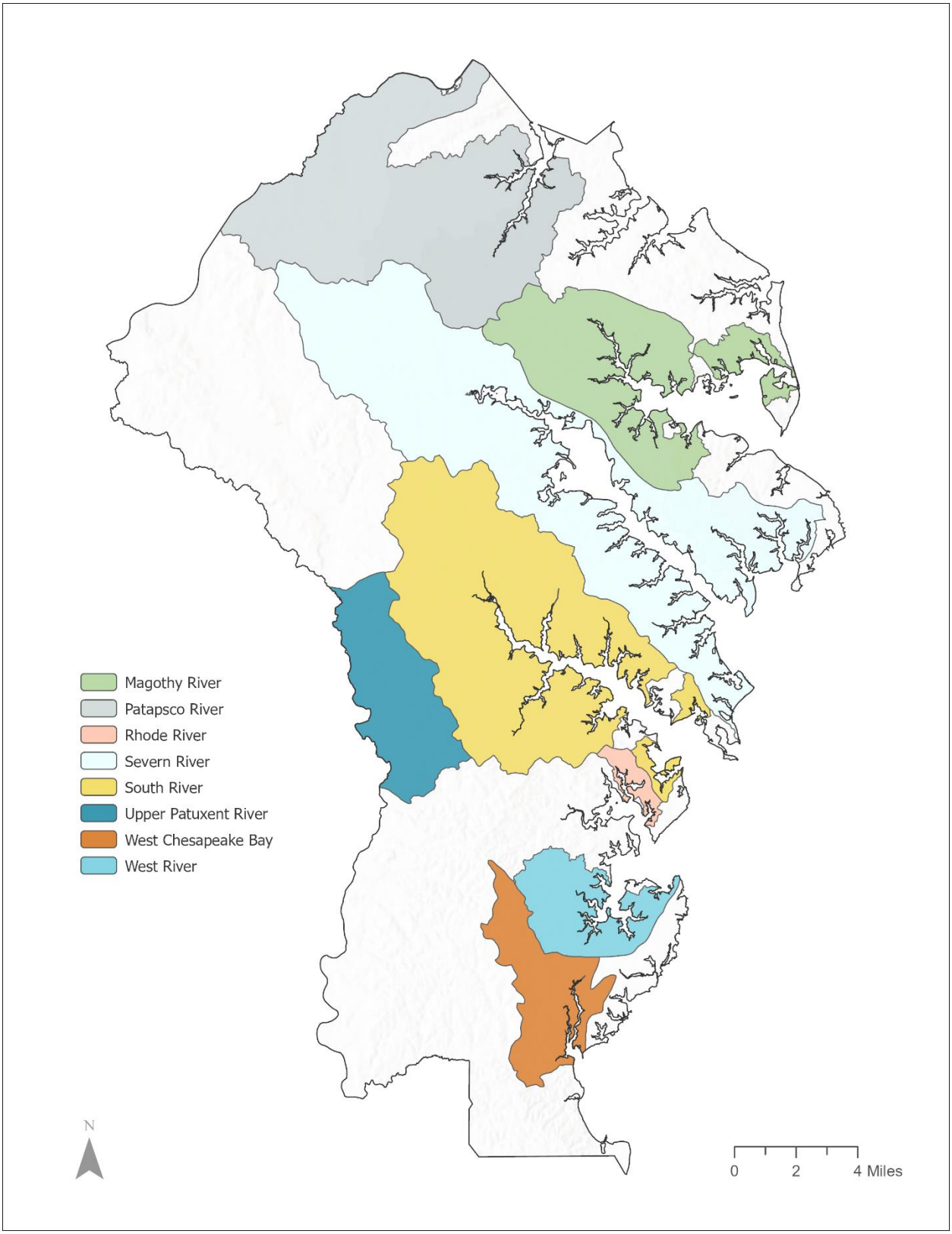

Figure 20: Map of the Bacterial TMDL watersheds in Anne Arundel County

Table 19:List of Bacterial TMDLs in Anne Arundel County

Location	Approval Date	Impairment	% Reduction Required*
Magothy River Mainstem	February 20, 2006	Fecal coliform	12.8
Magothy River/Forked Creek	February 20, 2006	Fecal coliform	26.3
Magothy River/Tar Cove	February 20, 2006	Fecal coliform	0.0
Patapsco River/Furnace Creek	March 10, 2011	Enterococci	77.7
Patapsco River/Marley Creek	March 10, 2011	Enterococci	75.7
Patapsco River Lower North Branch, 8 Digit WS 02130906	December 3, 2009	E. coli	20.7
Upper Patuxent River, Subsegment of 8 Digit WS 0213114	August 9, 2011	E. Coli	22.3
Rhode River/Bear Neck Creek	February 20, 2006	Fecal coliform	43.3
Rhode River/Cadle Creek	February 20, 2006	Fecal coliform	72.2
Severn River Mainstem, Subsegment of 8 Digit WS 02131002	April 10, 2008	Fecal coliform	19.0
Severn River/Mill Creek	April 10, 2008	Fecal coliform	86.0
Severn River/Whitehall & Meredith Creeks	April 10, 2008	Fecal coliform	90.0
South River/Duvall Creek	November 4, 2005	Fecal coliform	45.6
South River, Subsegment of 8 Digit WS 02131003	November 4, 2005	Fecal coliform	29.5
South River/Ramsey Lake	November 4, 2005	Fecal coliform	59.3
South River/Selby Bay	November 4, 2005	Fecal coliform	0.0
W. Chesapeake Bay/Tracy & Rockhold Creeks	February 20, 2006	Fecal coliform	81.6
West River, Subsegment of 8 Digit WS 02131004	February 20, 2006	Fecal coliform	35.3
West River/Parish Creek	February 20, 2006	Fecal coliform	53.1

*Based on the MDE published TMDL documents for bacteria impaired watersheds in Anne Arundel County and Anne Arundel County's *Total Maximum Daily Load Restoration Plan for Bacteria, February 2017.* Percent reductions required for the Patapsco and Upper Patuxent are for the Anne Arundel County portion only.

A. Restoration Strategies

Two restoration strategies are implemented in Anne Arundel County to achieve bacteria TMDL compliance. The first strategy (Tier A) addresses the human sources of bacteria originating from effluent from poorly maintained septic systems, sanitary sewage overflows (SSOs), and illicit discharges of wastewater into storm drains. The second strategy (Tier B) addresses non-human sources of bacteria originating from as pet, wildlife, and livestock excrement.

1.Tier A Strategies

a. Illicit Detection and Elimination

The County's Illicit Discharge Detection and Elimination (IDDE) program requires that approximately 150 outfalls are evaluated each year. In FY 24, the County evaluated a total of 172 outfalls. Four of the outfalls had a confirmed illicit discharge.

b. Sanitary Sewer Overflow Abatement

The County has a program to upgrade the sanitary sewer system to improve its reliability. These upgrades aim to abate SSOs and reduce the discharge of human bacteria to surface water. In FY 24, four (4) sewer pumping station (SPS) upgrade projects were completed in watersheds with a bacteria TMDL. There are currently 10 active SPS upgrade projects in watersheds with a bacteria TMDL that are scheduled to be completed in future fiscal years. In FY 24, 48 SSOs were reported throughout the County, with 25 of those occurring within bacteria TMDL watersheds.

c. Septic Retirement

The County aims to retire 20-40 septic systems per year, and replace these systems with connection to the sanitary sewer system. In FY 24, the County retired 24 septic systems, 23 of which were located in watersheds with a bacteria TMDL. Additionally, 26 previously unreported connections dating back to 2021 will be reported in FY24 (23 in Bacteria TMDL watersheds). Between FY2017 and FY2024, the County has connected a total of 211 private septic systems to the public sewer system (170 in Bacteria TMDL watersheds). A list of all septic-to-sewer connections can be found in Appendix D.

d. Monitoring

For the current permit term, the County opted to fund the pooled monitoring initiative for bacteria research in lieu of conducting bacteria trend monitoring. There are several bacteria monitoring programs in the County to assess impairment in local waterways and to confirm water quality improvements resulting from BMP and programmatic implementation. These efforts include the following programs:

- Anne Arundel County Department of Health's bi-weekly monitoring of public bathing beaches from Memorial Day through Labor Day.
- Monitoring in the Rhode River/Bear Neck Creek to assess water quality impacts associated with the conversion of the Mayo Water Reclamation Facility from water treatment plant to pumping station
- Bacteria monitoring as part of post-restoration storm and baseflow monitoring at two CIP restoration projects - Furnace Branch and Cowhide Branch - both of which are located in bacteria TMDL watersheds
- Weekly monitoring conducted by volunteers in conjunction with Anne Arundel Community College ("Operation Clearwater") during the summer swimming season.
- "No Mow" Monitoring at 14 stormwater ponds

Moving forward, the County intends to focus future bacteria reduction efforts in TMDL watersheds where SW-WLAs have not yet been met, to the greatest extent possible. The County understands that current literature suggests that the effectiveness of BMPs to reduce bacteria levels is variable, and largely dependent on site location and BMP type. The County will continue to collaborate with MDE and other jurisdictions to investigate the effect that BMPs have on reducing bacteria concentrations. Where such opportunities exist, the County will continue to employ BMPs with other controls to reduce bacteria loads.

For more information regarding Tier A Strategies please refer to Appendix F.

2.Tier B Strategies

a. Stormwater Retrofits

The County has a program to implement new stormwater management practices and retrofit pre-2002 stormwater management facilities. This program concurrently treats stormwater from impervious surfaces and reduces pollutants such as bacteria. A total of 411 projects (including 169 upland BMPs and 242 septic connections) have been completed in watersheds with a bacteria

TMDL between 2012 and 2024. Ten upland BMPs were completed in bacteria TMDL watersheds in FY24, and six new planned BMPs were reported. The list of BMPs can be found in Appendix D.

b. Street Sweeping and Inlet Cleaning

Bureau of Highways maintains an enhanced street sweeping and inlet cleaning program. The program focuses on routes that consist of curbed streets in impaired watersheds, routes that lack engineered stormwater quality controls, and areas considered to be pollutant hotspots. 181.28 lane miles are swept within the County's Bacteria TMDL watersheds.

Table 20:Lane miles of street sweeping within Bacterial TMDL watersheds

Watershed	Lane Miles Swept
Magothy River Mainstem	21.43
Magothy River/Forked Creek	2.19
Magothy River/Tar Cove	1.00
Patapsco River/Furnace Creek	22.16
Patapsco River/Marley Creek	24.89
Patapsco River Lower North Branch, 8 Digit WS 02130906	34.04
Upper Patuxent River, Subsegment of 8 Digit WS 0213114	0.75
Rhode River/Bear Neck Creek	0.11
Rhode River/Cadle Creek	0.00
Severn River Mainstem, Subsegment of 8 Digit WS 02131002	47.92
Severn River/Mill Creek	4.70
Severn River/Whitehall & Meredith Creeks	0.46
South River/Duvall Creek	0.40
South River, Subsegment of 8 Digit WS 02131003	20.96
South River/Ramsey Lake	0.23
South River/Selby Bay	0.00
W. Chesapeake Bay/Tracy & Rockhold Creeks	0.03
West River, Subsegment of 8 Digit WS 02131004	0.00
West River/Parish Creek	0.00

c. Pet Waste Management

Among the Tier B strategies, pet waste management achieves the greatest load reductions for the least cost, and continues to be a major focus of the County's bacterial management strategy. The County continued to highlight proper pet waste management practices through its social media outlets and at community events and presentations throughout FY 24, and continues to make pet waste stations available to interested communities for no cost. Moving forward, primary

responsibility for implementing the pet waste outreach and education campaign will be transferred to the Anne Arundel Watershed Stewards Academy, while the County will still provide materials and support for outreach initiatives. The County will maintain its role in implementation oversight and reporting associated with Bacteria SW-WLA achievement activities. In FY24, 11 pet waste stations were provided to interested residential neighborhoods throughout the County, with one (1) located in a bacteria TMDL watershed. In FY24, the County also supported one community outreach initiative by providing a pet waste station, an outreach kit, yard signs, and other materials.

a. Canada Goose Management

The County added a new Tier B strategy to its Bacteria TMDL Implementation Plan update in FY23. This Tier B strategy involves management of non-migratory Canada goose populations at sites that contain open water. In FY23 the County initiated a "No Mow" Program on targeted County owned stormwater management ponds to discourage large and long-term congregations of Canada geese at stormwater ponds, particularly during nesting and molting seasons. In April 2024, the County began a multi-year study that aims to quantify the bacteria and nutrient reduction efficiency of "no mow" vegetated buffers at select stormwater ponds throughout the County.

For more information on stormwater pond "no mow" buffers study and other Tier B Strategies please refer to Appendix F.

B. Magothy River (Mainstem, Forked Creek, and Tar Cove)

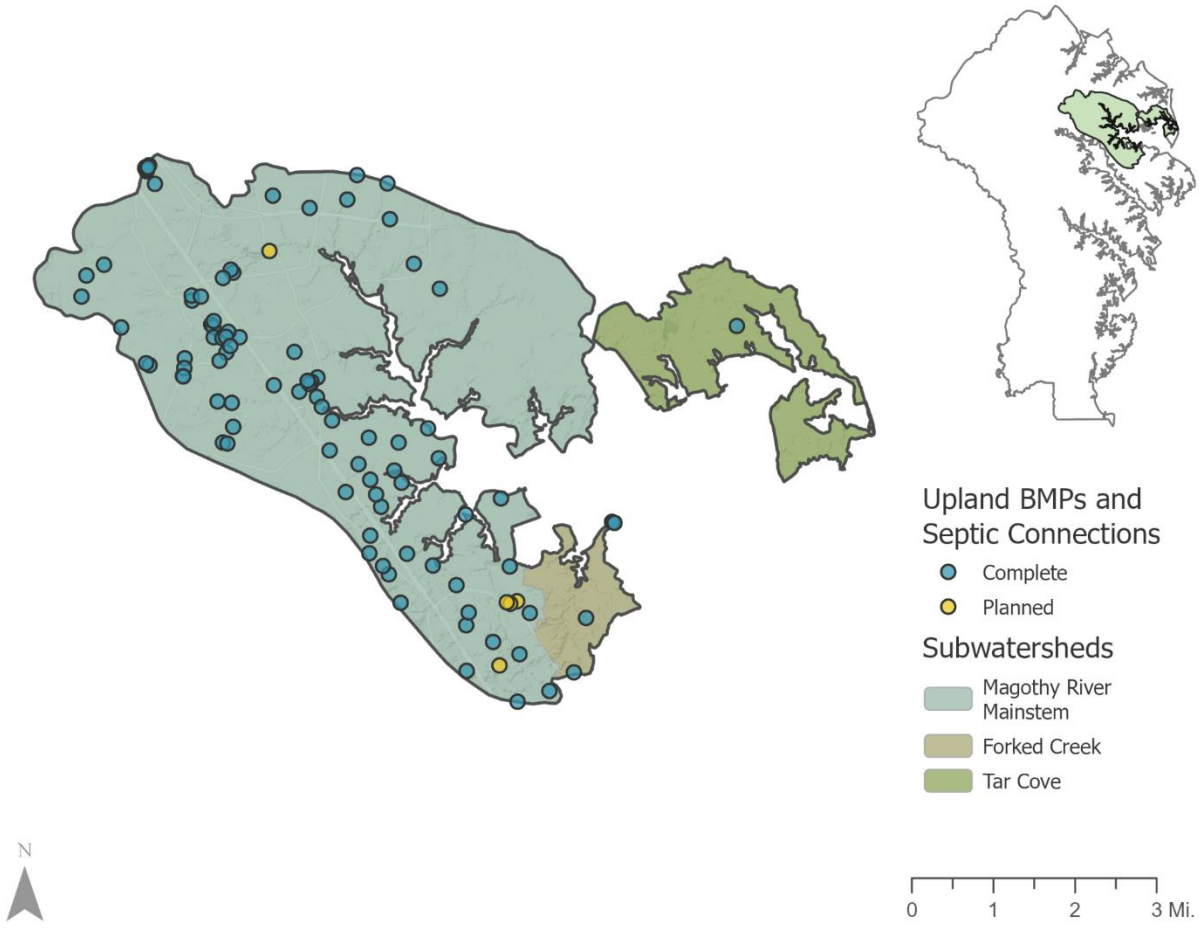

Figure 21: Map of the Magothy River Bacterial TMDL watershed

The Magothy River Watershed is located in the northeastern portion of the County near Pasadena and Severna Park (Figure 21). The Magothy River flows southeast into the Chesapeake Bay near Gibson Island. Forked Creek is a small tidal creek located along the south shoreline of the river near its mouth and has a mainstem approximately 2.5 miles long. Tar Cove is on the opposite (north) shoreline, adjacent to Sillery Bay. The primary land use category in all three watersheds is residential. All three watersheds are impaired by fecal coliforms.

<u>Upland Restoration BMPs and Septic Connections in the Magothy River:</u>

Magothy Mainstem:	89 complete, 5 planned
Forked Creek:	5 complete
Tar Cove:	1 complete

C. Patapsco River (Patapsco Lower North Branch, Furnace Creek, and Marley Creek)

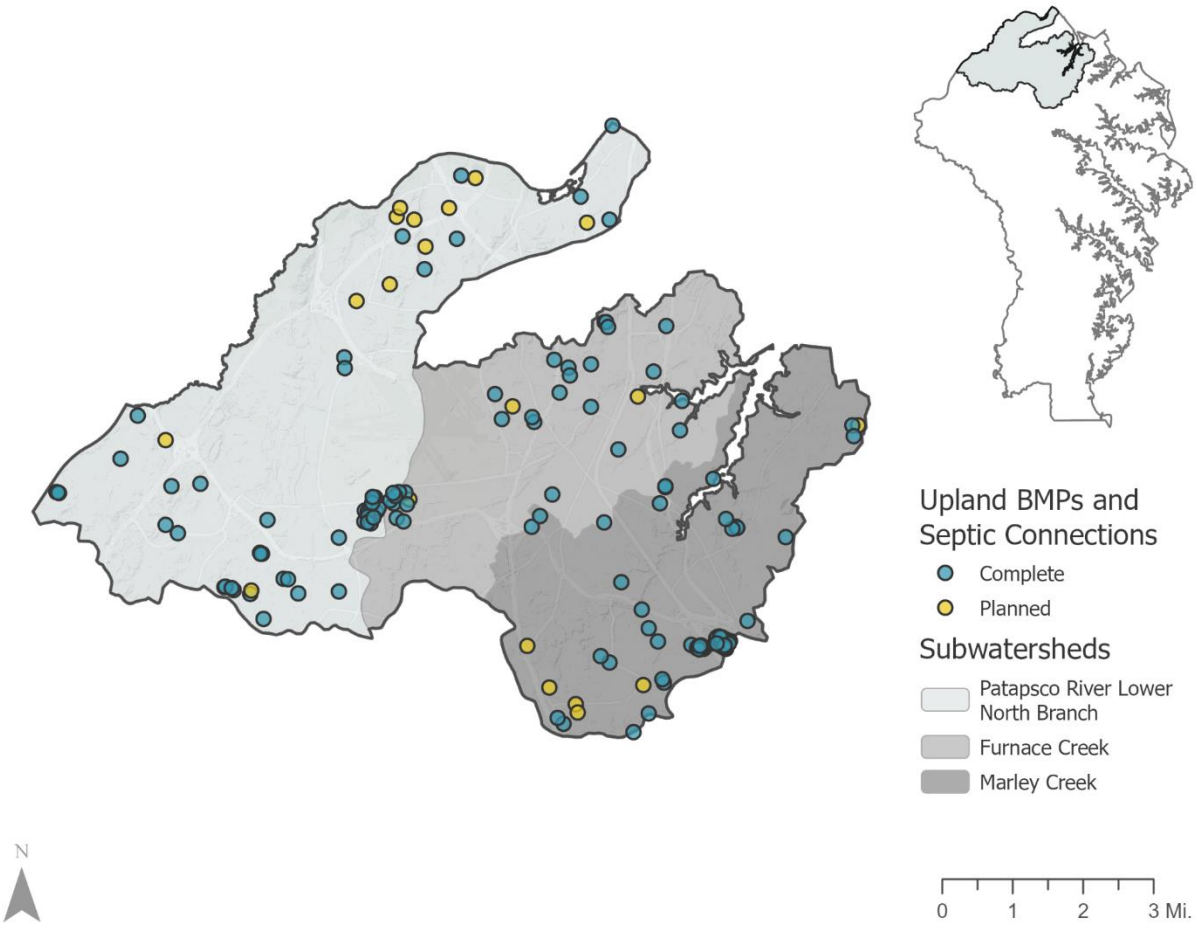

Figure 22: Map of the Patapsco River Bacterial TMDL watershed

Anne Arundel County's portion of the Patapsco Lower North Branch (LNB) watershed is approximately 15,270 acres (23.9 square miles) in area and contains approximately 96 miles of streams (Figure 22). The Patapsco River LNB is generally non-tidal, and is one of two bacteria TMDL watersheds impaired by E. coli.

Furnace Creek and Marley Creek are tidal creeks in the northern portion of the County, a few miles east of Baltimore-Washington International airport. These two watersheds are similar in size (8,579 acres for Furnace Creek, 8,737 acres for Marley Creek), and are highly urbanized with much residential development. The Marley Creek and Furnace Creek watersheds are both impaired by enterococci.

Upland Restoration BMPs and Septic Connections in the Patapsco River:

Lower North Branch:	51 complete, 11 planned
Furnace Creek:	27 complete, 3 planned
Marley Creek:	64 complete, 6 planned

D. Upper Patuxent River

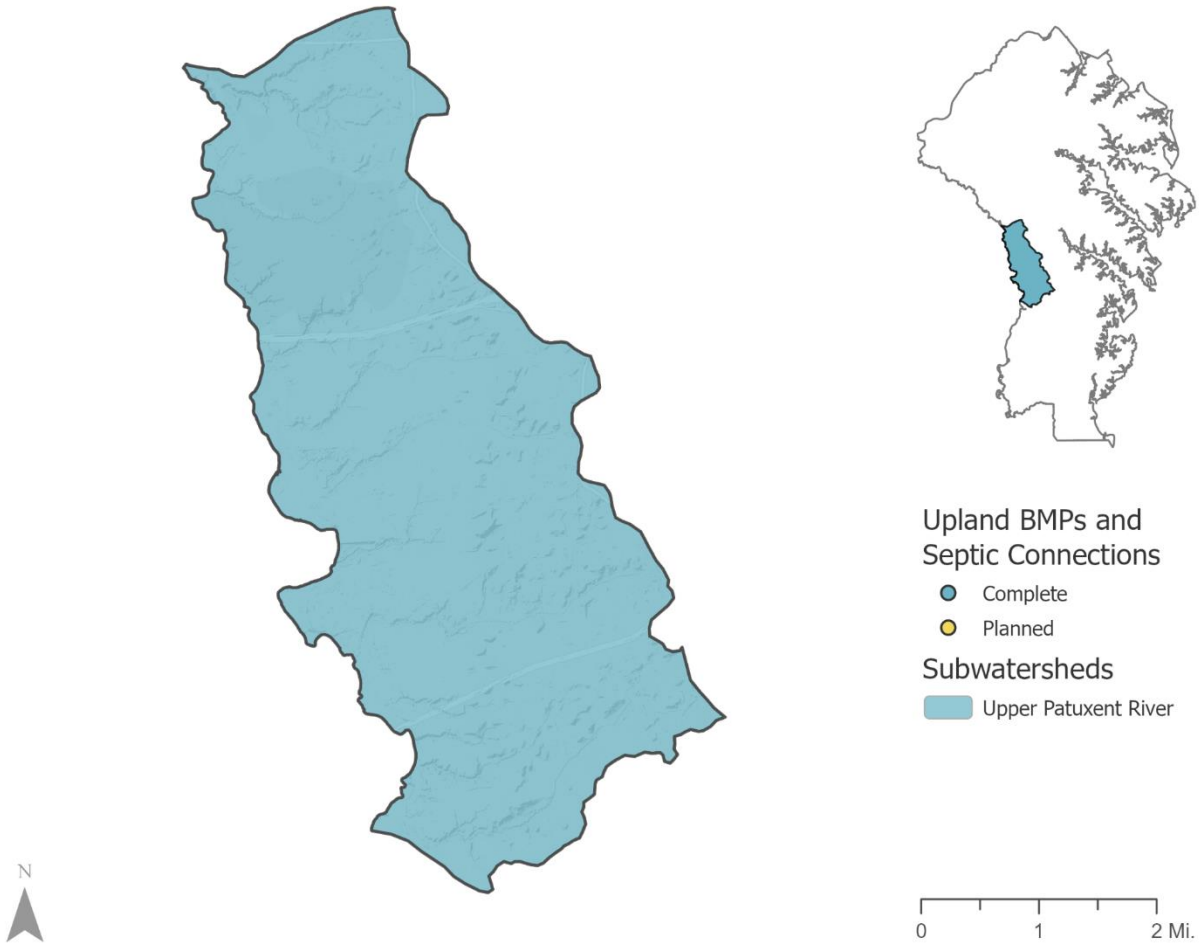

Figure 23: Map of the Upper Patuxent River Bacterial TMDL watershed

The Upper Patuxent is situated in the western portion of the County (Figure 23). Anne Arundel County's portion of the Upper Patuxent watershed is approximately 22,420 acres (35.0 square miles) in area and contains approximately 90 total miles of perennial stream. The Upper Patuxent Watershed is one of two bacteria watersheds that are impaired by E. coli. No upland projects have been completed or planned.

E. Rhode River (Bear Neck Creek and Cadle Creek)

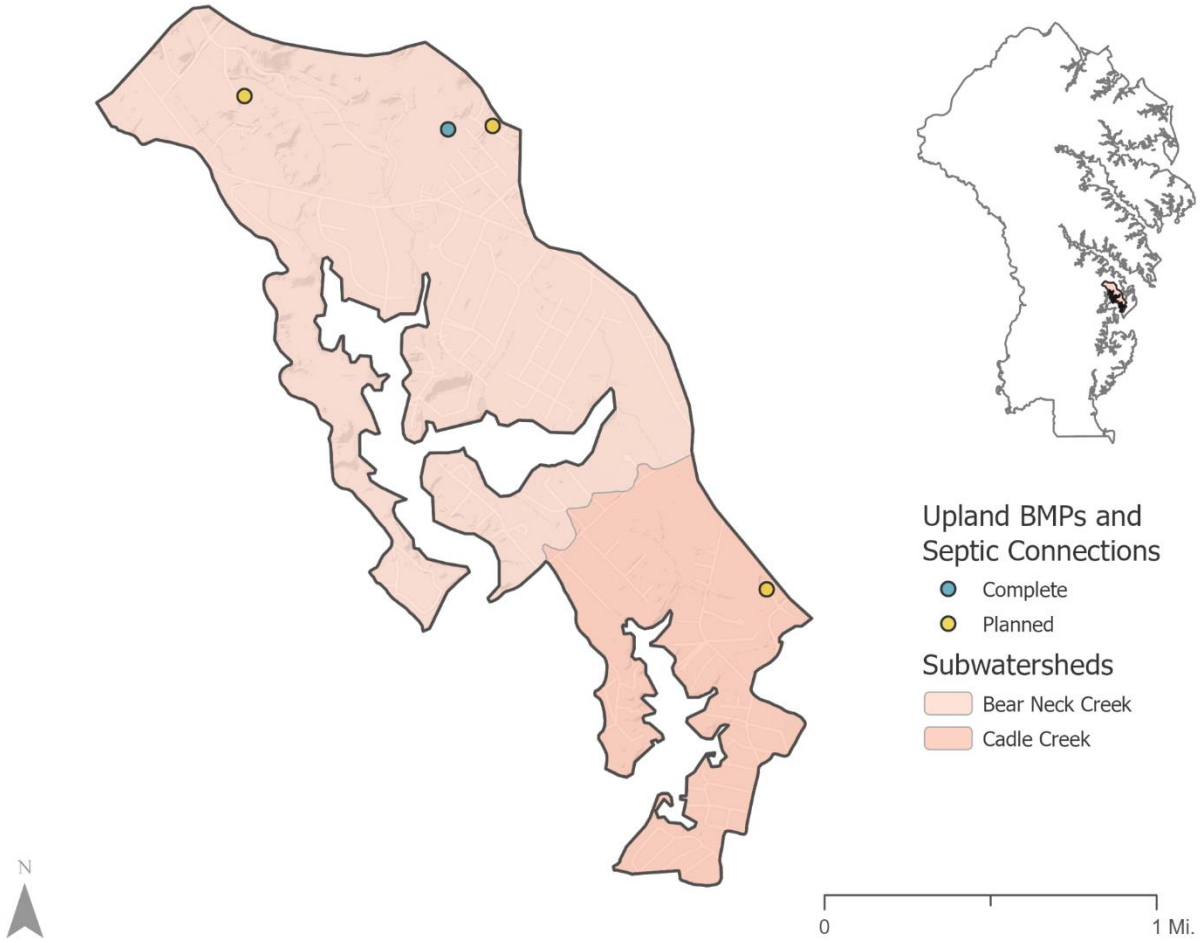

Figure 24: Map of the Rhode River Bacterial TMDL watershed

Bear Neck Creek and Cadle Creek are located in the Rhode River Watershed, in the southeastern part of Anne Arundel County (Figure 24). The Bear Neck Creek Watershed is 880 acres with 50 percent of its land use being residential, mainly consisting of the community of Mayo. The Cadle Creek Watershed is 320 acres, with approximately 70 percent of the land use is residential and 20 percent is impervious.

<u>Upland Restoration BMPs and Septic Connections in the Rhode River:</u>
Bear Neck Creek: 1 complete; 2 planned
Cadle Creek: 1 planned

F. Severn River (Mainstem, Mill Creek, and Whitehall and Meredith Creeks)

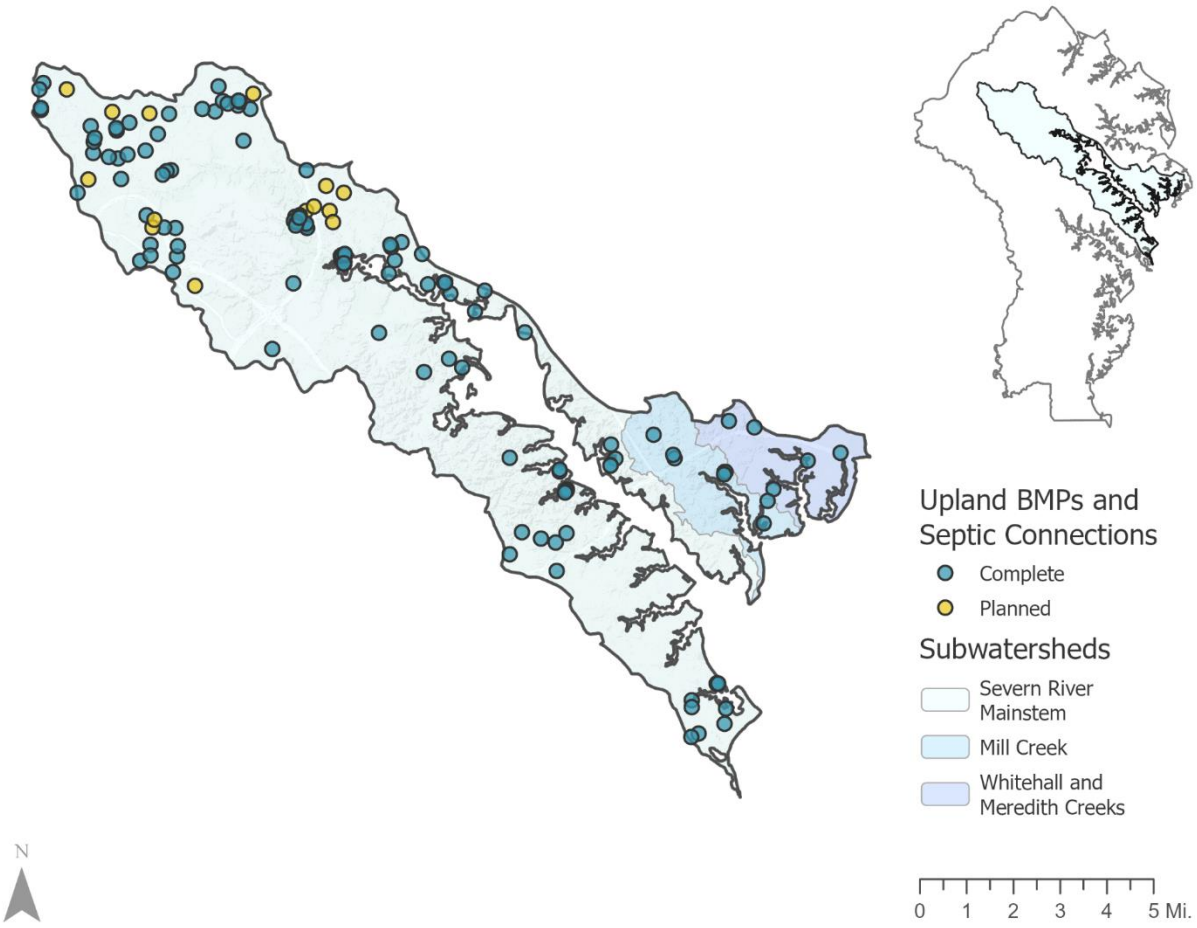

Figure 25: Map of the Severn River Bacterial TMDL watershed

The Severn River Mainstem flows from northwest to southeast across the center of the County, from the community of Severn at the headwaters to the city of Annapolis near the mouth (Figure 25). The total watershed area is 37,011 acres, and the dominant land uses are residential at 44 percent and forested at 35 percent. Mill Creek, Whitehall Creek, and Meredith Creek are all located a few miles northeast of the Severn River's mouth and discharge into the Chesapeake Bay just west of the Bay Bridge.

Upland Restoration BMPs and Septic Connections in the Severn River:

Severn Mainstem:	104 complete, 14 planned
Mill Creek:	8 complete
Whitehall and Meredith:	5 complete

G. South River (Mainstem, Duvall Creek, Ramsey Lake, Selby Bay)

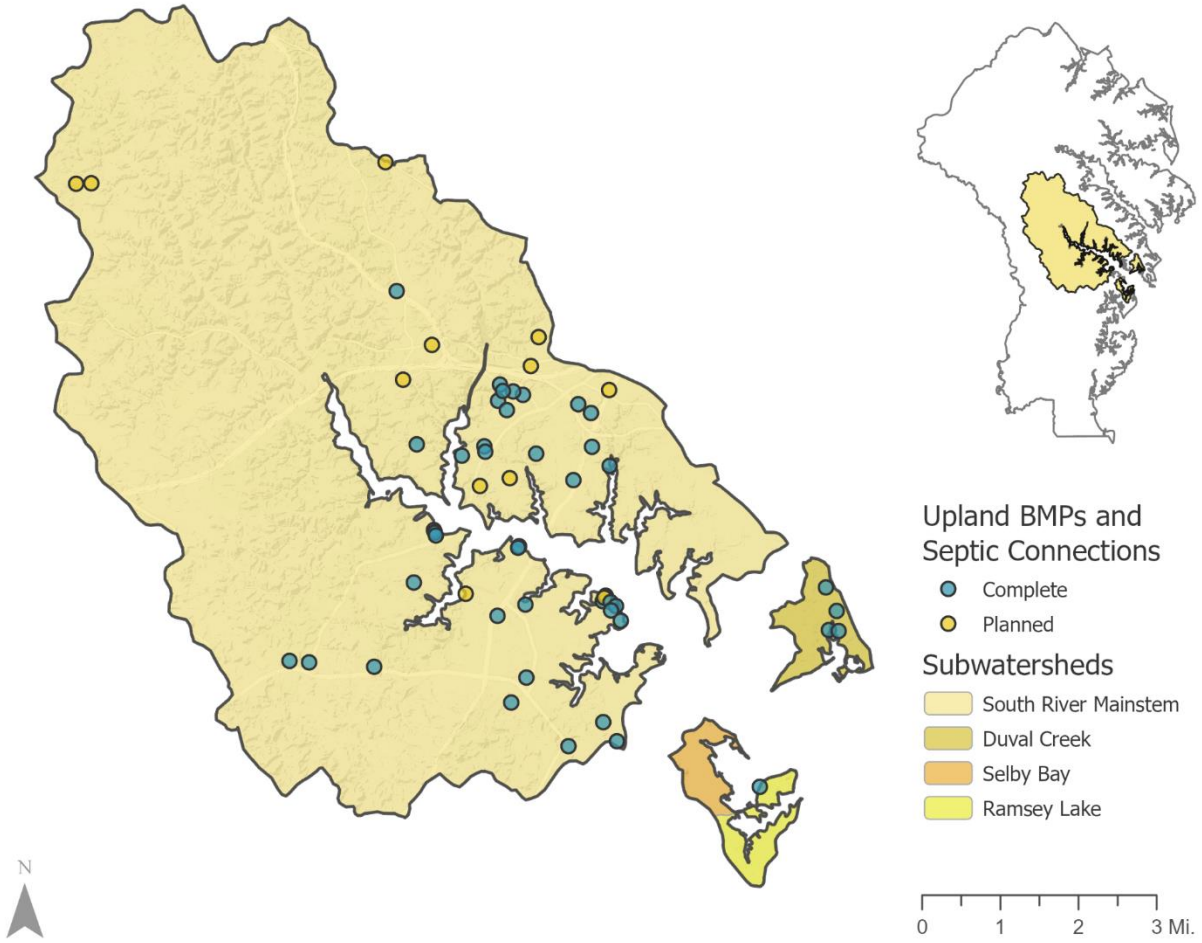

Figure 26: Map of the South River Bacterial TMDL watershed

The South River Watershed has four impaired waterways with approved bacteria TMDLs: the South River Mainstem, Duvall Creek, Ramsey Lake, and Selby Bay (Figure 26). The South River is located immediately south of the Severn River in the central portion of the County. Like the Severn, it flows from northwest to southeast. The headwaters are near the town of Crownsville. The mouth, where it discharges to the Chesapeake Bay, is near Thomas Point Park. Duvall Creek, Ramsey Lake, and Selby Bay are small embayments near the mouth of the South River.

Upland Restoration BMPs and Septic Connections in the South River:

South River:	38 complete, 13 planned
Duval Creek:	4 complete
Ramsey Lake:	1 complete
Selby Bay:	None

H. West Chesapeake Bay (Tracy and Rockhold Creeks)

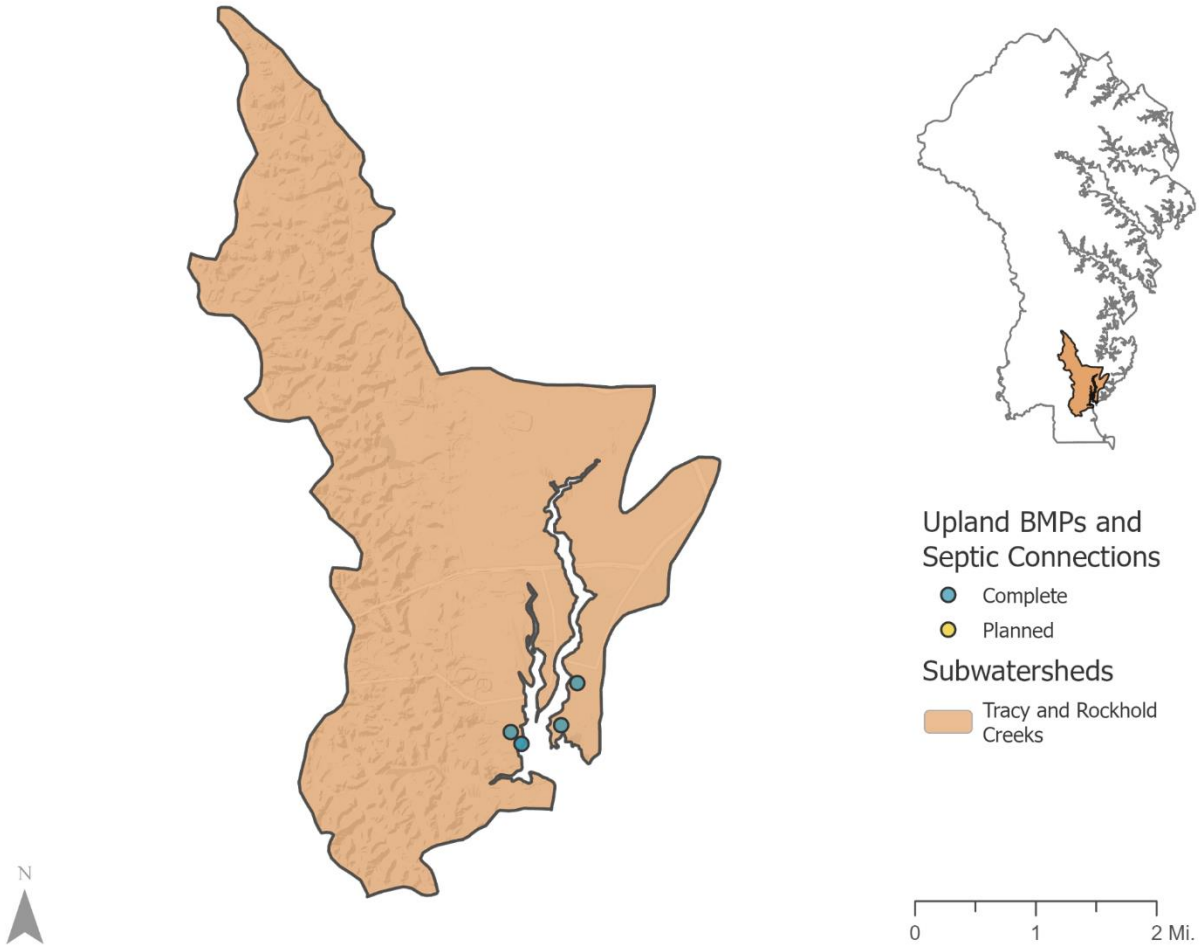

Figure 27: Map of the Other West Chesapeake Bay Bacterial TMDL watershed

Tracy and Rockhold Creeks, situated in the southeastern portion of the County (Figure 27), have a combined watershed area of 7,962 acres, about half of which is forest.

<u>Upland Restoration BMPs and Septic Connections in the West Chesapeake Bay:</u>
Tracy and Rockhold Creeks: 5 complete

I. West River (Mainstem and Parish Creek)

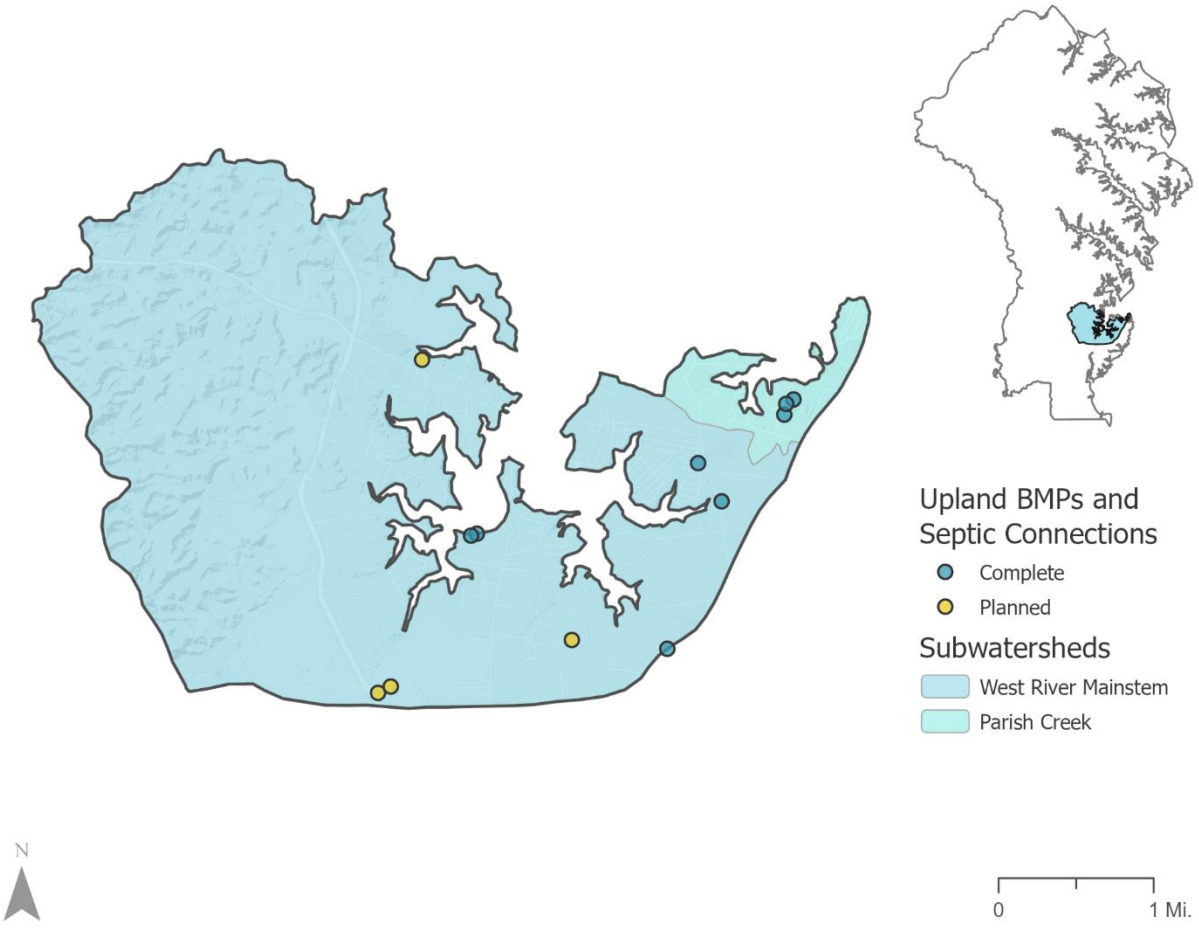

Figure 28: Map of the West River Bacterial TMDL watershed

The West River is a tidal estuary and river system in the southeast portion of the County near the town of Galesville (Figure 28). Parish Creek is a small estuary east of the West River, near the town of Shady Side. Parish Creek drains an area of 324 acres.

<u>Upland Restoration BMPs and Septic Connections in the West River:</u>
West River: 5 complete; 4 planned
Parish Creek: 3 complete

VII. PCB TMDL Progress

The locations of the two PCB TMDLs within Anne Arundel County are presented in Figure 29.

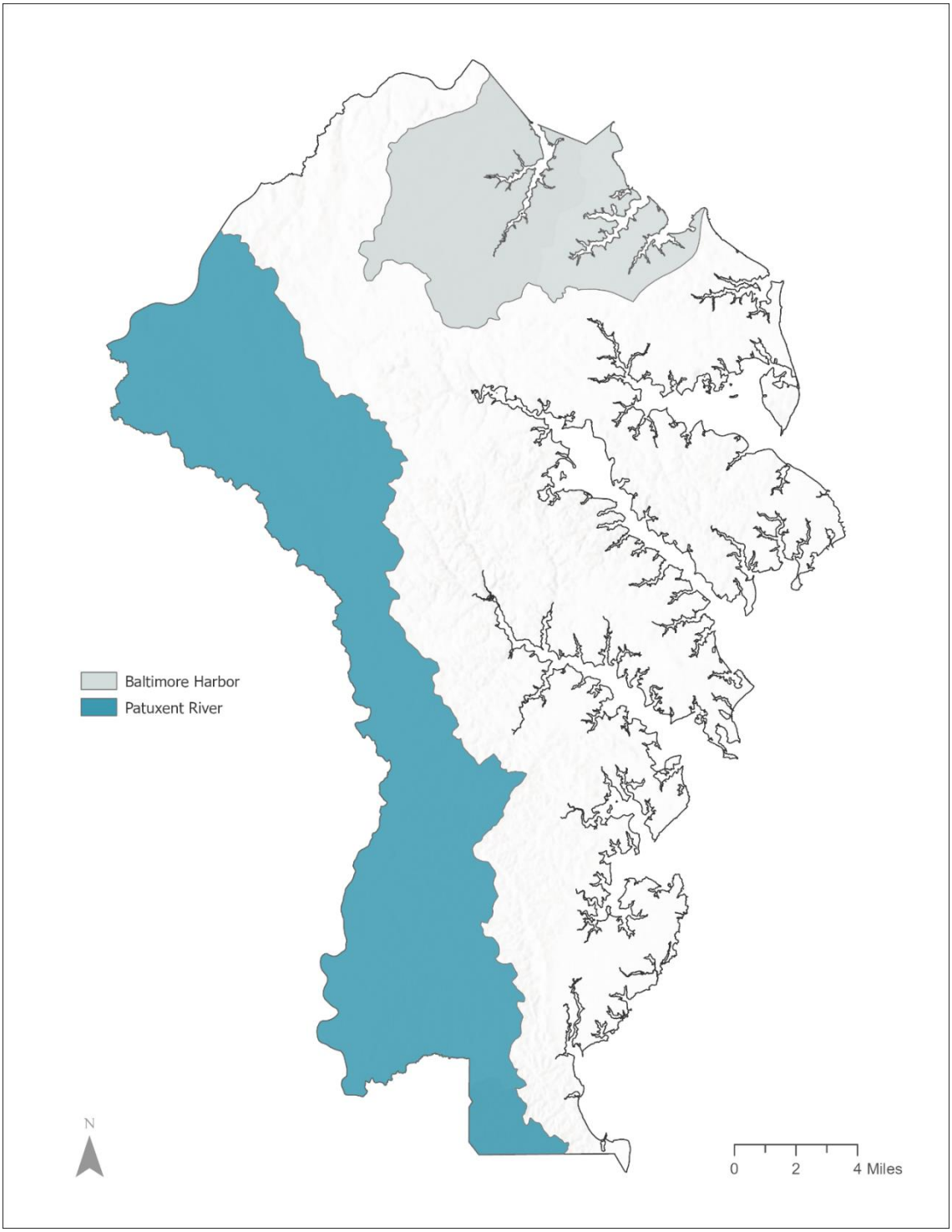

Figure 29: Map of the PCB TMDL watersheds in Anne Arundel County

A. Baltimore Harbor

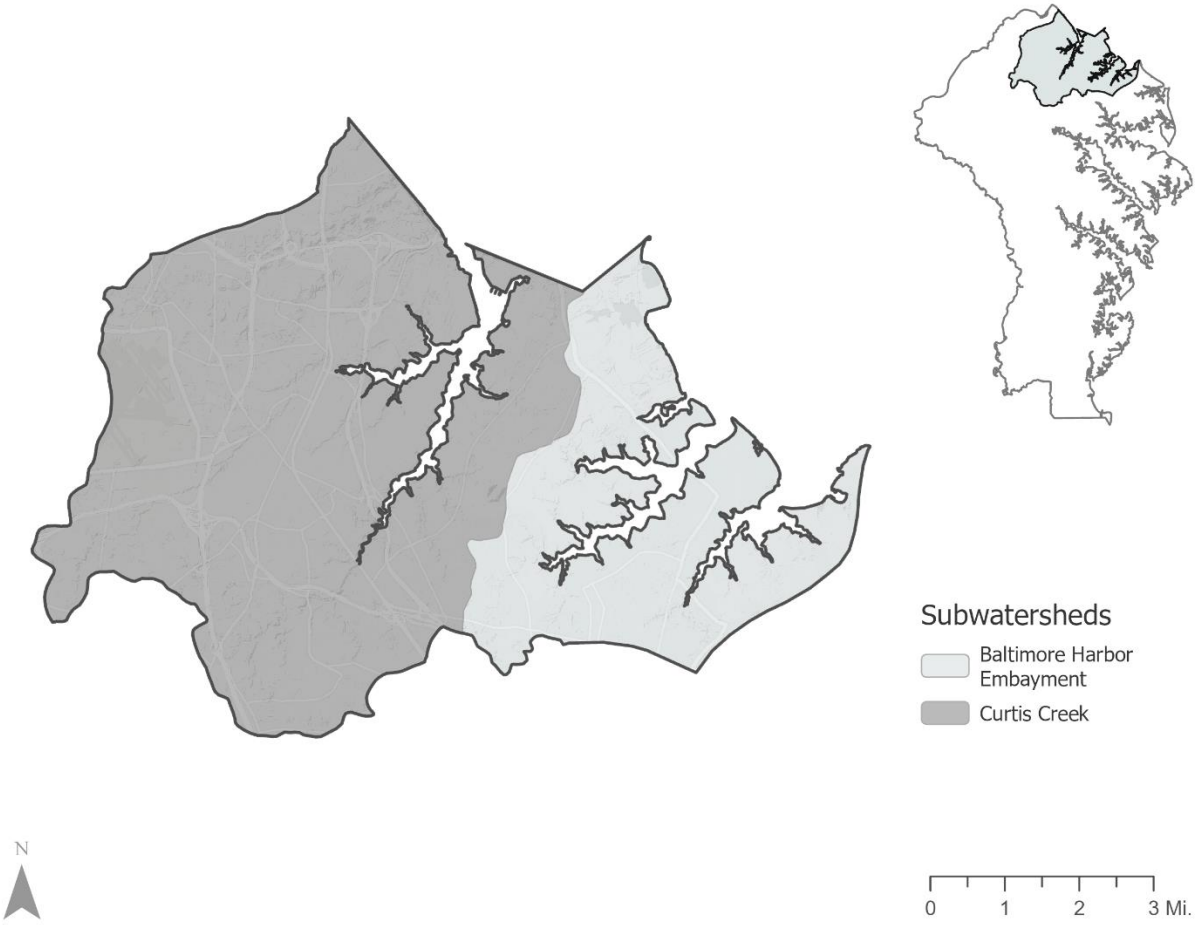

Figure 30: Map of the Baltimore Harbor PCB TMDL watershed

In 2012, the EPA approved a TMDL for Polychlorinated Biphenyls (PCBs) for the Baltimore Harbor, Curtis Creek/Bay, and Bear Creek portions of the Patapsco River Mesohaline Tidal Chesapeake Bay Segment (Figure 30). The PCB TMDL addresses PCBs in fish tissue for the Baltimore Harbor Embayment, and PCBs in fish tissue and sediment for Curtis and Bear Creeks. The percent required reduction in PCBs by 2025 is 93.5% for Curtis Creek and 91.1% for Baltimore Harbor. The County's actions towards implementation to date are as follows:

- **2016 -** The County submitted its Baltimore Harbor and Curtis Creek/Bay Polychlorinated Biphenyls (PCB) TMDL Restoration Plan as part of the County's 2016 MS4 Annual Report.

- **2019 –** The County completed the development of a targeted PCB Action Strategy (see *AACoActionStrategy070819.pdf* in Appendix G).
- **Spring 2020 -** Following completion of the action strategy the County engaged in collaboration with MDE's Integrated Water Planning Program staff, and University of Maryland Baltimore County (UMBC) staff, to develop a trackback-style monitoring strategy utilizing passive samplers to measure time-integrated freely dissolved PCB water column concentration to further investigate watershed sources of PCB. An agreement was reached in which MDE would provide funding for field personnel, while UMBC would provide training, materials and analysis towards the monitoring effort.
- **Fall 2020 -** Phase 1 of the monitoring effort began in September 2020 with the deployment of passive surface water PCB sampling devices at 17 locations within the Sawmill Creek watershed (a sub-watershed of the Baltimore Harbor PCB TMDL watershed), as well as two reference locations outside of the TMDL watershed. In November 2020, sediment grab samples were also collected at each of the 19 sites and in early December 2020, the passive samplers were retrieved. During FY 23 analysis of both surface water and sediment was conducted by UMBC staff. Phase I sampling was successful in identifying two tributaries contributing significant PCB loads. The full results of the Phase I monitoring are presented in the *PCB Source Tracking in Anne Arundel County, January 12, 2022* report included in Appendix G.
- **2022 -** Based on the results of the 2020 Sawmill Creek monitoring, a Phase II sampling plan was finalized in May 2022 in an effort to further determine geographic sources of PCBs. Phase II monitoring began in July 2022 and concluded in November 2022. Phase II monitoring utilized combinations of standard water column passive sampling, stream bed sediment sampling, pore water sampling, short time passive sampling and suspended sediment sampling (using sediment traps) at 12 sites in the two tributaries of concern identified in Phase I. Phase II sampling was again a collaborative effort between the County, UMBC, and MDE. Sample analysis and data reporting was conducted by UMBC. Results of the Phase II monitoring are presented in the *PCB Source Tracking Report in Anne Arundel County – Phase II* report included in Appendix G.
- **2024 -** The County is once again collaborating with UMBC on a Phase III monitoring effort in the Sawmill Creek watershed, as well as Phase I monitoring efforts in the Cabin Branch and Marley Creek subwatersheds. Deployment of samplers in all three watersheds occurred in November 2024. The County is also currently working on updating the Baltimore Harbor and Curtis Creek/Bay PCB TMDL Implementation Plan, which will be submitted to MDE for review in 2025.

B. Patuxent River

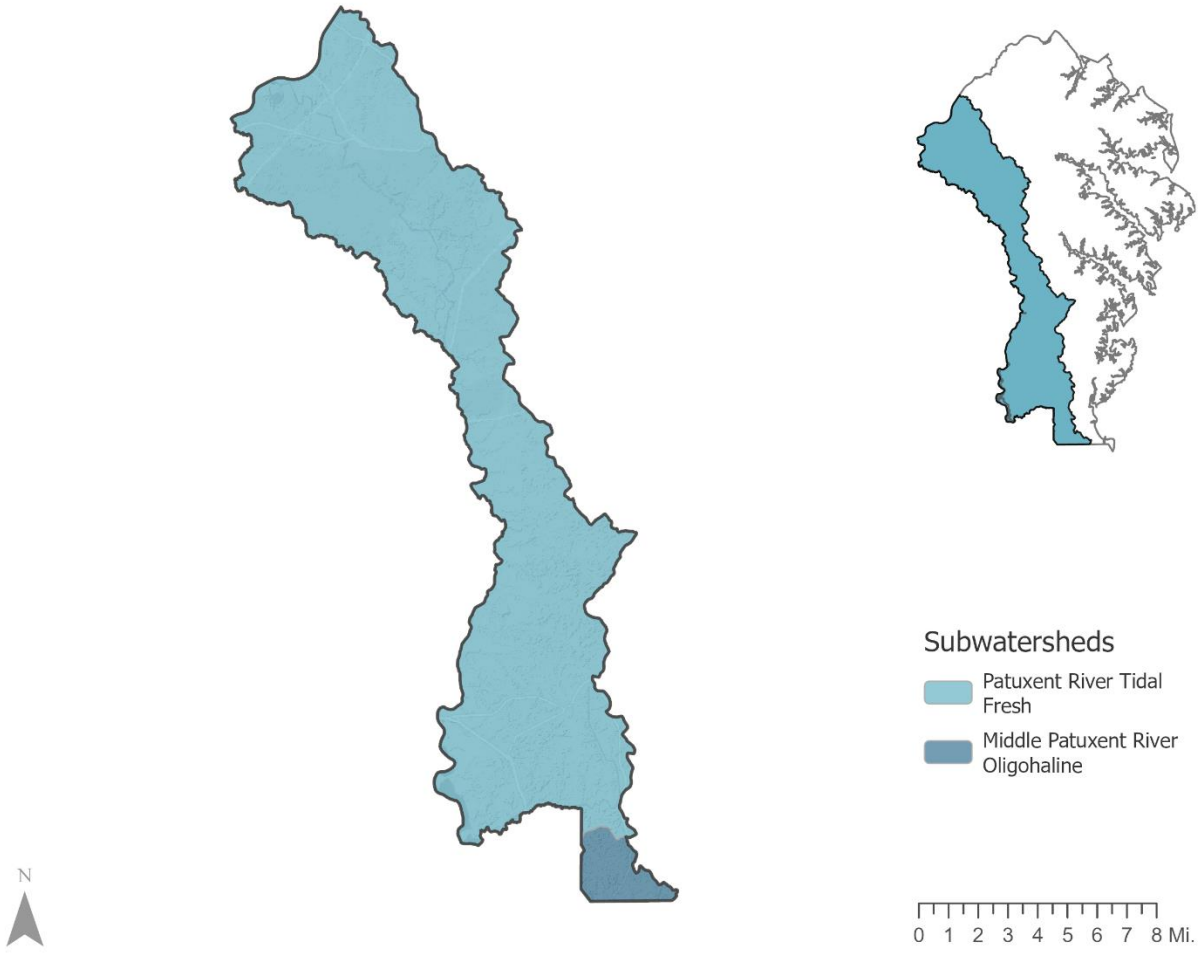

Figure 31: Map of the Patuxent River PCB TMDL watershed

The Total Maximum Daily Load of Polychlorinated Biphenyls in the Patuxent River Mesohaline, Oligohaline and Tidal Fresh Chesapeake Bay Segments was approved by EPA September 19, 2017 and requires a 99.9 % reduction in PCB loads (Figure 31). In 2020, Anne Arundel County submitted a draft restoration plan for the Tidal Fresh portion of the watershed that lies within the boundary of Anne Arundel County for MDE review. Subsequent comments and responses to those comments occurred from November 2020 through July 2021.

It is anticipated and generally understood that a 99.9% reduction in PCB loading may not be feasible given the current limited understanding of PCB sources, the ubiquitous presence of PCBs in watershed soils, and the limitations of stormwater systems to control PCB loading. Therefore, MDE is looking to local jurisdictions to document annual progress on PCB source tracking and programmatic implementation. Initiation of source tracking along with programmatic strategies

identified within the plan will demonstrate progress towards the PCB load reduction goal. The plan will be reviewed and potentially revised annually based on monitoring results and implementation and load reduction progress. Per MDE guidance, completion of the plan was put on hold until MDE provided guidance on PCB monitoring.

Following MDE's issuance of "*Guidance for Developing Local PCB TMDL Stormwater Wasteload Allocation Watershed Implementation Plans, August 2022*", the County completed a watershed implementation plan to address PCBs in the Patuxent watershed in September 2024. The plan builds upon the County's 2020 implementation plan, meets MDE's requirement to update previously approved TMDL plans by the end of the current MS4 permit term, and will include the development of a PCB monitoring plan in collaboration with Howard County, Montgomery County, Prince George's County, and Maryland State Highway Administration. All of these partners are subject to the Total Maximum Daily Load of PCBs in the Patuxent River Mesohaline, Oligohaline and Tidal Fresh Chesapeake Bay Segments. The final drafts of the *Patuxent River PCB TMDL Implementation Plan* and *Patuxent River PCB TMDL Phase I Subwatershed PCB Screening Sampling and Analysis Plan* documents, as well as the PCB source assessment desktop analysis spatial data package, are included in Appendix B for MDE review.

VIII. Adaptive Management Strategy

A. Overview

Anne Arundel County's strategy for making progress toward meeting SW WLAs is achieved through an adaptive management process that involves both quantitative assessment strategies (TIPP modeling and impairment monitoring) and qualitative assessment strategies (programmatic). The adaptive management process includes evaluating multiple aspects of the TMDL implementation process to incorporate new information and to refine benchmarks and milestones and to identify deficiencies. The County evaluates its implementation progress annually to identify and incorporate improvements. Progress is reported in the County's Countywide TMDL Stormwater Implementation Plan Annual Report as part of the County's MS4 Annual report submittal.

B. Countywide Management Strategy

The foundation for the County's restoration program was set forth in the County's Phase II Watershed Implementation Plan (WIP) in 2012 in response to the Chesapeake Bay TMDL following MDE's allocation of stormwater loads for nitrogen, phosphorus and sediment on September 15, 2011. The County's Phase II WIP identified programs, policies and practice, and established a commitment to implementation that ensures achievement of the nitrogen, phosphorus and sediment load reductions assigned to the County. The County's Phase II WIP set forth a strategy for implementation that identified statutory authority, capital projects, funding mechanisms and timelines for achieving its allocated loads using nitrogen as the keystone nutrient. The County's Phase II WIP was developed in consultation with and through coordination among the multiple stakeholders that comprised the Anne Arundel County WIP Team. The County adopted an edge of stream strategy to pursue load reductions associated with stormwater sector. The majority of the nutrient and sediment load reduction throughout the County's watersheds is anticipated to be achieved through implementation of this strategy as well as through execution of TMDL implementation/restoration plans. Further, this strategy is critical to restoring the functional capacity, efficiency, and overall health of the County's headwater streams with the goal of achieving stormwater wasteload allocations (SW-WLAs) and ultimately delisting impaired waterbodies.

1. Quantifiable SW-WLA Load Reduction Tools

Anne Arundel County's primary tool for achieving quantifiable SW-WLA reductions is its 6-Year Capital Improvement Program (CIP). Restoration projects are identified and included in the CIP budget each fiscal year. The CIP includes projects budgeted for design and construction for the

current fiscal year and projects programmed for the following 5 fiscal years. Projects programmed into the CIP budget were initially identified through comprehensive assessments of all of the County's watersheds. In developing these assessments, the County prioritized all watersheds as high, medium, low and very low for restoration and for preservation. To date the majority of the restoration projects identified in the County's Phase II WIP have been implemented. These projects are broadly classified as stream restoration projects, stormwater management retrofits, shoreline restoration and storm drain infrastructure maintenance and repair. In addition to restoration projects implemented through its CIP Program, the County has established a WPRP Restoration Grant Program that provides funding for NGO restoration projects.

2.Qualitative SW-WLA Load Reduction Tools

Anne Arundel County has several programs and strategies in place to assist in making further progress toward achieving SW-WLAs. These programs are considered "qualitative" because their benefits to load reduction are not easily quantifiable.

a. Stormwater Fee Credit Program

The County encourages property owners to install BMPs to manage stormwater. Eligible property owners have the opportunity to reduce their Watershed Protection and Restoration Fee (WPRF) assessments by up to 50% for proactive and sustainable uses of stormwater runoff controls. In addition, the BWPR established a WPRF Stormwater Remediation Fee Credit Agreement to provide credit to single-family property owners that have installed small-scale (e.g., under 5,000 sq. ft. land disturbance) stormwater BMPs on their property.

The Program's goals are to encourage practices that proactively and sustainably manage runoff on private property and support BWPR's goal to minimize the impact of land development on water resources.

b. BMP Preventative Maintenance and Inspection Program

The County conducts preventative maintenance inspections, according to COMAR 26.17.02, of all ESD treatment systems, structural stormwater management facilities, and stormwater conveyances, at least on a triennial basis. Documentation identifying the ESD systems and structural stormwater management facilities inspected, the number of maintenance inspections, follow-up inspections, the enforcement actions used to ensure compliance, the maintenance inspection schedules, and any other relevant information is submitted in the County's MS4 annual report. Preventative maintenance inspection responsibility is split between Department of Public Works (DPW) and Inspections and Permits (I&P) staff, with I&P staff responsible for the vast majority (approximately 95%) of facility inspections. Within DPW, achieving the required triennial

inspections involves identifying those facilities due for inspections and implementing a minimum inspection rate per month to ensure all required inspections are achieved. I&P staff utilize a similar protocol for identifying facilities to be inspected in any given year with a focus on those facilities on cycle for their triennial inspection. The State and County Stormwater Management Codes require preventive maintenance inspections once during the first year of operation and every three years thereafter for all stormwater management facilities. In addition to these inspections, the County's stormwater management inspection staff performs numerous site visits in response to property owners requesting guidance, to obtain permission for site access in some situations, and to follow up on required maintenance activities. The inspection staff also review previously issued and current correction notices to confirm and ensure compliance. When additional action is required to bring a facility into compliance, additional Phase I enforcement notices are issued as appropriate. The County's inspection process includes issuance of correction notices and Phase 1, 2, and 3 violation notices. Additional information relating to inspection and enforcement activities is provided annually in the SWM table of the MS4 Geodatabase, submitted with each NPDES MS4 Annual Report.

Alternative BMP inspections are compiled into a single table in the MS4 Geodatabase (AltBMPInspections). Among these are records for programmatic inspections associated with annual BMP practices (vacuum street sweeping, inlet and catch basin cleaning, and septic pumpouts), imagery reviews for shoreline stabilizations, site inspections for stream restorations, and septic system upgrade (SEPD) inspections which are conducted via a service provider visit from MDE's Best Available Technology Management Network (BATMN). SEPD inspection results are housed in MDEs BATMN database. Lastly, restoration stormwater BMPs are also subject to maintenance inspection to ensure their efficacy within the landscape.

c. Public Outreach and Education Program

The County maintains an aggressive public outreach and education program using social media platforms and in person events to engage its citizenry in addressing the impacts of stormwater. Additionally, the County founded and supports the Anne Arundel Watershed Stewards Academy to train Master Watershed Stewards to provide community outreach, education and engagement as well as to implement large and small-scale restoration projects and BMPs. The public outreach and education program achievements, and the WSA achievements, are annually documented in the County's NPDES MS4 Annual Report.

d. Effective land use decision implementation

Numerous land use plans drive management decisions in Anne Arundel County related to water quality.

- Plan2040 is the General Development Plan for Anne Arundel County. It sets the policy framework to protect the natural environment, shape development of the built environment, provide public services to promote healthy communities, and support a diverse, resilient economy.
- Region Plans are community-driven land use documents that build on Plan2040 in smaller areas. Region Plans evaluate community assets and needs, present a shared vision for the next 20 years, and make specific recommendations about planned land use, zoning, environmental protection, transportation improvements, public facilities, and community design.
- Green Infrastructure Master Plan guides voluntary actions to conserve a network of connected natural areas and to add trees and green spaces in underserved communities. Conservation of green infrastructure supports public health, recreation, wildlife, and water quality. The Plan includes a goal of conserving 5,000 acres of open space by 2030.
- The Environment Article, Title 9, Subtitle 5 of the Annotated Code of Maryland, requires each county to develop water supply and sewerage systems in accordance with a county master plan that specifies the extent, adequacy, sizing, staging, and other characteristics of such facilities so that they are in compliance with State laws relating to water pollution, environmental protection, and land use. The plan is required to be updated every 3 years. The most recent Water and Sewer Master Plan was adopted and enacted in June 2022.

e. IDDE Program

Through this Program, the County works to identify and eliminate potentially polluting non-stormwater discharges to the storm drain system.

C. Progress Assessment Methods

Anne Arundel County uses impairment specific methods to monitor progress toward achieving SW-WLAs. Modeling is used to determine progress for sediment and nutrient TMDLs while monitoring is used to determine progress for bacteria and PCB TMDLs.

Impairment	Modeling Method	Monitoring Method
Sediment & Nutrient	TMDL Implementation Progress planning (TIPP)	
Bacteria		Trend, Source Tracking
PCB		Track Back

1.Modeling Method

Anne Arundel County uses the TIPP model to assess and track progress toward meeting nutrient and sediment TMDLs. The TIPP model was developed by MDE in 2021 and functions as a calculator to estimate pollutant loads and to evaluate progress and implementation scenarios. As noted in Guidance for Developing Local Nutrient and Sediment TMDL SW-WLA watershed implementation plans, MDE requires jurisdictions to use this tool for consistency among load reduction calculation methodologies and ease of reporting progress. The TIPP model estimates load reduction at various points in the watershed planning process, allowing users to assess current progress and future BMP implementation. Land use specific loading rates are multiplied by an amount, which may be acres or systems depending of the load source, to calculate loads coming off the land. The land use loading rates used in this model are Chesapeake Bay Phase 6 CAST-Watershed Model No Action (No BMP) scenario loading rates aggregated at the 8-digit watershed scale by county and include streambed and bank (STB) loads determined by a variation of the method used to determine STB load in the MDE 2021 MS4 Accounting Guidance document. These loads account for inconsistencies in load distribution between the Phase 5 and 6 model.

The TIPP model estimates load reductions for nitrogen, phosphorus and total suspended solids at two different scales: Edge-of-stream (EOS) and Edge-of-tide EOT). EOS loads are calculated using the methods and BMP efficiencies recommended by the expert panels approved by the Chesapeake Bay Program. The EOS scale is used for local TMDL modeling and the County's implementation plans. The EOT scale incorporates in-stream uptake, processing, and transport that affects nutrient and sediment loads from the upstream source to the receiving water body. EOT loads in the model are calculated using Chesapeake Bay Phase 6 Watershed Model No Action scenario delivery factors at the Maryland 8-digit watershed scale. Land use is a critical factor in models used to assess TMDL compliance. Land cover data from the National Land Cover Database (NLCD) is used to quantify land cover acreage. Because NLCD land cover classifications are inconsistent with the Phase 6 Chesapeake Bay Watershed Model land cover classes, the back-

casting method developed by Baltimore County (*Back-casting Land Cover Approved Methodology, Version 06.04.2021*) is applied to NLCD data used within the TMDL progress modeling.

Modeling methodologies may change in the future because of updated versions of the Bay Model, which could change loading rates, or because of crediting changes directed by MDE or Expert Panels, that would affect load reduction calculations or BMP percent efficiencies. The TIPP model was originally developed by MDE, and if information is updated in the model MDE will release a new version of the model. Revised components of the updated version will then be incorporated into the County's TIPP workbooks. The County will stay up–to-date on decisions impacting local TMDL pollutant modeling and will revise TMDL implementation plans as necessary.

2.Monitoring Methods (Bacteria)

Anne Arundel County currently has 19 individual bacteria TMDL watersheds. Fifteen (15) of those watersheds are listed with fecal coliform as the impairment indicator based on USE II water quality standards. The TMDLs for these 15 watersheds were established using data from MDE monitoring stations in shellfish harvesting areas. The remaining four (4) TMDL waterbodies are designated as recreational USE I, with E. coli listed as the impairment indicator for two watersheds and enterococci listed as the impairment indicator for two watersheds.

On March 1, 2022 the County notified MDE of its intent to modify Pooled Monitoring Program participation beginning in FY23 (July 1, 2022); the County would participate in the Watershed Assessment Monitoring PMP for the bacteria monitoring component. The Watershed Assessment Monitoring MOU Amendment for FY23 through FY26 and a copy of the March 1, 2022 correspondence was provided in Appendix F of the FY23 MS4 Annual Report**.** There are no further amendments to this MOU and the MOU remains in effect through June 30, 2026.

For the duration of FY24, Anne Arundel County participated in the Pooled Monitoring Program in lieu of bacteria monitoring, therefore there is no associated bacteria monitoring methodology.

3.Monitoring Methods (PCB)

a. PCB Source Tracking

Anne Arundel County has begun to assess and track progress toward meeting PCB SW-WLAs using a source tracking strategy. Anne Arundel County currently has stormwater WLAs for three drainages under two individual PCB TMDLs – the Baltimore Harbor, Curtis Creek/Bay, and Bear Creek Portions of Patapsco River Mesohaline Tidal Chesapeake Bay Segment TMDL, and the

Patuxent River TMDL. The TMDLs were established using fish tissue and sediment PCB concentration data from MDE's monitoring program.

Anne Arundel County has performed extensive GIS-centric desktop analyses to identify potential PCB sources within both TMDL watersheds. Priority subwatersheds were chosen for initial PCB source tracking based on the results of the desktop analysis. Initial monitoring locations were also identified using desktop analysis and then field verified for accessibility and monitoring feasibility.

In the Baltimore Harbor, Curtis Creek/Bay, and Bear Creek TMDL watershed, the initial phase of PCB monitoring entailed the use of passive samplers for water column concentration and sediment grabs for sediment and pore water concentrations at 15 non-tidal locations (including two reference sites) and two tidal locations in the Sawmill Creek subwatershed. Passive samplers were left in place between 82 to 96 days to allow for equilibration before retrieval. Sediment samples were composited from three grabs (left, right, and center channel) at each location. PCB analysis was performed at the congener level based on USEPA SW846 method 8082A. Results of the initial phase of monitoring showed two tributaries as primary sources of PCBs. A second phase of monitoring was then devised to further investigate these two tributaries in an attempt to narrow down the ultimate source(s) of PCBs. In addition to water column and sediment sampling, the second phase of monitoring also included sediment pore water sampling using passive samplers, and sampling of suspended sediments at select stormwater outfalls. A third phase of sampling utilizing long-term passive samplers, short-term passive samplers deployed during storm events, and suspended sediment traps began in November 2024. Additionally in November 2024, Phase I monitoring began in two other subwatersheds (Marley Creek and Cabin Branch) utilizing long-term passive samplers and suspended sediment traps.

To date, monitoring has yet to begin in the Patuxent River TMDL watershed.

The methods used in the desktop analysis, sample collection, and laboratory analysis are MDE-approved and are proposed for future PCB source tracking studies in other PCB TMDL watersheds.

4.Monitoring Methods (Countywide Biological)

In 2004, a Countywide Biological Monitoring and Assessment Program (CWBMP) for Anne Arundel County was developed to assess the biological condition of the County's streams at multiple scales (i.e., site specific, primary sampling unit (PSU), and countywide). The CWBMP is based on the Maryland Department of Natural Resources' Maryland Biological Stream Survey, scaled down to a County level. The program is structured such that all major watersheds of the County are sampled in a 5-year period or Round, using a rotating basin design. In a rotating basin design, a subset of watershed areas is assessed each year, which rotate annually until the entire County is sampled.

Sampling locations within each subwatershed are pre-determined using a probability-based, stratified random sampling design. Habitat evaluations include both MBSS's Physical Habitat Index (MPHI) and the EPA's Rapid Bioassessment Protocol (RBP) metrics. In-situ water quality measures are collected at each site, along with a geomorphic evaluation utilizing cross-sections, particle substrate analysis using pebble counts, and measures of channel slope. Beginning with Round 3 (2017), fish community assessment and a water chemistry grab sample were added to the CWBMP activities. Please review the program design document and other quality assurance documents for additional information that fully documents the Program's design: www.aacounty.org/departments/public-works/wprp/ecological-assessment-and-evaluation/biological-monitoring/.

The CWBMP stated goals are applicable at three scales; Countywide, Primary Sampling Unit, and Stream-specific, and include the following components:

- Status: describe the overall stream condition
- Trends: how has the overall stream condition changed over time
- Problem identification/prioritization: identify the impaired and most degraded streams
- Stressor-response relationships: identify anthropogenic stressors and their biological response
- Evaluation of environmental management activities: monitor the success of implemented programs and restoration/retrofit projects

Round 1 of the CWBMP occurred between 2004 and 2008, and Round 2 took place between 2009 and 2013. Under Round 1 and 2 of the Countywide Biological Monitoring and Assessment program, biology (i.e., benthic macroinvertebrates) and stream habitat, as well as geomorphological and water quality parameters, were assessed at approximately 240 sites throughout the entire County over a five-year period using a probabilistic, rotating-basin design. Round 3, which began in 2017 and was completed in 2021, added fish sampling and water quality grab samples, and expanded the number of sites to 400 over the five-year period. Round 4 began in 2023 and continues the Round 3 methodology with adjustment to meet the monitoring criteria required by the County's NPDES MS4 Permit as set forth in MDE's *2021 MS4 Monitoring Guidelines for BMP Effectiveness and Watershed Assessments*.

The County began the CWBMP Round 4 in 2023 and uses Generalized Random Tessellation Stratified (GRTS) on Maryland DNR's MBSS version of the National Hydrography Dataset (NHD) 1:24,000 stream layer for site selection. In Round 4, eight sites are sampled per PSU, per the Round 3 design power analysis. Up to five (5) PSUs will be sampled each year for five (5) years to complete the Countywide assessment and, thus, complete the Round. For each PSU all eight sites will be sampled in the same year.

A focus of the ongoing watershed biological assessment is to obtain additional data to determine watershed conditions for purposes of supporting further listing/de-listing decisions. MDE published the *Delisting Methodology for Biological Assessments in Maryland's Integrated Report* which outlines the monitoring and biocriteria requirements for a waterbody to be de-listed from the 303(d) list. In general, to consider a waterbody for delisting, that waterbody must have at least two sampling events with IBI scores of 3.0 or greater for both fish and benthos. The CWBMP will provide data points that can be used to support listing/delisting decisions.

5.Monitoring Methods (Targeted Biological)

To evaluate management activities, the County uses CWBMP assessment methods (biological monitoring, water chemistry sampling, physical habitat, geomorphic evaluation) to assess baseline and post-restoration conditions for select stream, wetland and stormwater restoration and retrofit sites. Although this monitoring utilizes the same methods and procedures as the CWBMP, the sites are not randomly selected. There are two general approaches to site selection in the targeted work. Some sites are on restored reaches that the County tracks to see how the stream benthic community changes over time in response to the restoration. The other group of sites, varying in number from year to year, is established on reaches planned for future restoration work. The intent is to create a baseline of biological conditions to justify project implementation by providing permitting agencies evidence that biological and habitat impairments exist within a reach of interest. The County also samples one site within a minimally disturbed stream reach to use as a reference reach.

D. Tracking Progress and Implementation of Additional Management Measures

The County measures progress by determining whether the targets for load reductions are being met according the milestone schedules set for the County's TMDL Implementation/Restoration Plans. Anne Arundel County tracks progress through modeling and in situ monitoring, as discussed above; and also manages a comprehensive system for adding and tracking projects and accounting for programmatic (qualitative) initiatives. New BMPs, retrofits and restoration projects constructed through the County's CIP program, and new development and redevelopment projects are entered into the County's BMP database and NPDES MS4 geodatabase as they come on-line. Additional County entities including the Bureau of Highways, Road Operation Division, which is responsible for maintenance efforts including street sweeping and inlet cleaning, report progress on management practices that are also tracked in County geodatabases. The County also captures and tracks projects implemented through the County's Restoration Grant Program by NGOs and the Watershed Stewards Academy. Annual progress is reported by the County via the NPDES MS4 Report and associated MS4 Geodatabase which serves as the overarching reporting mechanism for all stormwater management reporting.

1.Annual NPDES MS4 Reporting

The County's NPDES MS4 Permit requires the County submit an annual progress report demonstrating implementation of the Permit requirements based on the fiscal year. If the County's MS4 Annual Report does not demonstrate compliance with the permit terms and show progress toward meeting SW-WLAs, the County must implement BMP and program modifications within 12 months.

2.Annual TMDL Progress Reporting

Anne Arundel County's NPDES MS4 Permit also requires the County to submit an annual Countywide TMDL Stormwater Implementation Plan to assess and report progress for each County TMDL that has a completed and final Implementation Plan in place. The report includes implementation and load reduction summaries for the projects and programs completed in the current reporting year, as well as cumulative progress achieved from the TMDL baseline year. Comparisons are made to the planned implementation targets to determine if the County is on track to achieve its SW-WLAs.

E. Decision Making Timeframe

The Annual MS4 and TMDL progress assessments along with monitoring results contribute to ongoing re-evaluation of implementation/restoration plans, programs and management strategies. The County adapts and responds accordingly as technologies and efficiencies change, programs mature, credit trading is enacted, and regulations are put in place. When changes to the County's management approach for achieving SW-WLAs are determined necessary, those changes are documented through updates to individual TMDL Implementation Plans. Figure 32 below shows the decision-making process that triggers future management actions.

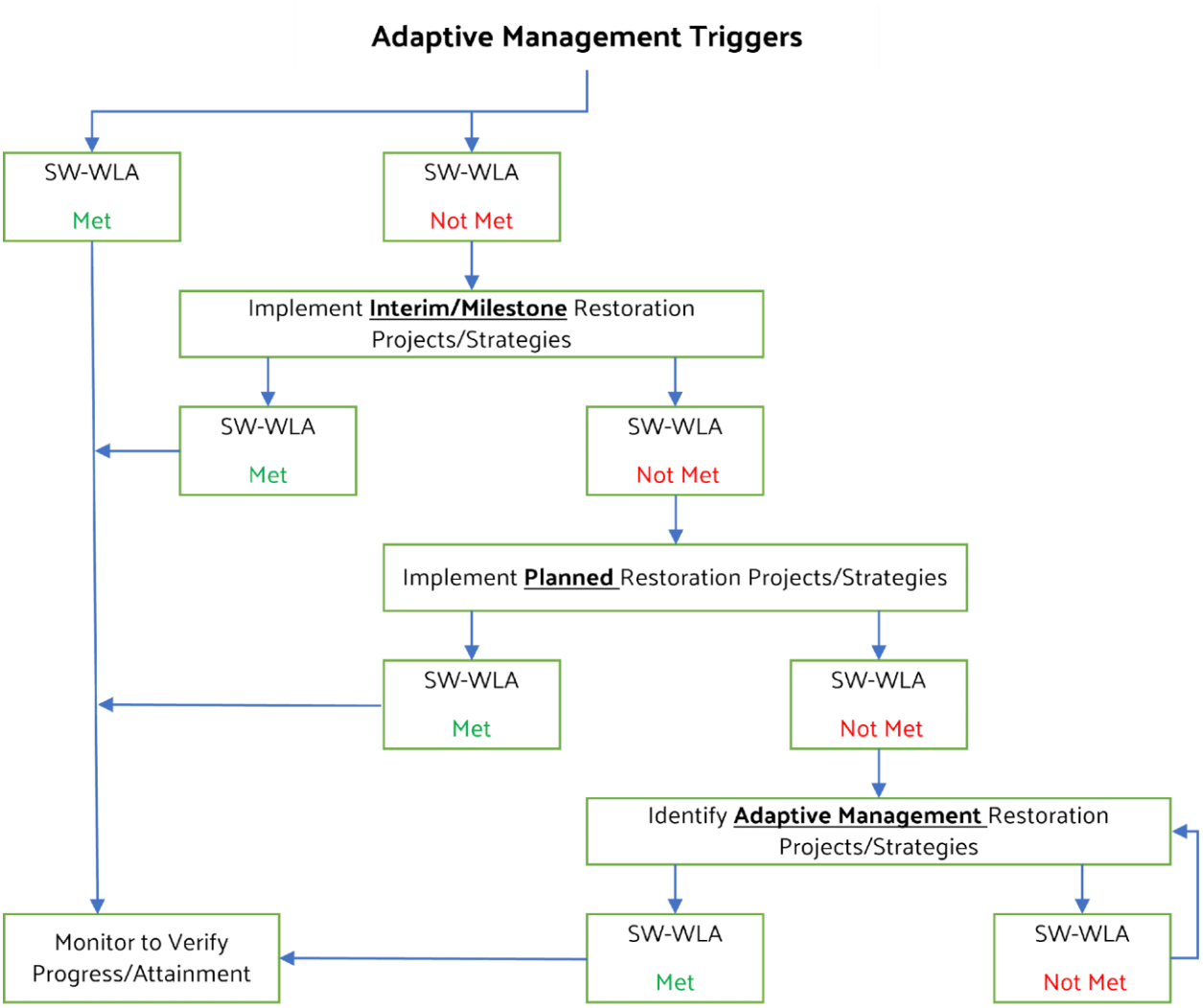

Figure 32: Adaptive Management Decision Diagram

F. Potential Management Options

If it is determined through modeling and in situ monitoring that insufficient progress has made, the County will identify and pursue additional management strategies. Such management strategies could include, but are not limited to:

- Provide incentives for restoration project implementation in watersheds where monitored or modeled load reductions are lagging behind schedule.
- Implement projects that address multiple impairments.
- Implement projects for which additional funding can be leveraged.
- Continue to refine BMP inspection rate protocols while enhancing staff abilities to more efficiently inspect stormwater management facilities through the development/implementation of an inspection application for field tablets.
- Re-evaluate watershed assessments to identify additional opportunities for restoration or preservation implementation and/or to refocus programmatic initiatives.

IX. Appendices

Appendix A Approved Restoration Plans (Baltimore Harbor Sediment TMDL)

See documents provided in accompanying folder 'Appendix A'

Appendix B Draft Restoration Plans (Patuxent PCB TMDL)

See documents provided in accompanying folder 'Appendix B'

Appendix C Local and Bay TMDL BMPs

Local TMDL BMPs

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Balt. Harbor - Nutrient	Land Cover Conv.	27.0	2.5	-	BMP0414	Current
Balt. Harbor - Nutrient	Land Cover Conv.	0.9	0.1	-	BMP0416	Current
Balt. Harbor - Nutrient	Land Cover Conv.	0.7	0.1	-	BMP0420	Current
Balt. Harbor - Nutrient	Land Cover Conv.	0.2	0.0	-	BMP0774	Current
Balt. Harbor - Nutrient	Land Cover Conv.	1.4	0.1	-	BMP0775	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	1.9	0.2	-	BMP0003	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	26.6	3.4	-	BMP0010	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	62.3	7.9	-	BMP0050	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	34.1	3.2	-	BMP0057	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	37.7	4.9	-	BMP0058	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	230.4	21.9	-	BMP0063	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	78.0	7.4	-	BMP0064	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	46.8	6.1	-	BMP0065	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	338.4	42.8	-	BMP0066	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	6.2	0.8	-	BMP0067	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	68.2	6.5	-	BMP0071	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	2.2	0.2	-	BMP0080	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	2.8	0.3	-	BMP0081	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	2.0	0.2	-	BMP0082	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	38.0	4.8	-	BMP0088	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	74.8	9.6	-	BMP0089	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	14.5	1.9	-	BMP0090	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	23.9	2.3	-	BMP0094	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	38.0	4.9	-	BMP0095	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	4.2	0.5	-	BMP0096	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	42.5	4.1	-	BMP0099	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	111.3	14.2	-	BMP0100	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	132.7	12.5	-	BMP0101	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	65.2	8.2	-	BMP0102	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	77.1	7.3	-	BMP0103	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	103.8	9.8	-	BMP0105	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	134.9	12.9	-	BMP0121	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	145.6	14.1	-	BMP0122	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	151.3	19.6	-	BMP0124	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	111.7	10.6	-	BMP0125	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	45.5	4.2	-	BMP0127	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	158.5	20.4	-	BMP0129	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	84.7	8.1	-	BMP0133	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	136.4	12.7	-	BMP0135	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	197.6	25.5	-	BMP0139	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	0.4	0.1	-	BMP0145	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Balt. Harbor - Nutrient	Stormwater Mgmt.	34.3	4.5	-	BMP0149	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	5.1	0.5	-	BMP0150	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	9.7	0.9	-	BMP0151	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	4.8	0.4	-	BMP0152	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	13.4	1.2	-	BMP0153	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	9.2	0.8	-	BMP0154	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	14.5	1.3	-	BMP0155	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	0.4	0.0	-	BMP0156	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	330.7	42.8	-	BMP0168	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	11.1	1.4	-	BMP0171	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	136.2	17.4	-	BMP0172	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	148.6	14.2	-	BMP0173	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	54.5	6.7	-	BMP0174	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	211.5	19.8	-	BMP0175	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	60.6	5.7	-	BMP0176	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	21.4	2.6	-	BMP0177	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	112.4	14.4	-	BMP0184	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	3.2	0.4	-	BMP0192	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	976.6	120.6	-	BMP0198	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	177.2	22.9	-	BMP0229	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	1.8	0.2	-	BMP0230	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	38.1	4.9	-	BMP0231	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	104.9	13.4	-	BMP0232	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	186.3	22.8	-	BMP0234	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	53.1	6.7	-	BMP0243	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	77.7	7.4	-	BMP0244	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	83.6	10.4	-	BMP0812	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	63.3	7.9	-	BMP0813	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	50.3	6.2	-	BMP0816	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	9.1	0.9	-	BMP0834	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	138.9	12.7	-	BMP0844	Current
Balt. Harbor - Nutrient	Stream Restoration	18.8	17.0	-	BMP0257	Current
Balt. Harbor - Nutrient	Stream Restoration	1,683.2	166.7	-	BMP0268	Current
Balt. Harbor - Nutrient	Stream Restoration	696.0	321.0	-	BMP0291	Current
Balt. Harbor - Nutrient	Stream Restoration	33.0	29.9	-	BMP0294	Current
Balt. Harbor - Nutrient	Stream Restoration	212.0	60.1	-	BMP0300	Current
Balt. Harbor - Nutrient	Stream Restoration	189.8	87.4	-	BMP0728	Current
Balt. Harbor - Nutrient	Stream Restoration	158.8	32.1	-	BMP0746	Current
Balt. Harbor - Nutrient	Stream Restoration	19.9	18.0	-	BMP0773	Current
Balt. Harbor - Nutrient	Stream Restoration	14.2	7.1	-	BMP0835	Current
Balt. Harbor - Nutrient	Stormwater Mgmt.	75.5	7.2	-	BMP0079	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	167.4	21.0	-	BMP0098	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	101.0	12.9	-	BMP0136	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	314.2	29.9	-	BMP0170	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	35.6	4.5	-	BMP0183	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	95.8	9.5	-	BMP0196	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	66.9	8.5	-	BMP0246	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	89.2	11.4	-	BMP0421	Interim

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Balt. Harbor - Nutrient	Stormwater Mgmt.	77.1	7.6	-	BMP0786	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	115.8	11.2	-	BMP0789	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	31.3	4.0	-	BMP0848	Interim
Balt. Harbor - Nutrient	Stream Restoration	16.8	2.5	-	BMP0204	Interim
Balt. Harbor - Nutrient	Stream Restoration	112.9	26.7	-	BMP0281	Interim
Balt. Harbor - Nutrient	Stream Restoration	59.4	13.8	-	BMP0298	Interim
Balt. Harbor - Nutrient	Stream Restoration	1,250.3	89.0	-	BMP0299	Interim
Balt. Harbor - Nutrient	Stream Restoration	1,171.0	171.3	-	BMP0304	Interim
Balt. Harbor - Nutrient	Stream Restoration	683.5	48.6	-	BMP0308	Interim
Balt. Harbor - Nutrient	Stream Restoration	366.8	17.0	-	BMP0309	Interim
Balt. Harbor - Nutrient	Stream Restoration	222.8	26.0	-	BMP0310	Interim
Balt. Harbor - Nutrient	Stream Restoration	155.9	17.7	-	BMP0311	Interim
Balt. Harbor - Nutrient	Stream Restoration	51.6	5.6	-	BMP0312	Interim
Balt. Harbor - Nutrient	Stream Restoration	646.3	62.0	-	BMP0314	Interim
Balt. Harbor - Nutrient	Stream Restoration	922.0	87.4	-	BMP0468	Interim
Balt. Harbor - Nutrient	Stream Restoration	1,375.2	162.0	-	BMP0472	Interim
Balt. Harbor - Nutrient	Stream Restoration	2,379.3	981.5	-	BMP0475	Interim
Balt. Harbor - Nutrient	Stream Restoration	5.6	1.4	-	BMP0714	Interim
Balt. Harbor - Nutrient	Stream Restoration	225.9	40.0	-	BMP0777	Interim
Balt. Harbor - Nutrient	Stream Restoration	222.8	84.5	-	BMP0838	Interim
Balt. Harbor - Nutrient	Stream Restoration	552.8	254.6	-	BMP0839	Interim
Balt. Harbor - Nutrient	Stormwater Mgmt.	1,188.2	105.4	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	529.0	48.7	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	3,121.2	293.5	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	425.6	37.8	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	288.6	24.9	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	266.7	22.8	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	1,074.4	100.8	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	569.5	49.7	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	303.1	26.3	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	278.3	24.2	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	630.3	53.8	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	418.3	35.8	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	1,179.5	107.6	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	402.7	37.1	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	404.6	36.7	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	1,804.5	167.6	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	1,199.7	107.1	-	-	Planned
Balt. Harbor - Nutrient	Stormwater Mgmt.	126.9	11.3	-	-	Planned
Balt. Harbor - Nutrient	Stream Restoration	322.5	292.4	-	-	Planned
Balt. Harbor - Nutrient	Stream Restoration	574.9	201.7	-	-	Planned
Balt. Harbor - Nutrient	Stream Restoration	1,458.2	511.7	-	-	Planned
Balt. Harbor - Nutrient	Stream Restoration	713.5	250.4	-	-	Planned
Balt. Harbor - Nutrient	Stream Restoration	3,139.0	1,101.0	-	-	Planned
Balt. Harbor - Sediment	Land Cover Conv.	-	-	1,637.0	BMP0414	Current
Balt. Harbor - Sediment	Land Cover Conv.	-	-	248.0	BMP0416	Current
Balt. Harbor - Sediment	Land Cover Conv.	-	-	102.7	BMP0420	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	200.9	BMP0003	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	5,594.7	BMP0010	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	13,408.6	BMP0050	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	7,436.4	BMP0058	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	29,778.6	BMP0063	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	10,250.0	BMP0064	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	8,856.4	BMP0065	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	75,968.9	BMP0066	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	372.1	BMP0080	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	471.8	BMP0081	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	331.5	BMP0082	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	13,424.2	BMP0089	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	2,883.5	BMP0090	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	3,034.9	BMP0094	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	7,769.7	BMP0095	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	4,751.5	BMP0099	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	17,770.1	BMP0101	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	15,000.3	BMP0102	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	10,462.0	BMP0103	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	13,651.1	BMP0105	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	15,780.1	BMP0121	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	16,588.8	BMP0122	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	28,968.1	BMP0124	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	14,282.8	BMP0125	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	6,646.3	BMP0127	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	10,047.5	BMP0133	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	38,950.1	BMP0139	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	52.4	BMP0145	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	5,540.0	BMP0149	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	2,220.7	BMP0171	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	28,649.5	BMP0172	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	18,861.0	BMP0173	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	17,289.8	BMP0174	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	30,798.3	BMP0175	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	2.6	BMP0177	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	23,068.7	BMP0184	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	647.0	BMP0192	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	34,377.5	BMP0229	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	437.3	BMP0230	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	7,951.4	BMP0231	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	21,086.2	BMP0812	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	15,959.3	BMP0813	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	1,087.5	BMP0834	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	22,213.0	BMP0844	Current
Balt. Harbor - Sediment	Stream Restoration	-	-	113,700.0	BMP0268	Current
Balt. Harbor - Sediment	Stream Restoration	-	-	610,000.0	BMP0291	Current
Balt. Harbor - Sediment	Stream Restoration	-	-	109,120.0	BMP0294	Current
Balt. Harbor - Sediment	Stream Restoration	-	-	493,000.0	BMP0300	Current
Balt. Harbor - Sediment	Stream Restoration	-	-	166,454.5	BMP0728	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Balt. Harbor - Sediment	Stream Restoration	-	-	283,869.2	BMP0746	Current
Balt. Harbor - Sediment	Stream Restoration	-	-	28,500.0	BMP0835	Current
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	9,791.2	BMP0079	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	20,929.5	BMP0136	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	8,510.1	BMP0183	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	12,152.8	BMP0196	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	14,416.3	BMP0246	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	18,620.7	BMP0421	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	1,438.4	BMP0789	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	23,863.0	BMP0204	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	356,069.0	BMP0281	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	70,200.0	BMP0298	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	1,071,800.0	BMP0299	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	245,240.0	BMP0304	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	20,880.0	BMP0308	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	7,140.0	BMP0309	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	71,770.0	BMP0310	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	123,430.0	BMP0311	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	33,070.0	BMP0312	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	1,456,553.0	BMP0314	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	74,303.0	BMP0468	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	1,869,600.0	BMP0475	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	17,600.0	BMP0714	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	135,000.0	BMP0777	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	9,815.2	BMP0838	Interim
Balt. Harbor - Sediment	Stream Restoration	-	-	484,915.5	BMP0839	Interim
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	60,318.7	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	430,586.0	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	150,269.4	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	43,295.8	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	105,424.9	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	142,345.2	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	45,332.7	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	50,379.0	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	265,375.6	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	163,702.3	-	Planned
Balt. Harbor - Sediment	Stormwater Mgmt.	-	-	17,166.4	-	Planned
Balt. Harbor - Sediment	Stream Restoration	-	-	504,255.1	-	Planned
Balt. Harbor - Sediment	Stream Restoration	-	-	1,279,149.1	-	Planned
Balt. Harbor - Sediment	Stream Restoration	-	-	625,890.3	-	Planned
Balt. Harbor - Sediment	Stream Restoration	-	-	2,753,439.0	-	Planned
Little Patuxent	Stormwater Mgmt.	-	-	3,022.5	BMP0053	Current
Little Patuxent	Stormwater Mgmt.	-	-	5,993.2	BMP0067	Current
Little Patuxent	Stormwater Mgmt.	-	-	364.6	BMP0068	Current
Little Patuxent	Stormwater Mgmt.	-	-	83,207.2	BMP0110	Current
Little Patuxent	Stormwater Mgmt.	-	-	16,671.8	BMP0169	Current
Little Patuxent	Stormwater Mgmt.	-	-	9,917.8	BMP0179	Current
Little Patuxent	Stormwater Mgmt.	-	-	121,321.4	BMP0197	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Little Patuxent	Stormwater Mgmt.	-	-	141,399.2	BMP0221	Current
Little Patuxent	Stormwater Mgmt.	-	-	339.4	BMP0722	Current
Little Patuxent	Stormwater Mgmt.	-	-	253.2	BMP0723	Current
Little Patuxent	Stormwater Mgmt.	-	-	8,250.8	BMP0836	Current
Little Patuxent	Stream Restoration	-	-	250,728.0	BMP0266	Current
Little Patuxent	Stream Restoration	-	-	37,200.0	BMP0267	Current
Little Patuxent	Stream Restoration	-	-	620,053.0	BMP0324	Current
Little Patuxent	Stream Restoration	-	-	454,000.0	BMP0712	Current
Little Patuxent	Stormwater Mgmt.	-	-	1,245.1	BMP0848	Interim
Little Patuxent	Stream Restoration	-	-	1,623,584.8	BMP0301	Interim
Little Patuxent	Stream Restoration	-	-	529,220.0	BMP0784	Interim
Little Patuxent	Stream Restoration	-	-	906,496.0	BMP0853	Interim
Little Patuxent	Stream Restoration	-	-	116,920.0	BMP0854	Interim
Little Patuxent	Stream Restoration	-	-	478,960.0	BMP0855	Interim
Lower Patuxent	Stream Restoration	-	-	1,792,471.0	BMP0782	Interim
Middle Patuxent	Land Cover Conv.	-	-	1,987.9	BMP0413	Current
Middle Patuxent	Land Cover Conv.	-	-	1,197.3	BMP0418	Current
Middle Patuxent	Land Cover Conv.	-	-	51,857.9	BMP0821	Current
Middle Patuxent	Stream Restoration	-	-	19,784.7	BMP0779	Current
Middle Patuxent	Stream Restoration	-	-	942,400.0	BMP0692	Interim
Middle Patuxent	Stream Restoration	-	-	408,406.4	-	Planned
Middle Patuxent	Stream Restoration	-	-	536,399.2	-	Planned
Middle Patuxent	Stream Restoration	-	-	655,960.0	-	Planned
Middle Patuxent	Stream Restoration	-	-	736,396.3	-	Planned
Middle Patuxent	Stream Restoration	-	-	460,188.8	-	Planned
Middle Patuxent	Stream Restoration	-	-	758,855.2	-	Planned
Middle Patuxent	Stream Restoration	-	-	483,079.2	-	Planned
Middle Patuxent	Stream Restoration	-	-	490,568.8	-	Planned
Middle Patuxent	Stream Restoration	-	-	904,158.4	-	Planned
Middle Patuxent	Stream Restoration	-	-	701,220.0	-	Planned
Middle Patuxent	Stream Restoration	-	-	896,024.0	-	Planned
Middle Patuxent	Stream Restoration	-	-	886,451.2	-	Planned
Other West Ches.	Stormwater Mgmt.	-	-	76,047.9	BMP0185	Current
Other West Ches.	Stormwater Mgmt.	-	-	137.0	BMP0780	Current
Other West Ches.	Stream Restoration	-	-	38,312.0	BMP0320	Current
Other West Ches.	Stream Restoration	-	-	27,380.5	BMP0771	Current
Other West Ches.	Stream Restoration	-	-	386,532.8	-	Planned
Other West Ches.	Stream Restoration	-	-	257,771.2	-	Planned
Other West Ches.	Stream Restoration	-	-	440,596.8	-	Planned
Other West Ches.	Stream Restoration	-	-	206,088.0	-	Planned
Other West Ches.	Stream Restoration	-	-	223,448.0	-	Planned
Other West Ches.	Stream Restoration	-	-	419,864.0	-	Planned
Other West Ches.	Stream Restoration	-	-	448,111.2	-	Planned
Other West Ches.	Stream Restoration	-	-	332,320.0	-	Planned
Other West Ches.	Stream Restoration	-	-	349,655.2	-	Planned
Other West Ches.	Stream Restoration	-	-	173,228.0	-	Planned
Other West Ches.	Stream Restoration	-	-	248,000.0	-	Planned
Patapsco LNB	Land Cover Conv.	-	-	130.7	BMP0774	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
Patapsco LNB	Stormwater Mgmt.	-	-	9,023.8	BMP0057	Current
Patapsco LNB	Stormwater Mgmt.	-	-	2,553.7	BMP0067	Current
Patapsco LNB	Stormwater Mgmt.	-	-	17,462.7	BMP0071	Current
Patapsco LNB	Stormwater Mgmt.	-	-	16,078.3	BMP0088	Current
Patapsco LNB	Stormwater Mgmt.	-	-	3,084.6	BMP0089	Current
Patapsco LNB	Stormwater Mgmt.	-	-	2,123.5	BMP0096	Current
Patapsco LNB	Stormwater Mgmt.	-	-	48,255.4	BMP0100	Current
Patapsco LNB	Stormwater Mgmt.	-	-	63,525.2	BMP0129	Current
Patapsco LNB	Stormwater Mgmt.	-	-	40,628.3	BMP0135	Current
Patapsco LNB	Stormwater Mgmt.	-	-	1,774.0	BMP0150	Current
Patapsco LNB	Stormwater Mgmt.	-	-	3,185.2	BMP0151	Current
Patapsco LNB	Stormwater Mgmt.	-	-	1,644.2	BMP0152	Current
Patapsco LNB	Stormwater Mgmt.	-	-	4,727.7	BMP0153	Current
Patapsco LNB	Stormwater Mgmt.	-	-	2,952.9	BMP0154	Current
Patapsco LNB	Stormwater Mgmt.	-	-	5,108.2	BMP0155	Current
Patapsco LNB	Stormwater Mgmt.	-	-	135.4	BMP0156	Current
Patapsco LNB	Stormwater Mgmt.	-	-	128,540.9	BMP0168	Current
Patapsco LNB	Stormwater Mgmt.	-	-	17,697.4	BMP0176	Current
Patapsco LNB	Stormwater Mgmt.	-	-	10,878.0	BMP0177	Current
Patapsco LNB	Stormwater Mgmt.	-	-	508,366.7	BMP0198	Current
Patapsco LNB	Stormwater Mgmt.	-	-	45,382.2	BMP0232	Current
Patapsco LNB	Stormwater Mgmt.	-	-	105,967.2	BMP0234	Current
Patapsco LNB	Stormwater Mgmt.	-	-	23,210.5	BMP0243	Current
Patapsco LNB	Stormwater Mgmt.	-	-	20,128.5	BMP0244	Current
Patapsco LNB	Stormwater Mgmt.	-	-	27,807.2	BMP0816	Current
Patapsco LNB	Stream Restoration	-	-	62,000.0	BMP0257	Current
Patapsco LNB	Stream Restoration	-	-	65,720.0	BMP0773	Current
Patapsco LNB	Stormwater Mgmt.	-	-	77,941.2	BMP0098	Interim
Patapsco LNB	Stormwater Mgmt.	-	-	82,498.0	BMP0170	Interim
Patapsco LNB	Stormwater Mgmt.	-	-	22,407.6	BMP0786	Interim
Patapsco LNB	Stormwater Mgmt.	-	-	24,275.0	BMP0789	Interim
Patapsco LNB	Stormwater Mgmt.	-	-	12,900.5	BMP0848	Interim
Patapsco LNB	Stream Restoration	-	-	250,915.0	BMP0472	Interim
Patapsco LNB	Stormwater Mgmt.	-	-	340,884.7	-	Planned
Patapsco LNB	Stormwater Mgmt.	-	-	120,816.3	-	Planned
Patapsco LNB	Stormwater Mgmt.	-	-	93,781.2	-	Planned
Patapsco LNB	Stormwater Mgmt.	-	-	91,003.9	-	Planned
Patapsco LNB	Stormwater Mgmt.	-	-	177,027.8	-	Planned
Patapsco LNB	Stormwater Mgmt.	-	-	96,307.6	-	Planned
Patapsco LNB	Stormwater Mgmt.	-	-	140,577.4	-	Planned
Patapsco LNB	Stream Restoration	-	-	1,066,400.0	-	Planned
South River	Land Cover Conv.	-	-	874.5	BMP0417	Current
South River	Land Cover Conv.	-	-	370.5	BMP0831	Current
South River	Land Cover Conv.	-	-	7,361.9	BMP0832	Current
South River	Stormwater Mgmt.	-	-	8,590.0	BMP0023	Current
South River	Stormwater Mgmt.	-	-	3,215.5	BMP0028	Current
South River	Stormwater Mgmt.	-	-	788.6	BMP0029	Current
South River	Stormwater Mgmt.	-	-	2,303.3	BMP0036	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
South River	Stormwater Mgmt.	-	-	4,196.6	BMP0037	Current
South River	Stormwater Mgmt.	-	-	30,181.7	BMP0038	Current
South River	Stormwater Mgmt.	-	-	4,657.4	BMP0043	Current
South River	Stormwater Mgmt.	-	-	5,317.9	BMP0045	Current
South River	Stormwater Mgmt.	-	-	11,471.8	BMP0051	Current
South River	Stormwater Mgmt.	-	-	483.4	BMP0055	Current
South River	Stormwater Mgmt.	-	-	3,999.9	BMP0061	Current
South River	Stormwater Mgmt.	-	-	3,297.2	BMP0062	Current
South River	Stormwater Mgmt.	-	-	5,126.9	BMP0069	Current
South River	Stormwater Mgmt.	-	-	13,838.5	BMP0073	Current
South River	Stormwater Mgmt.	-	-	8,940.1	BMP0074	Current
South River	Stormwater Mgmt.	-	-	816.6	BMP0076	Current
South River	Stormwater Mgmt.	-	-	207.8	BMP0077	Current
South River	Stormwater Mgmt.	-	-	457.2	BMP0078	Current
South River	Stormwater Mgmt.	-	-	79,934.4	BMP0097	Current
South River	Stormwater Mgmt.	-	-	26,311.3	BMP0108	Current
South River	Stormwater Mgmt.	-	-	793.3	BMP0111	Current
South River	Stormwater Mgmt.	-	-	17,439.5	BMP0123	Current
South River	Stormwater Mgmt.	-	-	1,264.2	BMP0137	Current
South River	Stormwater Mgmt.	-	-	66,294.2	BMP0138	Current
South River	Stormwater Mgmt.	-	-	3,497.9	BMP0162	Current
South River	Stormwater Mgmt.	-	-	22,695.9	BMP0163	Current
South River	Stormwater Mgmt.	-	-	3,835.7	BMP0164	Current
South River	Stormwater Mgmt.	-	-	15,835.9	BMP0165	Current
South River	Stormwater Mgmt.	-	-	209.6	BMP0180	Current
South River	Stormwater Mgmt.	-	-	626.9	BMP0181	Current
South River	Stormwater Mgmt.	-	-	840.5	BMP0182	Current
South River	Stormwater Mgmt.	-	-	1,390.9	BMP0211	Current
South River	Stormwater Mgmt.	-	-	1,462.6	BMP0218	Current
South River	Stormwater Mgmt.	-	-	8,192.3	BMP0222	Current
South River	Stormwater Mgmt.	-	-	751.3	BMP0233	Current
South River	Stormwater Mgmt.	-	-	1,657.4	BMP0239	Current
South River	Stormwater Mgmt.	-	-	3,704.1	BMP0240	Current
South River	Stormwater Mgmt.	-	-	3,540.5	BMP0242	Current
South River	Stormwater Mgmt.	-	-	192,121.4	BMP0245	Current
South River	Stormwater Mgmt.	-	-	1,431.6	BMP0443	Current
South River	Stormwater Mgmt.	-	-	8,712.4	BMP0721	Current
South River	Stormwater Mgmt.	-	-	843.0	BMP0724	Current
South River	Stormwater Mgmt.	-	-	1,214.8	BMP0833	Current
South River	Stream Restoration	-	-	272,800.0	BMP0258	Current
South River	Stream Restoration	-	-	205,096.0	BMP0260	Current
South River	Stream Restoration	-	-	157,976.0	BMP0261	Current
South River	Stream Restoration	-	-	74,400.0	BMP0262	Current
South River	Stream Restoration	-	-	274,784.0	BMP0265	Current
South River	Stream Restoration	-	-	99,200.0	BMP0276	Current
South River	Stream Restoration	-	-	173,600.0	BMP0282	Current
South River	Stream Restoration	-	-	744,000.0	BMP0283	Current
South River	Stream Restoration	-	-	1,327,868.9	BMP0286	Current

Local TMDL Watershed	Type	TN (lbs)	TP (lbs)	TSS (lbs)	BMP ID	Scenario
South River	Stream Restoration	-	-	653,340.9	BMP0295	Current
South River	Stream Restoration	-	-	123,455.3	BMP0313	Current
South River	Stream Restoration	-	-	72,664.0	BMP0316	Current
South River	Stream Restoration	-	-	184,361.0	BMP0318	Current
South River	Stream Restoration	-	-	200,299.3	BMP0319	Current
South River	Stream Restoration	-	-	160,185.2	BMP0321	Current
South River	Stream Restoration	-	-	74,400.0	BMP0323	Current
South River	Stream Restoration	-	-	341,893.0	BMP0328	Current
South River	Stream Restoration	-	-	275,409.8	BMP0329	Current
South River	Stream Restoration	-	-	19,672.1	BMP0330	Current
South River	Stream Restoration	-	-	309,607.0	BMP0454	Current
South River	Stream Restoration	-	-	377,814.2	BMP0729	Current
South River	Stream Restoration	-	-	991,192.0	BMP0740	Current
South River	Stream Restoration	-	-	6,662.9	BMP0825	Current
South River	Land Cover Conv.	-	-	132.2	BMP0858	Interim
South River	Land Cover Conv.	-	-	1,027.7	BMP0863	Interim
South River	Stormwater Mgmt.	-	-	5,449.9	BMP0800	Interim
South River	Stormwater Mgmt.	-	-	1,025.7	BMP0845	Interim
South River	Stormwater Mgmt.	-	-	1,246.0	BMP0846	Interim
South River	Stormwater Mgmt.	-	-	4,842.2	BMP0861	Interim
South River	Stream Restoration	-	-	140,403.0	BMP0464	Interim
South River	Stream Restoration	-	-	264,000.0	BMP0479	Interim
South River	Stream Restoration	-	-	833,600.0	BMP0480	Interim
South River	Stream Restoration	-	-	1,240,000.0	BMP0482	Interim
South River	Stream Restoration	-	-	159,849.0	BMP0772	Interim
South River	Stream Restoration	-	-	92,169.0	BMP0826	Interim
Upper Patuxent	Stormwater Mgmt.	-	-	30,354.3	BMP0068	Current
Upper Patuxent	Stormwater Mgmt.	-	-	33,313.1	BMP0197	Current
Upper Patuxent	Stream Restoration	-	-	171,500.0	BMP0289	Current
Upper Patuxent	Stream Restoration	-	-	2,730,471.9	BMP0694	Interim
West River	Land Cover Conv.	-	-	526.1	BMP0415	Current
West River	Stormwater Mgmt.	-	-	2,620.1	BMP0020	Current
West River	Stormwater Mgmt.	-	-	3,760.3	BMP0069	Current
West River	Stormwater Mgmt.	-	-	4,535.5	BMP0725	Current
West River	Stormwater Mgmt.	-	-	2,551.4	BMP0726	Current
West River	Stream Restoration	-	-	46,363.9	BMP0259	Current
West River	Stream Restoration	-	-	976,600.0	BMP0856	Interim
West River	Stormwater Mgmt.	-	-	12,452.6	-	Planned
West River	Stormwater Mgmt.	-	-	2,389.3	-	Planned
West River	Stormwater Mgmt.	-	-	14,797.7	-	Planned
West River	Stormwater Mgmt.	-	-	10,398.4	-	Planned
West River	Stormwater Mgmt.	-	-	10,985.6	-	Planned
West River	Stormwater Mgmt.	-	-	1,587.3	-	Planned
West River	Stormwater Mgmt.	-	-	2,931.1	-	Planned
West River	Stream Restoration	-	-	694,400.0	-	Planned
West River	Stream Restoration	-	-	248,000.0	-	Planned

Bay Segment TMDL BMPs

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Magothy River Mesohaline	Land Cover Conv.	0.3	0.0	BMP0419	Current
Magothy River Mesohaline	Shoreline Restoration	15.5	11.0	BMP0341	Current
Magothy River Mesohaline	Shoreline Restoration	20.7	14.6	BMP0353	Current
Magothy River Mesohaline	Shoreline Restoration	4.3	3.1	BMP0356	Current
Magothy River Mesohaline	Shoreline Restoration	2.6	1.8	BMP0367	Current
Magothy River Mesohaline	Shoreline Restoration	12.4	0.8	BMP0390	Current
Magothy River Mesohaline	Shoreline Restoration	16.6	1.0	BMP0393	Current
Magothy River Mesohaline	Shoreline Restoration	6.9	4.9	BMP0398	Current
Magothy River Mesohaline	Shoreline Restoration	40.8	20.5	BMP0458	Current
Magothy River Mesohaline	Shoreline Restoration	15.1	10.7	BMP0790	Current
Magothy River Mesohaline	Stormwater Mgmt.	2.1	0.1	BMP0001	Current
Magothy River Mesohaline	Stormwater Mgmt.	60.3	6.0	BMP0002	Current
Magothy River Mesohaline	Stormwater Mgmt.	20.2	1.9	BMP0004	Current
Magothy River Mesohaline	Stormwater Mgmt.	35.2	3.5	BMP0005	Current
Magothy River Mesohaline	Stormwater Mgmt.	27.7	2.7	BMP0007	Current
Magothy River Mesohaline	Stormwater Mgmt.	32.3	3.0	BMP0008	Current
Magothy River Mesohaline	Stormwater Mgmt.	77.8	7.7	BMP0009	Current
Magothy River Mesohaline	Stormwater Mgmt.	2.5	0.3	BMP0010	Current
Magothy River Mesohaline	Stormwater Mgmt.	0.0	0.0	BMP0011	Current
Magothy River Mesohaline	Stormwater Mgmt.	4.8	0.4	BMP0012	Current
Magothy River Mesohaline	Stormwater Mgmt.	49.1	4.9	BMP0013	Current
Magothy River Mesohaline	Stormwater Mgmt.	42.9	4.2	BMP0018	Current
Magothy River Mesohaline	Stormwater Mgmt.	35.3	3.5	BMP0019	Current
Magothy River Mesohaline	Stormwater Mgmt.	23.5	2.3	BMP0021	Current
Magothy River Mesohaline	Stormwater Mgmt.	23.5	2.3	BMP0022	Current
Magothy River Mesohaline	Stormwater Mgmt.	189.0	13.5	BMP0024	Current
Magothy River Mesohaline	Stormwater Mgmt.	261.2	25.3	BMP0025	Current
Magothy River Mesohaline	Stormwater Mgmt.	9.8	0.9	BMP0026	Current
Magothy River Mesohaline	Stormwater Mgmt.	16.0	1.1	BMP0027	Current
Magothy River Mesohaline	Stormwater Mgmt.	198.0	13.9	BMP0030	Current
Magothy River Mesohaline	Stormwater Mgmt.	127.6	12.4	BMP0031	Current
Magothy River Mesohaline	Stormwater Mgmt.	18.4	1.8	BMP0032	Current
Magothy River Mesohaline	Stormwater Mgmt.	9.2	0.9	BMP0035	Current
Magothy River Mesohaline	Stormwater Mgmt.	73.1	6.5	BMP0039	Current
Magothy River Mesohaline	Stormwater Mgmt.	36.4	2.5	BMP0040	Current
Magothy River Mesohaline	Stormwater Mgmt.	12.1	1.2	BMP0048	Current
Magothy River Mesohaline	Stormwater Mgmt.	0.9	0.1	BMP0050	Current
Magothy River Mesohaline	Stormwater Mgmt.	29.8	2.8	BMP0054	Current
Magothy River Mesohaline	Stormwater Mgmt.	128.1	12.4	BMP0056	Current
Magothy River Mesohaline	Stormwater Mgmt.	8.6	0.7	BMP0060	Current
Magothy River Mesohaline	Stormwater Mgmt.	128.1	9.6	BMP0091	Current
Magothy River Mesohaline	Stormwater Mgmt.	47.5	3.2	BMP0114	Current
Magothy River Mesohaline	Stormwater Mgmt.	5.4	0.4	BMP0115	Current
Magothy River Mesohaline	Stormwater Mgmt.	90.0	6.4	BMP0119	Current
Magothy River Mesohaline	Stormwater Mgmt.	140.8	10.3	BMP0130	Current
Magothy River Mesohaline	Stormwater Mgmt.	525.0	52.1	BMP0149	Current

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Magothy River Mesohaline	Stormwater Mgmt.	1.3	0.1	BMP0158	Current
Magothy River Mesohaline	Stormwater Mgmt.	32.6	3.1	BMP0171	Current
Magothy River Mesohaline	Stormwater Mgmt.	23.9	1.7	BMP0186	Current
Magothy River Mesohaline	Stormwater Mgmt.	3.5	0.3	BMP0187	Current
Magothy River Mesohaline	Stormwater Mgmt.	4.3	0.3	BMP0188	Current
Magothy River Mesohaline	Stormwater Mgmt.	27.1	1.9	BMP0189	Current
Magothy River Mesohaline	Stormwater Mgmt.	6.7	0.5	BMP0199	Current
Magothy River Mesohaline	Stormwater Mgmt.	342.1	33.6	BMP0200	Current
Magothy River Mesohaline	Stormwater Mgmt.	0.2	0.0	BMP0201	Current
Magothy River Mesohaline	Stormwater Mgmt.	18.5	1.8	BMP0202	Current
Magothy River Mesohaline	Stormwater Mgmt.	70.7	5.0	BMP0203	Current
Magothy River Mesohaline	Stormwater Mgmt.	95.6	6.8	BMP0224	Current
Magothy River Mesohaline	Stormwater Mgmt.	62.0	4.4	BMP0225	Current
Magothy River Mesohaline	Stormwater Mgmt.	93.6	8.0	BMP0230	Current
Magothy River Mesohaline	Stormwater Mgmt.	64.5	4.6	BMP0236	Current
Magothy River Mesohaline	Stormwater Mgmt.	60.9	4.3	BMP0238	Current
Magothy River Mesohaline	Stormwater Mgmt.	94.6	7.1	BMP0241	Current
Magothy River Mesohaline	Stormwater Mgmt.	23.5	1.8	BMP0538	Current
Magothy River Mesohaline	Stormwater Mgmt.	2.1	0.1	BMP0716	Current
Magothy River Mesohaline	Stormwater Mgmt.	2.1	0.1	BMP0717	Current
Magothy River Mesohaline	Stormwater Mgmt.	2.1	0.1	BMP0718	Current
Magothy River Mesohaline	Stormwater Mgmt.	16.7	1.2	BMP0719	Current
Magothy River Mesohaline	Stream Restoration	37.5	34.0	BMP0255	Current
Magothy River Mesohaline	Stream Restoration	1,110.2	161.5	BMP0264	Current
Magothy River Mesohaline	Stream Restoration	621.0	48.5	BMP0273	Current
Magothy River Mesohaline	Stream Restoration	597.5	71.9	BMP0278	Current
Magothy River Mesohaline	Stream Restoration	111.2	8.7	BMP0280	Current
Magothy River Mesohaline	Stream Restoration	35.6	32.3	BMP0290	Current
Magothy River Mesohaline	Stream Restoration	604.4	96.0	BMP0293	Current
Magothy River Mesohaline	Stream Restoration	16.9	15.3	BMP0315	Current
Magothy River Mesohaline	Stream Restoration	6.5	3.0	BMP0711	Current
Magothy River Mesohaline	Stream Restoration	358.9	365.1	BMP0713	Current
Magothy River Mesohaline	Stream Restoration	1,497.0	200.0	BMP0741	Current
Magothy River Mesohaline	Land Cover Conv.	2.1	0.0	BMP0842	Interim
Magothy River Mesohaline	Shoreline Restoration	111.5	42.5	BMP0396	Interim
Magothy River Mesohaline	Shoreline Restoration	56.8	40.1	BMP0822	Interim
Magothy River Mesohaline	Shoreline Restoration	47.4	4.4	BMP0829	Interim
Magothy River Mesohaline	Shoreline Restoration	18.9	10.7	BMP0857	Interim
Magothy River Mesohaline	Stormwater Mgmt.	171.6	16.6	BMP0140	Interim
Magothy River Mesohaline	Stormwater Mgmt.	109.7	10.8	BMP0141	Interim
Magothy River Mesohaline	Stormwater Mgmt.	5.0	0.5	BMP0142	Interim
Magothy River Mesohaline	Stormwater Mgmt.	93.3	6.8	BMP0143	Interim
Magothy River Mesohaline	Stormwater Mgmt.	90.5	6.1	BMP0843	Interim
Magothy River Mesohaline	Stream Restoration	1,012.8	383.3	BMP0275	Interim
Magothy River Mesohaline	Stream Restoration	453.1	62.9	BMP0279	Interim
Magothy River Mesohaline	Stream Restoration	179.1	101.2	BMP0285	Interim
Magothy River Mesohaline	Stream Restoration	36.5	21.1	BMP0296	Interim
Magothy River Mesohaline	Stream Restoration	51.7	24.8	BMP0710	Interim
Magothy River Mesohaline	Stream Restoration	176.2	136.5	BMP0743	Interim

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Magothy River Mesohaline	Stream Restoration	9.4	4.3	BMP0823	Interim
Magothy River Mesohaline	Shoreline Restoration	86.3	61.0	-	Planned
Magothy River Mesohaline	Shoreline Restoration	86.3	61.0	-	Planned
Magothy River Mesohaline	Shoreline Restoration	86.3	61.0	-	Planned
Magothy River Mesohaline	Shoreline Restoration	86.3	61.0	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stormwater Mgmt.	2,335.2	166.1	-	Planned
Magothy River Mesohaline	Stream Restoration	150.0	136.0	-	Planned
Magothy River Mesohaline	Stream Restoration	150.0	136.0	-	Planned
Magothy River Mesohaline	Stream Restoration	150.0	136.0	-	Planned
Magothy River Mesohaline	Stream Restoration	150.0	136.0	-	Planned
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	663.8	396.9	BMP0347	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	8.1	5.7	BMP0352	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	12.1	8.5	BMP0359	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	17.3	12.2	BMP0362	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	33.0	23.3	BMP0368	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	6.5	4.6	BMP0371	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	10.4	7.3	BMP0380	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	10.4	7.3	BMP0381	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	41.4	29.3	BMP0384	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	5.5	3.9	BMP0385	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	126.4	70.6	BMP0388	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	25.9	18.3	BMP0394	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	91.5	64.7	BMP0397	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	24.2	17.1	BMP0403	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	2,935.0	281.3	BMP0407	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	381.7	80.6	BMP0408	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	85.7	49.1	BMP0459	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	21.8	6.8	BMP0007	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1.3	0.3	BMP0015	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	16.2	3.7	BMP0016	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	127.2	29.4	BMP0017	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	15.1	4.7	BMP0041	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	0.4	0.1	BMP0047	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	20.7	6.4	BMP0059	Current

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	14.1	4.4	BMP0092	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	5.1	1.6	BMP0093	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	83.1	19.2	BMP0158	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	93.2	27.4	BMP0185	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	11.5	2.7	BMP0199	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	2.1	0.6	BMP0200	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	0.0	0.0	BMP0202	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	39.7	9.2	BMP0209	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	31.2	7.0	BMP0210	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	2.4	0.5	BMP0224	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	0.4	0.1	BMP0236	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	2.7	0.9	BMP0237	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	31.4	7.2	BMP0715	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	0.3	0.1	BMP0780	Current
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	42.7	14.0	BMP0847	Current
Middle Chesapeake Bay Mesohaline	Stream Restoration	403.6	145.8	BMP0277	Current
Middle Chesapeake Bay Mesohaline	Stream Restoration	73.0	20.0	BMP0320	Current
Middle Chesapeake Bay Mesohaline	Stream Restoration	6.7	3.1	BMP0737	Current
Middle Chesapeake Bay Mesohaline	Stream Restoration	892.7	411.1	BMP0738	Current
Middle Chesapeake Bay Mesohaline	Stream Restoration	19.5	16.6	BMP0771	Current
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	101.5	64.4	BMP0805	Interim
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	9.9	4.1	BMP0806	Interim
Middle Chesapeake Bay Mesohaline	Stream Restoration	145.2	0.0	BMP0739	Interim
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Middle Chesapeake Bay Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stormwater Mgmt.	1,485.6	320.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	116.9	106.0	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	78.0	70.7	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	133.2	120.8	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	62.3	56.5	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	67.6	61.3	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	127.0	115.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	135.5	122.9	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	100.5	91.1	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	105.7	95.9	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	52.4	47.5	-	Planned
Middle Chesapeake Bay Mesohaline	Stream Restoration	75.0	68.0	-	Planned
Middle Patuxent River Oligohaline	Stream Restoration	966.0	175.5	BMP0782	Interim

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Middle Patuxent River Oligohaline	Stream Restoration	442.9	282.3	-	Planned
Patapsco River Mesohaline	Land Cover Conv.	14.3	1.3	BMP0414	Current
Patapsco River Mesohaline	Land Cover Conv.	0.5	0.0	BMP0416	Current
Patapsco River Mesohaline	Land Cover Conv.	0.3	0.0	BMP0420	Current
Patapsco River Mesohaline	Land Cover Conv.	0.1	0.0	BMP0774	Current
Patapsco River Mesohaline	Land Cover Conv.	0.7	0.0	BMP0775	Current
Patapsco River Mesohaline	Shoreline Restoration	102.4	6.2	BMP0335	Current
Patapsco River Mesohaline	Shoreline Restoration	0.0	0.0	BMP0336	Current
Patapsco River Mesohaline	Shoreline Restoration	196.1	73.7	BMP0337	Current
Patapsco River Mesohaline	Shoreline Restoration	38.8	27.4	BMP0348	Current
Patapsco River Mesohaline	Shoreline Restoration	4.7	3.4	BMP0383	Current
Patapsco River Mesohaline	Shoreline Restoration	13.7	9.7	BMP0387	Current
Patapsco River Mesohaline	Shoreline Restoration	0.0	0.0	BMP0391	Current
Patapsco River Mesohaline	Shoreline Restoration	42.5	13.4	BMP0395	Current
Patapsco River Mesohaline	Shoreline Restoration	39.7	28.1	BMP0402	Current
Patapsco River Mesohaline	Stormwater Mgmt.	1.0	0.1	BMP0003	Current
Patapsco River Mesohaline	Stormwater Mgmt.	13.8	1.7	BMP0010	Current
Patapsco River Mesohaline	Stormwater Mgmt.	32.4	3.9	BMP0050	Current
Patapsco River Mesohaline	Stormwater Mgmt.	18.3	1.7	BMP0057	Current
Patapsco River Mesohaline	Stormwater Mgmt.	19.6	2.4	BMP0058	Current
Patapsco River Mesohaline	Stormwater Mgmt.	120.0	10.9	BMP0063	Current
Patapsco River Mesohaline	Stormwater Mgmt.	40.7	3.7	BMP0064	Current
Patapsco River Mesohaline	Stormwater Mgmt.	24.5	3.1	BMP0065	Current
Patapsco River Mesohaline	Stormwater Mgmt.	176.1	21.1	BMP0066	Current
Patapsco River Mesohaline	Stormwater Mgmt.	3.3	0.4	BMP0067	Current
Patapsco River Mesohaline	Stormwater Mgmt.	36.6	3.4	BMP0071	Current
Patapsco River Mesohaline	Stormwater Mgmt.	1.1	0.1	BMP0080	Current
Patapsco River Mesohaline	Stormwater Mgmt.	1.5	0.1	BMP0081	Current
Patapsco River Mesohaline	Stormwater Mgmt.	1.0	0.1	BMP0082	Current
Patapsco River Mesohaline	Stormwater Mgmt.	20.3	2.5	BMP0088	Current
Patapsco River Mesohaline	Stormwater Mgmt.	39.1	4.8	BMP0089	Current
Patapsco River Mesohaline	Stormwater Mgmt.	7.5	0.9	BMP0090	Current
Patapsco River Mesohaline	Stormwater Mgmt.	12.4	1.1	BMP0094	Current
Patapsco River Mesohaline	Stormwater Mgmt.	19.8	2.4	BMP0095	Current
Patapsco River Mesohaline	Stormwater Mgmt.	2.2	0.3	BMP0096	Current
Patapsco River Mesohaline	Stormwater Mgmt.	78.0	7.3	BMP0099	Current
Patapsco River Mesohaline	Stormwater Mgmt.	59.4	7.2	BMP0100	Current
Patapsco River Mesohaline	Stormwater Mgmt.	69.1	6.2	BMP0101	Current
Patapsco River Mesohaline	Stormwater Mgmt.	33.9	4.0	BMP0102	Current
Patapsco River Mesohaline	Stormwater Mgmt.	40.4	3.6	BMP0103	Current
Patapsco River Mesohaline	Stormwater Mgmt.	54.1	4.9	BMP0105	Current
Patapsco River Mesohaline	Stormwater Mgmt.	70.4	6.5	BMP0121	Current
Patapsco River Mesohaline	Stormwater Mgmt.	76.6	7.2	BMP0122	Current
Patapsco River Mesohaline	Stormwater Mgmt.	79.0	9.9	BMP0124	Current
Patapsco River Mesohaline	Stormwater Mgmt.	58.3	5.3	BMP0125	Current
Patapsco River Mesohaline	Stormwater Mgmt.	23.7	2.1	BMP0127	Current
Patapsco River Mesohaline	Stormwater Mgmt.	85.2	10.6	BMP0129	Current
Patapsco River Mesohaline	Stormwater Mgmt.	44.2	4.1	BMP0133	Current
Patapsco River Mesohaline	Stormwater Mgmt.	72.0	6.3	BMP0135	Current

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Patapsco River Mesohaline	Stormwater Mgmt.	103.1	12.8	BMP0139	Current
Patapsco River Mesohaline	Stormwater Mgmt.	23.1	2.9	BMP0144	Current
Patapsco River Mesohaline	Stormwater Mgmt.	46.5	5.8	BMP0145	Current
Patapsco River Mesohaline	Stormwater Mgmt.	31.2	3.9	BMP0146	Current
Patapsco River Mesohaline	Stormwater Mgmt.	17.7	2.3	BMP0149	Current
Patapsco River Mesohaline	Stormwater Mgmt.	2.6	0.2	BMP0150	Current
Patapsco River Mesohaline	Stormwater Mgmt.	5.0	0.4	BMP0151	Current
Patapsco River Mesohaline	Stormwater Mgmt.	2.5	0.2	BMP0152	Current
Patapsco River Mesohaline	Stormwater Mgmt.	6.9	0.6	BMP0153	Current
Patapsco River Mesohaline	Stormwater Mgmt.	4.8	0.4	BMP0154	Current
Patapsco River Mesohaline	Stormwater Mgmt.	7.5	0.6	BMP0155	Current
Patapsco River Mesohaline	Stormwater Mgmt.	0.2	0.0	BMP0156	Current
Patapsco River Mesohaline	Stormwater Mgmt.	16.7	1.5	BMP0157	Current
Patapsco River Mesohaline	Stormwater Mgmt.	178.5	22.4	BMP0168	Current
Patapsco River Mesohaline	Stormwater Mgmt.	5.8	0.7	BMP0171	Current
Patapsco River Mesohaline	Stormwater Mgmt.	71.0	8.6	BMP0172	Current
Patapsco River Mesohaline	Stormwater Mgmt.	77.5	7.1	BMP0173	Current
Patapsco River Mesohaline	Stormwater Mgmt.	42.5	5.2	BMP0174	Current
Patapsco River Mesohaline	Stormwater Mgmt.	121.8	10.9	BMP0175	Current
Patapsco River Mesohaline	Stormwater Mgmt.	32.0	2.8	BMP0176	Current
Patapsco River Mesohaline	Stormwater Mgmt.	11.2	1.3	BMP0177	Current
Patapsco River Mesohaline	Stormwater Mgmt.	58.6	7.2	BMP0184	Current
Patapsco River Mesohaline	Stormwater Mgmt.	1.7	0.2	BMP0192	Current
Patapsco River Mesohaline	Stormwater Mgmt.	534.8	62.3	BMP0198	Current
Patapsco River Mesohaline	Stormwater Mgmt.	92.6	11.5	BMP0229	Current
Patapsco River Mesohaline	Stormwater Mgmt.	1.0	0.1	BMP0230	Current
Patapsco River Mesohaline	Stormwater Mgmt.	19.9	2.4	BMP0231	Current
Patapsco River Mesohaline	Stormwater Mgmt.	56.1	6.9	BMP0232	Current
Patapsco River Mesohaline	Stormwater Mgmt.	108.0	12.5	BMP0234	Current
Patapsco River Mesohaline	Stormwater Mgmt.	31.0	3.9	BMP0235	Current
Patapsco River Mesohaline	Stormwater Mgmt.	28.3	3.4	BMP0243	Current
Patapsco River Mesohaline	Stormwater Mgmt.	41.6	3.8	BMP0244	Current
Patapsco River Mesohaline	Stormwater Mgmt.	43.5	5.0	BMP0812	Current
Patapsco River Mesohaline	Stormwater Mgmt.	32.9	3.8	BMP0813	Current
Patapsco River Mesohaline	Stormwater Mgmt.	50.5	6.3	BMP0816	Current
Patapsco River Mesohaline	Stormwater Mgmt.	4.8	0.4	BMP0834	Current
Patapsco River Mesohaline	Stormwater Mgmt.	72.3	6.1	BMP0844	Current
Patapsco River Mesohaline	Stream Restoration	10.0	9.2	BMP0257	Current
Patapsco River Mesohaline	Stream Restoration	900.3	90.2	BMP0268	Current
Patapsco River Mesohaline	Stream Restoration	372.3	173.6	BMP0291	Current
Patapsco River Mesohaline	Stream Restoration	17.7	16.2	BMP0294	Current
Patapsco River Mesohaline	Stream Restoration	113.4	32.5	BMP0300	Current
Patapsco River Mesohaline	Stream Restoration	101.5	47.3	BMP0728	Current
Patapsco River Mesohaline	Stream Restoration	84.9	17.4	BMP0746	Current
Patapsco River Mesohaline	Stream Restoration	10.6	9.7	BMP0773	Current
Patapsco River Mesohaline	Stream Restoration	7.6	3.9	BMP0835	Current
Patapsco River Mesohaline	Shoreline Restoration	13.6	1.6	BMP0850	Interim
Patapsco River Mesohaline	Shoreline Restoration	47.5	27.6	BMP0862	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	40.3	3.7	BMP0079	Interim

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Patapsco River Mesohaline	Stormwater Mgmt.	88.6	10.6	BMP0098	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	52.5	6.4	BMP0136	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	177.3	16.3	BMP0170	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	18.6	2.2	BMP0183	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	50.1	4.8	BMP0196	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	34.9	4.2	BMP0246	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	46.5	5.7	BMP0421	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	48.2	4.6	BMP0786	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	62.3	5.9	BMP0789	Interim
Patapsco River Mesohaline	Stormwater Mgmt.	16.8	2.1	BMP0848	Interim
Patapsco River Mesohaline	Stream Restoration	9.0	1.4	BMP0204	Interim
Patapsco River Mesohaline	Stream Restoration	60.4	14.4	BMP0281	Interim
Patapsco River Mesohaline	Stream Restoration	31.8	7.5	BMP0298	Interim
Patapsco River Mesohaline	Stream Restoration	668.8	48.1	BMP0299	Interim
Patapsco River Mesohaline	Stream Restoration	626.3	92.7	BMP0304	Interim
Patapsco River Mesohaline	Stream Restoration	365.6	26.3	BMP0308	Interim
Patapsco River Mesohaline	Stream Restoration	196.2	9.2	BMP0309	Interim
Patapsco River Mesohaline	Stream Restoration	119.2	14.1	BMP0310	Interim
Patapsco River Mesohaline	Stream Restoration	83.4	9.6	BMP0311	Interim
Patapsco River Mesohaline	Stream Restoration	27.6	3.0	BMP0312	Interim
Patapsco River Mesohaline	Stream Restoration	345.7	33.5	BMP0314	Interim
Patapsco River Mesohaline	Stream Restoration	493.1	47.3	BMP0468	Interim
Patapsco River Mesohaline	Stream Restoration	735.6	87.6	BMP0472	Interim
Patapsco River Mesohaline	Stream Restoration	1,272.6	530.9	BMP0475	Interim
Patapsco River Mesohaline	Stream Restoration	3.0	0.8	BMP0714	Interim
Patapsco River Mesohaline	Stream Restoration	120.8	21.6	BMP0777	Interim
Patapsco River Mesohaline	Stream Restoration	119.2	45.7	BMP0838	Interim
Patapsco River Mesohaline	Stream Restoration	295.7	137.7	BMP0839	Interim
Patapsco River Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Patapsco River Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Patapsco River Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Patapsco River Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Patapsco River Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	621.5	52.0	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	277.7	24.6	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	1,634.3	145.8	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	222.7	18.7	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	150.6	12.0	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	139.0	10.9	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	562.5	50.0	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	297.4	24.2	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	158.2	12.7	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	145.3	11.7	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	328.5	25.8	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	218.1	17.2	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	618.6	54.1	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	211.4	18.8	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	212.1	18.4	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	943.8	82.5	-	Planned

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Patapsco River Mesohaline	Stormwater Mgmt.	627.9	53.0	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	66.4	5.6	-	Planned
Patapsco River Mesohaline	Stormwater Mgmt.	31,940.8	2,785.9	-	Planned
Patapsco River Mesohaline	Stream Restoration	172.5	158.2	-	Planned
Patapsco River Mesohaline	Stream Restoration	307.5	109.1	-	Planned
Patapsco River Mesohaline	Stream Restoration	780.0	276.8	-	Planned
Patapsco River Mesohaline	Stream Restoration	381.6	135.4	-	Planned
Patapsco River Mesohaline	Stream Restoration	1,679.0	595.5	-	Planned
Rhode River Mesohaline	Shoreline Restoration	42.3	29.9	BMP0339	Current
Rhode River Mesohaline	Shoreline Restoration	82.9	58.6	BMP0345	Current
Rhode River Mesohaline	Shoreline Restoration	10.8	7.6	BMP0346	Current
Rhode River Mesohaline	Shoreline Restoration	4.9	3.5	BMP0369	Current
Rhode River Mesohaline	Shoreline Restoration	153.2	92.2	BMP0409	Current
Rhode River Mesohaline	Shoreline Restoration	202.0	142.8	BMP0732	Current
Rhode River Mesohaline	Shoreline Restoration	136.4	96.4	BMP0733	Current
Rhode River Mesohaline	Stormwater Mgmt.	7.7	2.5	BMP0069	Current
Rhode River Mesohaline	Stream Restoration	767.4	124.6	BMP0259	Current
Rhode River Mesohaline	Shoreline Restoration	637.9	449.2	BMP0852	Interim
Rhode River Mesohaline	Stream Restoration	1,563.5	700.2	BMP0856	Interim
Rhode River Mesohaline	Shoreline Restoration	258.9	183.0	-	Planned
Rhode River Mesohaline	Stormwater Mgmt.	596.1	133.3	-	Planned
Rhode River Mesohaline	Stormwater Mgmt.	596.1	133.3	-	Planned
Rhode River Mesohaline	Stormwater Mgmt.	596.1	133.3	-	Planned
Rhode River Mesohaline	Stream Restoration	268.4	222.8	-	Planned
Rhode River Mesohaline	Stream Restoration	231.9	192.5	-	Planned
Rhode River Mesohaline	Stream Restoration	370.0	307.2	-	Planned
Severn River Mesohaline	Land Cover Conv.	0.7	0.0	BMP0752	Current
Severn River Mesohaline	Shoreline Restoration	42.0	29.7	BMP0332	Current
Severn River Mesohaline	Shoreline Restoration	55.2	39.0	BMP0338	Current
Severn River Mesohaline	Shoreline Restoration	38.0	26.8	BMP0343	Current
Severn River Mesohaline	Shoreline Restoration	42.5	30.0	BMP0349	Current
Severn River Mesohaline	Shoreline Restoration	9.0	6.3	BMP0350	Current
Severn River Mesohaline	Shoreline Restoration	9.9	7.0	BMP0351	Current
Severn River Mesohaline	Shoreline Restoration	7.8	5.5	BMP0355	Current
Severn River Mesohaline	Shoreline Restoration	3.5	2.4	BMP0365	Current
Severn River Mesohaline	Shoreline Restoration	9.7	6.8	BMP0366	Current
Severn River Mesohaline	Shoreline Restoration	4.7	3.4	BMP0370	Current
Severn River Mesohaline	Shoreline Restoration	6.2	4.4	BMP0372	Current
Severn River Mesohaline	Shoreline Restoration	13.8	9.8	BMP0375	Current
Severn River Mesohaline	Shoreline Restoration	231.9	107.3	BMP0392	Current
Severn River Mesohaline	Shoreline Restoration	25.2	17.8	BMP0405	Current
Severn River Mesohaline	Shoreline Restoration	23.3	16.5	BMP0406	Current
Severn River Mesohaline	Shoreline Restoration	10.5	5.4	BMP0730	Current
Severn River Mesohaline	Shoreline Restoration	39.4	27.9	BMP0735	Current
Severn River Mesohaline	Shoreline Restoration	5.8	1.7	BMP0810	Current
Severn River Mesohaline	Stormwater Mgmt.	1.2	0.2	BMP0009	Current
Severn River Mesohaline	Stormwater Mgmt.	39.5	4.6	BMP0014	Current
Severn River Mesohaline	Stormwater Mgmt.	286.5	34.2	BMP0024	Current
Severn River Mesohaline	Stormwater Mgmt.	19.0	2.6	BMP0029	Current

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Severn River Mesohaline	Stormwater Mgmt.	0.7	0.1	BMP0030	Current
Severn River Mesohaline	Stormwater Mgmt.	48.9	7.9	BMP0033	Current
Severn River Mesohaline	Stormwater Mgmt.	10.9	1.6	BMP0034	Current
Severn River Mesohaline	Stormwater Mgmt.	35.4	4.1	BMP0042	Current
Severn River Mesohaline	Stormwater Mgmt.	85.1	10.9	BMP0070	Current
Severn River Mesohaline	Stormwater Mgmt.	88.8	10.6	BMP0072	Current
Severn River Mesohaline	Stormwater Mgmt.	12.9	2.0	BMP0075	Current
Severn River Mesohaline	Stormwater Mgmt.	2.5	0.3	BMP0086	Current
Severn River Mesohaline	Stormwater Mgmt.	14.3	1.7	BMP0087	Current
Severn River Mesohaline	Stormwater Mgmt.	6.6	1.0	BMP0088	Current
Severn River Mesohaline	Stormwater Mgmt.	7.8	1.0	BMP0109	Current
Severn River Mesohaline	Stormwater Mgmt.	10.1	1.1	BMP0113	Current
Severn River Mesohaline	Stormwater Mgmt.	2.0	0.3	BMP0116	Current
Severn River Mesohaline	Stormwater Mgmt.	6.6	0.8	BMP0117	Current
Severn River Mesohaline	Stormwater Mgmt.	3.4	0.4	BMP0118	Current
Severn River Mesohaline	Stormwater Mgmt.	59.3	9.6	BMP0120	Current
Severn River Mesohaline	Stormwater Mgmt.	153.4	24.8	BMP0126	Current
Severn River Mesohaline	Stormwater Mgmt.	217.1	25.8	BMP0128	Current
Severn River Mesohaline	Stormwater Mgmt.	3.6	0.6	BMP0129	Current
Severn River Mesohaline	Stormwater Mgmt.	47.6	7.8	BMP0131	Current
Severn River Mesohaline	Stormwater Mgmt.	49.2	7.9	BMP0132	Current
Severn River Mesohaline	Stormwater Mgmt.	113.8	13.4	BMP0134	Current
Severn River Mesohaline	Stormwater Mgmt.	2.2	0.4	BMP0139	Current
Severn River Mesohaline	Stormwater Mgmt.	199.2	33.4	BMP0164	Current
Severn River Mesohaline	Stormwater Mgmt.	0.4	0.1	BMP0168	Current
Severn River Mesohaline	Stormwater Mgmt.	640.0	102.9	BMP0179	Current
Severn River Mesohaline	Stormwater Mgmt.	43.8	5.2	BMP0190	Current
Severn River Mesohaline	Stormwater Mgmt.	101.1	16.5	BMP0191	Current
Severn River Mesohaline	Stormwater Mgmt.	46.3	5.4	BMP0238	Current
Severn River Mesohaline	Stormwater Mgmt.	38.6	4.6	BMP0442	Current
Severn River Mesohaline	Stormwater Mgmt.	1.1	0.1	BMP0748	Current
Severn River Mesohaline	Stormwater Mgmt.	1.1	0.1	BMP0749	Current
Severn River Mesohaline	Stormwater Mgmt.	1.0	0.1	BMP0750	Current
Severn River Mesohaline	Stormwater Mgmt.	23.3	2.9	BMP0798	Current
Severn River Mesohaline	Stormwater Mgmt.	3.8	0.5	BMP0830	Current
Severn River Mesohaline	Stream Restoration	36.2	34.0	BMP0254	Current
Severn River Mesohaline	Stream Restoration	60.0	56.2	BMP0263	Current
Severn River Mesohaline	Stream Restoration	246.0	0.0	BMP0287	Current
Severn River Mesohaline	Stream Restoration	26.8	25.2	BMP0736	Current
Severn River Mesohaline	Stream Restoration	27.8	13.3	BMP0742	Current
Severn River Mesohaline	Stream Restoration	45.1	6.3	BMP0776	Current
Severn River Mesohaline	Land Cover Conv.	2.6	0.1	BMP0849	Interim
Severn River Mesohaline	Shoreline Restoration	79.6	36.4	BMP0804	Interim
Severn River Mesohaline	Shoreline Restoration	8.3	4.8	BMP0807	Interim
Severn River Mesohaline	Stormwater Mgmt.	125.8	14.1	BMP0148	Interim
Severn River Mesohaline	Stormwater Mgmt.	191.8	29.4	BMP0720	Interim
Severn River Mesohaline	Stormwater Mgmt.	37.3	6.1	BMP0840	Interim
Severn River Mesohaline	Stormwater Mgmt.	1,219.8	194.4	BMP0848	Interim
Severn River Mesohaline	Stream Restoration	903.1	191.4	BMP0288	Interim

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Severn River Mesohaline	Stream Restoration	1,522.2	268.4	BMP0325	Interim
Severn River Mesohaline	Stream Restoration	1,346.5	603.4	BMP0465	Interim
Severn River Mesohaline	Stream Restoration	2,187.6	671.9	BMP0470	Interim
Severn River Mesohaline	Stream Restoration	687.6	86.4	BMP0708	Interim
Severn River Mesohaline	Stream Restoration	628.2	299.3	BMP0747	Interim
Severn River Mesohaline	Stream Restoration	55.4	286.5	BMP0769	Interim
Severn River Mesohaline	Stream Restoration	150.5	43.4	BMP0781	Interim
Severn River Mesohaline	Stream Restoration	1,162.3	501.1	BMP0797	Interim
Severn River Mesohaline	Shoreline Restoration	172.6	122.0	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	736.9	87.0	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	530.0	58.5	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	3,514.1	401.3	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	841.7	94.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	329.0	34.4	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	569.2	63.0	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	385.9	38.8	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	745.9	77.5	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	273.3	28.9	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	333.4	35.4	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stormwater Mgmt.	2,640.3	306.6	-	Planned
Severn River Mesohaline	Stream Restoration	298.3	246.9	-	Planned
Severn River Mesohaline	Stream Restoration	366.7	303.5	-	Planned
Severn River Mesohaline	Stream Restoration	1,056.6	874.4	-	Planned
South River Mesohaline	Land Cover Conv.	1.7	-0.0	BMP0417	Current
South River Mesohaline	Land Cover Conv.	3.6	0.6	BMP0831	Current
South River Mesohaline	Land Cover Conv.	70.6	12.5	BMP0832	Current
South River Mesohaline	Shoreline Restoration	25.9	18.3	BMP0331	Current
South River Mesohaline	Shoreline Restoration	10.7	7.6	BMP0333	Current
South River Mesohaline	Shoreline Restoration	57.6	40.7	BMP0334	Current
South River Mesohaline	Shoreline Restoration	14.4	10.2	BMP0340	Current
South River Mesohaline	Shoreline Restoration	16.1	11.4	BMP0342	Current
South River Mesohaline	Shoreline Restoration	1.3	0.9	BMP0354	Current
South River Mesohaline	Shoreline Restoration	29.3	20.7	BMP0358	Current
South River Mesohaline	Shoreline Restoration	4.3	3.1	BMP0360	Current
South River Mesohaline	Shoreline Restoration	24.2	17.1	BMP0361	Current
South River Mesohaline	Shoreline Restoration	16.4	11.6	BMP0363	Current
South River Mesohaline	Shoreline Restoration	31.1	22.0	BMP0373	Current
South River Mesohaline	Shoreline Restoration	9.2	6.5	BMP0374	Current
South River Mesohaline	Shoreline Restoration	7.8	5.5	BMP0377	Current
South River Mesohaline	Shoreline Restoration	9.8	6.9	BMP0378	Current

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
South River Mesohaline	Shoreline Restoration	2.9	2.1	BMP0379	Current
South River Mesohaline	Shoreline Restoration	13.4	9.5	BMP0382	Current
South River Mesohaline	Shoreline Restoration	162.1	100.3	BMP0389	Current
South River Mesohaline	Shoreline Restoration	24.2	17.1	BMP0399	Current
South River Mesohaline	Shoreline Restoration	35.4	25.0	BMP0401	Current
South River Mesohaline	Shoreline Restoration	35.8	25.3	BMP0404	Current
South River Mesohaline	Shoreline Restoration	962.0	606.2	BMP0410	Current
South River Mesohaline	Shoreline Restoration	339.2	213.7	BMP0411	Current
South River Mesohaline	Shoreline Restoration	24.2	17.1	BMP0412	Current
South River Mesohaline	Shoreline Restoration	97.2	62.3	BMP0731	Current
South River Mesohaline	Shoreline Restoration	70.3	11.2	BMP0792	Current
South River Mesohaline	Shoreline Restoration	71.8	46.8	BMP0811	Current
South River Mesohaline	Stormwater Mgmt.	26.2	5.7	BMP0023	Current
South River Mesohaline	Stormwater Mgmt.	9.7	2.1	BMP0028	Current
South River Mesohaline	Stormwater Mgmt.	3.4	0.6	BMP0029	Current
South River Mesohaline	Stormwater Mgmt.	9.0	1.4	BMP0036	Current
South River Mesohaline	Stormwater Mgmt.	22.0	3.7	BMP0037	Current
South River Mesohaline	Stormwater Mgmt.	112.6	15.3	BMP0038	Current
South River Mesohaline	Stormwater Mgmt.	21.4	3.3	BMP0043	Current
South River Mesohaline	Stormwater Mgmt.	25.2	4.0	BMP0045	Current
South River Mesohaline	Stormwater Mgmt.	53.4	8.4	BMP0051	Current
South River Mesohaline	Stormwater Mgmt.	1.4	0.3	BMP0055	Current
South River Mesohaline	Stormwater Mgmt.	18.6	2.9	BMP0061	Current
South River Mesohaline	Stormwater Mgmt.	14.6	2.4	BMP0062	Current
South River Mesohaline	Stormwater Mgmt.	15.0	3.2	BMP0069	Current
South River Mesohaline	Stormwater Mgmt.	58.0	8.6	BMP0073	Current
South River Mesohaline	Stormwater Mgmt.	25.5	5.4	BMP0074	Current
South River Mesohaline	Stormwater Mgmt.	3.5	0.5	BMP0076	Current
South River Mesohaline	Stormwater Mgmt.	0.9	0.1	BMP0077	Current
South River Mesohaline	Stormwater Mgmt.	2.0	0.3	BMP0078	Current
South River Mesohaline	Stormwater Mgmt.	228.3	47.9	BMP0097	Current
South River Mesohaline	Stormwater Mgmt.	96.4	12.8	BMP0108	Current
South River Mesohaline	Stormwater Mgmt.	3.4	0.5	BMP0111	Current
South River Mesohaline	Stormwater Mgmt.	57.1	12.8	BMP0123	Current
South River Mesohaline	Stormwater Mgmt.	5.5	0.8	BMP0137	Current
South River Mesohaline	Stormwater Mgmt.	150.4	26.9	BMP0138	Current
South River Mesohaline	Stormwater Mgmt.	17.0	2.7	BMP0162	Current
South River Mesohaline	Stormwater Mgmt.	104.9	16.4	BMP0163	Current
South River Mesohaline	Stormwater Mgmt.	15.2	3.7	BMP0164	Current
South River Mesohaline	Stormwater Mgmt.	79.0	12.8	BMP0165	Current
South River Mesohaline	Stormwater Mgmt.	1.0	0.2	BMP0180	Current
South River Mesohaline	Stormwater Mgmt.	3.0	0.5	BMP0181	Current
South River Mesohaline	Stormwater Mgmt.	4.0	0.6	BMP0182	Current
South River Mesohaline	Stormwater Mgmt.	4.8	0.6	BMP0211	Current
South River Mesohaline	Stormwater Mgmt.	5.7	0.8	BMP0218	Current
South River Mesohaline	Stormwater Mgmt.	21.9	4.4	BMP0222	Current
South River Mesohaline	Stormwater Mgmt.	2.0	0.4	BMP0233	Current
South River Mesohaline	Stormwater Mgmt.	5.9	0.8	BMP0239	Current
South River Mesohaline	Stormwater Mgmt.	15.4	2.3	BMP0240	Current

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
South River Mesohaline	Stormwater Mgmt.	10.9	2.4	BMP0242	Current
South River Mesohaline	Stormwater Mgmt.	488.7	95.8	BMP0245	Current
South River Mesohaline	Stormwater Mgmt.	7.2	1.2	BMP0443	Current
South River Mesohaline	Stormwater Mgmt.	40.6	6.4	BMP0721	Current
South River Mesohaline	Stormwater Mgmt.	3.1	0.4	BMP0724	Current
South River Mesohaline	Stormwater Mgmt.	5.6	0.9	BMP0833	Current
South River Mesohaline	Stream Restoration	78.0	74.8	BMP0258	Current
South River Mesohaline	Stream Restoration	58.7	56.2	BMP0260	Current
South River Mesohaline	Stream Restoration	45.2	43.3	BMP0261	Current
South River Mesohaline	Stream Restoration	21.3	20.4	BMP0262	Current
South River Mesohaline	Stream Restoration	78.6	75.3	BMP0265	Current
South River Mesohaline	Stream Restoration	28.4	27.2	BMP0276	Current
South River Mesohaline	Stream Restoration	49.6	47.6	BMP0282	Current
South River Mesohaline	Stream Restoration	212.8	204.0	BMP0283	Current
South River Mesohaline	Stream Restoration	2,313.0	697.0	BMP0286	Current
South River Mesohaline	Stream Restoration	1,906.4	316.0	BMP0295	Current
South River Mesohaline	Stream Restoration	226.6	27.9	BMP0313	Current
South River Mesohaline	Stream Restoration	20.8	19.9	BMP0316	Current
South River Mesohaline	Stream Restoration	188.6	57.1	BMP0318	Current
South River Mesohaline	Stream Restoration	718.3	124.4	BMP0319	Current
South River Mesohaline	Stream Restoration	507.1	36.7	BMP0321	Current
South River Mesohaline	Stream Restoration	21.3	20.4	BMP0323	Current
South River Mesohaline	Stream Restoration	64.0	96.3	BMP0328	Current
South River Mesohaline	Stream Restoration	497.4	144.0	BMP0329	Current
South River Mesohaline	Stream Restoration	95.5	10.0	BMP0330	Current
South River Mesohaline	Stream Restoration	226.9	91.0	BMP0454	Current
South River Mesohaline	Stream Restoration	137.2	139.2	BMP0729	Current
South River Mesohaline	Stream Restoration	325.1	459.9	BMP0740	Current
South River Mesohaline	Stream Restoration	7.2	3.5	BMP0825	Current
South River Mesohaline	Land Cover Conv.	0.3	-0.0	BMP0858	Interim
South River Mesohaline	Land Cover Conv.	3.6	0.3	BMP0863	Interim
South River Mesohaline	Shoreline Restoration	226.5	160.1	BMP0824	Interim
South River Mesohaline	Shoreline Restoration	72.0	50.9	BMP0841	Interim
South River Mesohaline	Shoreline Restoration	11.8	7.3	BMP0851	Interim
South River Mesohaline	Shoreline Restoration	65.0	42.3	BMP0859	Interim
South River Mesohaline	Shoreline Restoration	115.7	81.1	BMP0860	Interim
South River Mesohaline	Stormwater Mgmt.	25.6	4.0	BMP0800	Interim
South River Mesohaline	Stormwater Mgmt.	4.3	0.6	BMP0845	Interim
South River Mesohaline	Stormwater Mgmt.	5.6	0.9	BMP0846	Interim
South River Mesohaline	Stormwater Mgmt.	21.3	3.6	BMP0861	Interim
South River Mesohaline	Stream Restoration	87.6	82.1	BMP0464	Interim
South River Mesohaline	Stream Restoration	302.6	187.0	BMP0479	Interim
South River Mesohaline	Stream Restoration	799.4	495.0	BMP0480	Interim
South River Mesohaline	Stream Restoration	354.6	340.0	BMP0482	Interim
South River Mesohaline	Stream Restoration	172.3	83.9	BMP0772	Interim
South River Mesohaline	Stream Restoration	95.7	46.1	BMP0826	Interim
South River Mesohaline	Stormwater Mgmt.	465.7	68.1	-	Planned
South River Mesohaline	Stormwater Mgmt.	209.2	23.8	-	Planned
South River Mesohaline	Stormwater Mgmt.	602.0	82.7	-	Planned

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
South River Mesohaline	Stormwater Mgmt.	611.8	101.7	-	Planned
South River Mesohaline	Stormwater Mgmt.	250.8	32.3	-	Planned
South River Mesohaline	Stormwater Mgmt.	324.7	52.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	253.1	36.8	-	Planned
South River Mesohaline	Stormwater Mgmt.	530.7	61.7	-	Planned
South River Mesohaline	Stormwater Mgmt.	241.9	36.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	254.9	36.7	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stormwater Mgmt.	1,714.3	252.0	-	Planned
South River Mesohaline	Stream Restoration	1,002.1	847.8	-	Planned
Upper Chesapeake Bay Mesohaline	Shoreline Restoration	194.2	137.3	BMP0827	Interim
Upper Chesapeake Bay Mesohaline	Shoreline Restoration	431.6	305.1	-	Planned
Upper Chesapeake Bay Mesohaline	Shoreline Restoration	431.6	305.1	-	Planned
Upper Patuxent River Tidal Fresh	Land Cover Conv.	8.0	1.7	BMP0413	Current
Upper Patuxent River Tidal Fresh	Land Cover Conv.	1.6	0.3	BMP0418	Current
Upper Patuxent River Tidal Fresh	Land Cover Conv.	209.7	43.5	BMP0821	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	4.3	1.4	BMP0053	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	10.3	3.3	BMP0067	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	39.6	12.6	BMP0068	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	129.1	41.1	BMP0110	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	38.9	9.2	BMP0169	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	12.6	4.0	BMP0179	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	181.8	57.8	BMP0197	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	339.6	80.4	BMP0221	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	0.7	0.2	BMP0722	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	0.6	0.1	BMP0723	Current
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	12.3	3.9	BMP0836	Current
Upper Patuxent River Tidal Fresh	Stream Restoration	46.7	48.0	BMP0266	Current
Upper Patuxent River Tidal Fresh	Stream Restoration	6.9	7.1	BMP0267	Current
Upper Patuxent River Tidal Fresh	Stream Restoration	151.2	46.2	BMP0289	Current
Upper Patuxent River Tidal Fresh	Stream Restoration	553.0	227.4	BMP0324	Current
Upper Patuxent River Tidal Fresh	Stream Restoration	162.5	77.2	BMP0712	Current
Upper Patuxent River Tidal Fresh	Stream Restoration	13.9	7.2	BMP0779	Current
Upper Patuxent River Tidal Fresh	Shoreline Restoration	43.2	30.5	BMP0693	Interim
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	2.7	0.9	BMP0848	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	184.8	177.6	BMP0301	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	175.7	180.3	BMP0692	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	1,919.1	1,009.6	BMP0694	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	193.8	113.9	BMP0784	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	46.2	0.0	BMP0818	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	299.0	66.4	BMP0853	Interim

Bay TMDL Watershed	Type	TN (lbs)	TP (lbs)	BMP ID	Scenario
Upper Patuxent River Tidal Fresh	Stream Restoration	38.5	8.4	BMP0854	Interim
Upper Patuxent River Tidal Fresh	Stream Restoration	157.8	34.5	BMP0855	Interim
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	482.2	114.1	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	543.8	128.5	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	646.5	145.6	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	315.3	74.1	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	358.3	84.6	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	620.0	146.6	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stormwater Mgmt.	940.1	212.3	-	Planned
Upper Patuxent River Tidal Fresh	Stream Restoration	643.3	582.3	-	Planned
Upper Patuxent River Tidal Fresh	Stream Restoration	611.5	553.6	-	Planned
Upper Patuxent River Tidal Fresh	Stream Restoration	709.3	642.1	-	Planned
Upper Patuxent River Tidal Fresh	Stream Restoration	496.1	449.1	-	Planned
Upper Patuxent River Tidal Fresh	Stream Restoration	1,252.5	1,133.8	-	Planned
Upper Patuxent River Tidal Fresh	Stream Restoration	783.0	708.8	-	Planned
West River Mesohaline	Land Cover Conv.	0.6	0.0	BMP0415	Current
West River Mesohaline	Shoreline Restoration	35.8	25.3	BMP0344	Current
West River Mesohaline	Shoreline Restoration	11.2	7.9	BMP0357	Current
West River Mesohaline	Shoreline Restoration	14.7	10.4	BMP0364	Current
West River Mesohaline	Shoreline Restoration	3.0	2.1	BMP0376	Current
West River Mesohaline	Shoreline Restoration	13.8	9.8	BMP0386	Current
West River Mesohaline	Shoreline Restoration	49.6	35.1	BMP0400	Current
West River Mesohaline	Shoreline Restoration	94.9	36.4	BMP0485	Current
West River Mesohaline	Stormwater Mgmt.	5.6	0.9	BMP0020	Current
West River Mesohaline	Stormwater Mgmt.	12.6	2.4	BMP0725	Current
West River Mesohaline	Stormwater Mgmt.	8.1	1.5	BMP0726	Current
West River Mesohaline	Shoreline Restoration	49.1	34.7	BMP0803	Interim
West River Mesohaline	Land Cover Conv.	559.3	112.8	-	Planned
West River Mesohaline	Land Cover Conv.	559.3	112.8	-	Planned
West River Mesohaline	Shoreline Restoration	86.3	61.0	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stormwater Mgmt.	488.8	83.7	-	Planned
West River Mesohaline	Stream Restoration	90.0	81.6	-	Planned

Appendix D BMPs Completed or Planned in Bacteria TMDL Watersheds, 2012-2024

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02130903 - Furnace Creek	PWET	BMP0065	Complete
02130903 - Furnace Creek	PWED	BMP0066	Complete
02130903 - Furnace Creek	PWET	BMP0095	Complete
02130903 - Furnace Creek	SPSC	BMP0103	Complete
02130903 - Furnace Creek	MIBR	BMP0105	Complete
02130903 - Furnace Creek	IBAS	BMP0121	Complete
02130903 - Furnace Creek	SPSC	BMP0127	Complete
02130903 - Furnace Creek	IBAS	BMP0133	Complete
02130903 - Furnace Creek	IBAS	BMP0175	Complete
02130903 - Furnace Creek	FBIO	BMP0192	Complete
02130903 - Furnace Creek	PWED	BMP0231	Complete
02130903 - Furnace Creek	IBAS	BMP0812	Complete
02130903 - Furnace Creek	IBAS	BMP0813	Complete
02130903 - Furnace Creek	SPSC	BMP0844	Complete
02130903 - Furnace Creek	SEPC	BMP5259	Complete
02130903 - Furnace Creek	SEPC	BMP5270	Complete
02130903 - Furnace Creek	SEPC	BMP5271	Complete
02130903 - Furnace Creek	SEPC	BMP6300	Complete
02130903 - Furnace Creek	SEPC	BMP6963	Complete
02130903 - Furnace Creek	SEPC	BMP6970	Complete
02130903 - Furnace Creek	SEPC	BMP7162	Complete
02130903 - Furnace Creek	SEPC	BMP7166	Complete
02130903 - Furnace Creek	SEPC	BMP7167	Complete
02130903 - Furnace Creek	SEPC	BMP7168	Complete
02130903 - Furnace Creek	SEPC	BMP7169	Complete
02130903 - Furnace Creek	SEPC	BMP7181	Complete
02130903 - Furnace Creek	SEPC	BMP7197	Complete
02130903 - Furnace Creek	BMP TBD	AA88POI201944	Planned
02130903 - Furnace Creek	BMP TBD	AA91POI201827	Planned
02130903 - Furnace Creek	SPSC	BMP0196	Planned
02130903 - Marley Creek	SPSC	BMP0063	Complete
02130903 - Marley Creek	SPSC	BMP0064	Complete
02130903 - Marley Creek	MRNG	BMP0080	Complete
02130903 - Marley Creek	MRNG	BMP0081	Complete
02130903 - Marley Creek	MRNG	BMP0082	Complete
02130903 - Marley Creek	SPSC	BMP0094	Complete
02130903 - Marley Creek	SPSC	BMP0122	Complete
02130903 - Marley Creek	WPWS	BMP0139	Complete
02130903 - Marley Creek	PWED	BMP0172	Complete
02130903 - Marley Creek	PWED	BMP0174	Complete
02130903 - Marley Creek	SEPC	BMP5261	Complete
02130903 - Marley Creek	SEPC	BMP5264	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02130903 - Marley Creek	SEPC	BMP5272	Complete
02130903 - Marley Creek	SEPC	BMP5273	Complete
02130903 - Marley Creek	SEPC	BMP5274	Complete
02130903 - Marley Creek	SEPC	BMP5275	Complete
02130903 - Marley Creek	SEPC	BMP5277	Complete
02130903 - Marley Creek	SEPC	BMP5278	Complete
02130903 - Marley Creek	SEPC	BMP5279	Complete
02130903 - Marley Creek	SEPC	BMP5280	Complete
02130903 - Marley Creek	SEPC	BMP5281	Complete
02130903 - Marley Creek	SEPC	BMP5282	Complete
02130903 - Marley Creek	SEPC	BMP5283	Complete
02130903 - Marley Creek	SEPC	BMP5284	Complete
02130903 - Marley Creek	SEPC	BMP5285	Complete
02130903 - Marley Creek	SEPC	BMP5286	Complete
02130903 - Marley Creek	SEPC	BMP5288	Complete
02130903 - Marley Creek	SEPC	BMP5289	Complete
02130903 - Marley Creek	SEPC	BMP5291	Complete
02130903 - Marley Creek	SEPC	BMP5292	Complete
02130903 - Marley Creek	SEPC	BMP5293	Complete
02130903 - Marley Creek	SEPC	BMP5294	Complete
02130903 - Marley Creek	SEPC	BMP5295	Complete
02130903 - Marley Creek	SEPC	BMP5296	Complete
02130903 - Marley Creek	SEPC	BMP5297	Complete
02130903 - Marley Creek	SEPC	BMP5298	Complete
02130903 - Marley Creek	SEPC	BMP5299	Complete
02130903 - Marley Creek	SEPC	BMP5300	Complete
02130903 - Marley Creek	SEPC	BMP5302	Complete
02130903 - Marley Creek	SEPC	BMP5303	Complete
02130903 - Marley Creek	SEPC	BMP5304	Complete
02130903 - Marley Creek	SEPC	BMP5305	Complete
02130903 - Marley Creek	SEPC	BMP5306	Complete
02130903 - Marley Creek	SEPC	BMP5307	Complete
02130903 - Marley Creek	SEPC	BMP5308	Complete
02130903 - Marley Creek	SEPC	BMP5309	Complete
02130903 - Marley Creek	SEPC	BMP5318	Complete
02130903 - Marley Creek	SEPC	BMP5319	Complete
02130903 - Marley Creek	SEPC	BMP5335	Complete
02130903 - Marley Creek	SEPC	BMP5339	Complete
02130903 - Marley Creek	SEPC	BMP5353	Complete
02130903 - Marley Creek	SEPC	BMP5365	Complete
02130903 - Marley Creek	SEPC	BMP6287	Complete
02130903 - Marley Creek	SEPC	BMP6554	Complete
02130903 - Marley Creek	SEPC	BMP6557	Complete
02130903 - Marley Creek	SEPC	BMP6558	Complete
02130903 - Marley Creek	SEPC	BMP6949	Complete
02130903 - Marley Creek	SEPC	BMP6959	Complete
02130903 - Marley Creek	SEPC	BMP6969	Complete
02130903 - Marley Creek	SEPC	BMP7179	Complete
02130903 - Marley Creek	SEPC	BMP7180	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02130903 - Marley Creek	SEPC	BMP7189	Complete
02130903 - Marley Creek	SEPC	BMP7199	Complete
02130903 - Marley Creek	SEPC	BMP7200	Complete
02130903 - Marley Creek	BMP TBD	AA06POI202196	Planned
02130903 - Marley Creek	BMP TBD	AA91POI202283	Planned
02130903 - Marley Creek	BMP TBD	AA93POI204655	Planned
02130903 - Marley Creek	BMP TBD	AA97POI207627	Planned
02130903 - Marley Creek	WEDW	BMP0136	Planned
02130903 - Marley Creek	WEDW	BMP0421	Planned
02130906 - Patapsco LNB	IBAS	BMP0057	Complete
02130906 - Patapsco LNB	IBAS	BMP0071	Complete
02130906 - Patapsco LNB	PWET	BMP0088	Complete
02130906 - Patapsco LNB	PWET	BMP0096	Complete
02130906 - Patapsco LNB	WSHW	BMP0100	Complete
02130906 - Patapsco LNB	PWET	BMP0129	Complete
02130906 - Patapsco LNB	SPSC	BMP0135	Complete
02130906 - Patapsco LNB	MSWB	BMP0150	Complete
02130906 - Patapsco LNB	MRNG	BMP0156	Complete
02130906 - Patapsco LNB	WEDW	BMP0168	Complete
02130906 - Patapsco LNB	SPSC	BMP0176	Complete
02130906 - Patapsco LNB	ITRN	BMP0177	Complete
02130906 - Patapsco LNB	PWET	BMP0198	Complete
02130906 - Patapsco LNB	PWED	BMP0232	Complete
02130906 - Patapsco LNB	PWET	BMP0234	Complete
02130906 - Patapsco LNB	WSHW	BMP0243	Complete
02130906 - Patapsco LNB	IBAS	BMP0244	Complete
02130906 - Patapsco LNB	PWET	BMP0816	Complete
02130906 - Patapsco LNB	SEPC	BMP5232	Complete
02130906 - Patapsco LNB	SEPC	BMP5236	Complete
02130906 - Patapsco LNB	SEPC	BMP5237	Complete
02130906 - Patapsco LNB	SEPC	BMP5238	Complete
02130906 - Patapsco LNB	SEPC	BMP5239	Complete
02130906 - Patapsco LNB	SEPC	BMP5263	Complete
02130906 - Patapsco LNB	SEPC	BMP6548	Complete
02130906 - Patapsco LNB	SEPC	BMP6950	Complete
02130906 - Patapsco LNB	SEPC	BMP6955	Complete
02130906 - Patapsco LNB	SEPC	BMP6957	Complete
02130906 - Patapsco LNB	SEPC	BMP6967	Complete
02130906 - Patapsco LNB	SEPC	BMP6975	Complete
02130906 - Patapsco LNB	SEPC	BMP6976	Complete
02130906 - Patapsco LNB	SEPC	BMP6977	Complete
02130906 - Patapsco LNB	SEPC	BMP6978	Complete
02130906 - Patapsco LNB	SEPC	BMP6979	Complete
02130906 - Patapsco LNB	SEPC	BMP6980	Complete
02130906 - Patapsco LNB	SEPC	BMP6981	Complete
02130906 - Patapsco LNB	SEPC	BMP6982	Complete
02130906 - Patapsco LNB	SEPC	BMP6983	Complete
02130906 - Patapsco LNB	SEPC	BMP6984	Complete
02130906 - Patapsco LNB	SEPC	BMP6985	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02130906 - Patapsco LNB	SEPC	BMP6986	Complete
02130906 - Patapsco LNB	SEPC	BMP6987	Complete
02130906 - Patapsco LNB	SEPC	BMP6988	Complete
02130906 - Patapsco LNB	SEPC	BMP7161	Complete
02130906 - Patapsco LNB	SEPC	BMP7163	Complete
02130906 - Patapsco LNB	SEPC	BMP7164	Complete
02130906 - Patapsco LNB	SEPC	BMP7165	Complete
02130906 - Patapsco LNB	SEPC	BMP7191	Complete
02130906 - Patapsco LNB	SEPC	BMP7194	Complete
02130906 - Patapsco LNB	SEPC	BMP7203	Complete
02130906 - Patapsco LNB	SEPC	BMP7204	Complete
02130906 - Patapsco LNB	BMP TBD	AA00POI101578	Planned
02130906 - Patapsco LNB	BMP TBD	AA09POI202048	Planned
02130906 - Patapsco LNB	BMP TBD	AA09POI202049	Planned
02130906 - Patapsco LNB	BMP TBD	AA09POI202050	Planned
02130906 - Patapsco LNB	BMP TBD	AA60POI201974	Planned
02130906 - Patapsco LNB	BMP TBD	AA84POI204242	Planned
02130906 - Patapsco LNB	BMP TBD	AA91POI202055	Planned
02130906 - Patapsco LNB	FSND	BMP0098	Planned
02130906 - Patapsco LNB	SPSC	BMP0170	Planned
02130906 - Patapsco LNB	SPSC	BMP0786	Planned
02130906 - Patapsco LNB	SPSC	BMP0789	Planned
02131001 - Forked Creek	SPSC	BMP0091	Complete
02131001 - Forked Creek	MRNG	BMP0716	Complete
02131001 - Forked Creek	MRNG	BMP0717	Complete
02131001 - Forked Creek	MRNG	BMP0718	Complete
02131001 - Forked Creek	SEPC	BMP5257	Complete
02131001 - Magothy River Subsegment	ITRN	BMP0001	Complete
02131001 - Magothy River Subsegment	PWET	BMP0002	Complete
02131001 - Magothy River Subsegment	PWET	BMP0004	Complete
02131001 - Magothy River Subsegment	PWET	BMP0005	Complete
02131001 - Magothy River Subsegment	PWET	BMP0007	Complete
02131001 - Magothy River Subsegment	PWET	BMP0008	Complete
02131001 - Magothy River Subsegment	PWET	BMP0009	Complete
02131001 - Magothy River Subsegment	PWET	BMP0010	Complete
02131001 - Magothy River Subsegment	SPSC	BMP0011	Complete
02131001 - Magothy River Subsegment	SPSC	BMP0012	Complete
02131001 - Magothy River Subsegment	PWET	BMP0013	Complete
02131001 - Magothy River Subsegment	PWET	BMP0018	Complete
02131001 - Magothy River Subsegment	PWET	BMP0019	Complete
02131001 - Magothy River Subsegment	PWET	BMP0021	Complete
02131001 - Magothy River Subsegment	PWET	BMP0022	Complete
02131001 - Magothy River Subsegment	PWED	BMP0025	Complete
02131001 - Magothy River Subsegment	PWET	BMP0026	Complete
02131001 - Magothy River Subsegment	MSWB	BMP0027	Complete
02131001 - Magothy River Subsegment	PWET	BMP0031	Complete
02131001 - Magothy River Subsegment	PWET	BMP0032	Complete
02131001 - Magothy River Subsegment	PWET	BMP0035	Complete
02131001 - Magothy River Subsegment	PWET	BMP0039	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02131001 - Magothy River Subsegment	FBIO	BMP0040	Complete
02131001 - Magothy River Subsegment	PWET	BMP0048	Complete
02131001 - Magothy River Subsegment	PWET	BMP0050	Complete
02131001 - Magothy River Subsegment	PWET	BMP0056	Complete
02131001 - Magothy River Subsegment	FBIO	BMP0060	Complete
02131001 - Magothy River Subsegment	FBIO	BMP0114	Complete
02131001 - Magothy River Subsegment	FBIO	BMP0115	Complete
02131001 - Magothy River Subsegment	SPSC	BMP0119	Complete
02131001 - Magothy River Subsegment	SPSC	BMP0130	Complete
02131001 - Magothy River Subsegment	PWED	BMP0149	Complete
02131001 - Magothy River Subsegment	FBIO	BMP0186	Complete
02131001 - Magothy River Subsegment	MRNG	BMP0187	Complete
02131001 - Magothy River Subsegment	FBIO	BMP0188	Complete
02131001 - Magothy River Subsegment	SPSC	BMP0189	Complete
02131001 - Magothy River Subsegment	PWED	BMP0230	Complete
02131001 - Magothy River Subsegment	SPSC	BMP0238	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5230	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5241	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5253	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5254	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5255	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5256	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5258	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5260	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5267	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5276	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5287	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5290	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5301	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5320	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5327	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5329	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5338	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5342	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5343	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5344	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5346	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5349	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5358	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5366	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5368	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5369	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5370	Complete
02131001 - Magothy River Subsegment	SEPC	BMP5371	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6292	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6293	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6294	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6298	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6299	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02131001 - Magothy River Subsegment	SEPC	BMP6553	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6559	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6563	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6566	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6567	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6568	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6946	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6947	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6962	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6964	Complete
02131001 - Magothy River Subsegment	SEPC	BMP6966	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7184	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7188	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7190	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7193	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7195	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7202	Complete
02131001 - Magothy River Subsegment	SEPC	BMP7205	Complete
02131001 - Magothy River Subsegment	PWED	BMP0140	Planned
02131001 - Magothy River Subsegment	PWED	BMP0141	Planned
02131001 - Magothy River Subsegment	PWED	BMP0142	Planned
02131001 - Magothy River Subsegment	SPSC	BMP0143	Planned
02131001 - Magothy River Subsegment	SPSC	BMP0843	Planned
02131001 - Tar Cove	SPSC	BMP0719	Complete
02131002 - Mill Creek	MRNG	BMP0047	Complete
02131002 - Mill Creek	PWET	BMP0059	Complete
02131002 - Mill Creek	PWET	BMP0092	Complete
02131002 - Mill Creek	PWET	BMP0093	Complete
02131002 - Mill Creek	SPSC	BMP0209	Complete
02131002 - Mill Creek	SPSC	BMP0210	Complete
02131002 - Mill Creek	WEDW	BMP0237	Complete
02131002 - Mill Creek	WSHW	BMP0847	Complete
02131002 - Severn River Subsegment	SPSC	BMP0014	Complete
02131002 - Severn River Subsegment	SPSC	BMP0024	Complete
02131002 - Severn River Subsegment	SPSC	BMP0029	Complete
02131002 - Severn River Subsegment	SPSC	BMP0030	Complete
02131002 - Severn River Subsegment	PWET	BMP0033	Complete
02131002 - Severn River Subsegment	PWET	BMP0034	Complete
02131002 - Severn River Subsegment	SPSC	BMP0042	Complete
02131002 - Severn River Subsegment	SPSC	BMP0070	Complete
02131002 - Severn River Subsegment	SPSC	BMP0072	Complete
02131002 - Severn River Subsegment	PWET	BMP0075	Complete
02131002 - Severn River Subsegment	MSGW	BMP0086	Complete
02131002 - Severn River Subsegment	MSGW	BMP0087	Complete
02131002 - Severn River Subsegment	SPSC	BMP0109	Complete
02131002 - Severn River Subsegment	SPSC	BMP0113	Complete
02131002 - Severn River Subsegment	FSND	BMP0116	Complete
02131002 - Severn River Subsegment	FBIO	BMP0117	Complete
02131002 - Severn River Subsegment	ITRN	BMP0118	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02131002 - Severn River Subsegment	PWED	BMP0120	Complete
02131002 - Severn River Subsegment	WEDW	BMP0126	Complete
02131002 - Severn River Subsegment	SPSC	BMP0128	Complete
02131002 - Severn River Subsegment	PWET	BMP0131	Complete
02131002 - Severn River Subsegment	WEDW	BMP0132	Complete
02131002 - Severn River Subsegment	SPSC	BMP0134	Complete
02131002 - Severn River Subsegment	WSHW	BMP0164	Complete
02131002 - Severn River Subsegment	PWED	BMP0179	Complete
02131002 - Severn River Subsegment	SPSC	BMP0190	Complete
02131002 - Severn River Subsegment	PWET	BMP0191	Complete
02131002 - Severn River Subsegment	SPSC	BMP0442	Complete
02131002 - Severn River Subsegment	MIBR	BMP0748	Complete
02131002 - Severn River Subsegment	MIBR	BMP0749	Complete
02131002 - Severn River Subsegment	MIBR	BMP0750	Complete
02131002 - Severn River Subsegment	SPSC	BMP0798	Complete
02131002 - Severn River Subsegment	MMBR	BMP0830	Complete
02131002 - Severn River Subsegment	SEPC	BMP5226	Complete
02131002 - Severn River Subsegment	SEPC	BMP5227	Complete
02131002 - Severn River Subsegment	SEPC	BMP5228	Complete
02131002 - Severn River Subsegment	SEPC	BMP5231	Complete
02131002 - Severn River Subsegment	SEPC	BMP5233	Complete
02131002 - Severn River Subsegment	SEPC	BMP5240	Complete
02131002 - Severn River Subsegment	SEPC	BMP5242	Complete
02131002 - Severn River Subsegment	SEPC	BMP5243	Complete
02131002 - Severn River Subsegment	SEPC	BMP5244	Complete
02131002 - Severn River Subsegment	SEPC	BMP5245	Complete
02131002 - Severn River Subsegment	SEPC	BMP5246	Complete
02131002 - Severn River Subsegment	SEPC	BMP5247	Complete
02131002 - Severn River Subsegment	SEPC	BMP5265	Complete
02131002 - Severn River Subsegment	SEPC	BMP5266	Complete
02131002 - Severn River Subsegment	SEPC	BMP5268	Complete
02131002 - Severn River Subsegment	SEPC	BMP5269	Complete
02131002 - Severn River Subsegment	SEPC	BMP5311	Complete
02131002 - Severn River Subsegment	SEPC	BMP5313	Complete
02131002 - Severn River Subsegment	SEPC	BMP5315	Complete
02131002 - Severn River Subsegment	SEPC	BMP5316	Complete
02131002 - Severn River Subsegment	SEPC	BMP5317	Complete
02131002 - Severn River Subsegment	SEPC	BMP5322	Complete
02131002 - Severn River Subsegment	SEPC	BMP5324	Complete
02131002 - Severn River Subsegment	SEPC	BMP5332	Complete
02131002 - Severn River Subsegment	SEPC	BMP5333	Complete
02131002 - Severn River Subsegment	SEPC	BMP5334	Complete
02131002 - Severn River Subsegment	SEPC	BMP5337	Complete
02131002 - Severn River Subsegment	SEPC	BMP5340	Complete
02131002 - Severn River Subsegment	SEPC	BMP5341	Complete
02131002 - Severn River Subsegment	SEPC	BMP5345	Complete
02131002 - Severn River Subsegment	SEPC	BMP5351	Complete
02131002 - Severn River Subsegment	SEPC	BMP5352	Complete
02131002 - Severn River Subsegment	SEPC	BMP5357	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02131002 - Severn River Subsegment	SEPC	BMP5362	Complete
02131002 - Severn River Subsegment	SEPC	BMP5363	Complete
02131002 - Severn River Subsegment	SEPC	BMP5364	Complete
02131002 - Severn River Subsegment	SEPC	BMP6286	Complete
02131002 - Severn River Subsegment	SEPC	BMP6288	Complete
02131002 - Severn River Subsegment	SEPC	BMP6289	Complete
02131002 - Severn River Subsegment	SEPC	BMP6290	Complete
02131002 - Severn River Subsegment	SEPC	BMP6296	Complete
02131002 - Severn River Subsegment	SEPC	BMP6301	Complete
02131002 - Severn River Subsegment	SEPC	BMP6542	Complete
02131002 - Severn River Subsegment	SEPC	BMP6544	Complete
02131002 - Severn River Subsegment	SEPC	BMP6549	Complete
02131002 - Severn River Subsegment	SEPC	BMP6555	Complete
02131002 - Severn River Subsegment	SEPC	BMP6564	Complete
02131002 - Severn River Subsegment	SEPC	BMP6948	Complete
02131002 - Severn River Subsegment	SEPC	BMP6951	Complete
02131002 - Severn River Subsegment	SEPC	BMP6953	Complete
02131002 - Severn River Subsegment	SEPC	BMP6954	Complete
02131002 - Severn River Subsegment	SEPC	BMP6956	Complete
02131002 - Severn River Subsegment	SEPC	BMP6958	Complete
02131002 - Severn River Subsegment	SEPC	BMP6968	Complete
02131002 - Severn River Subsegment	SEPC	BMP6972	Complete
02131002 - Severn River Subsegment	SEPC	BMP7152	Complete
02131002 - Severn River Subsegment	SEPC	BMP7154	Complete
02131002 - Severn River Subsegment	SEPC	BMP7155	Complete
02131002 - Severn River Subsegment	SEPC	BMP7156	Complete
02131002 - Severn River Subsegment	SEPC	BMP7174	Complete
02131002 - Severn River Subsegment	SEPC	BMP7176	Complete
02131002 - Severn River Subsegment	SEPC	BMP7178	Complete
02131002 - Severn River Subsegment	SEPC	BMP7182	Complete
02131002 - Severn River Subsegment	SEPC	BMP7185	Complete
02131002 - Severn River Subsegment	SEPC	BMP7186	Complete
02131002 - Severn River Subsegment	SEPC	BMP7187	Complete
02131002 - Severn River Subsegment	SEPC	BMP7192	Complete
02131002 - Severn River Subsegment	SEPC	BMP7196	Complete
02131002 - Severn River Subsegment	SEPC	BMP7198	Complete
02131002 - Severn River Subsegment	SEPC	BMP7201	Complete
02131002 - Severn River Subsegment	SEPC	BMP7207	Complete
02131002 - Severn River Subsegment	BMP TBD	AA01POI214361	Planned
02131002 - Severn River Subsegment	BMP TBD	AA07POI213450	Planned
02131002 - Severn River Subsegment	BMP TBD	AA86POI215508	Planned
02131002 - Severn River Subsegment	BMP TBD	AA87POI212546	Planned
02131002 - Severn River Subsegment	BMP TBD	AA92POI211980	Planned
02131002 - Severn River Subsegment	BMP TBD	AA93POI211672	Planned
02131002 - Severn River Subsegment	BMP TBD	AA94POI211361	Planned
02131002 - Severn River Subsegment	BMP TBD	AA97POI212052	Planned
02131002 - Severn River Subsegment	BMP TBD	AA97POI212823	Planned
02131002 - Severn River Subsegment	BMP TBD	AA99POI212910	Planned
02131002 - Severn River Subsegment	SPSC	BMP0148	Planned

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02131002 - Severn River Subsegment	PWED	BMP0720	Planned
02131002 - Severn River Subsegment	WPWS	BMP0840	Planned
02131002 - Severn River Subsegment	PWET	BMP0848	Planned
02131002 - Whitehall and Meredith Creeks	SPSC	BMP0158	Complete
02131002 - Whitehall and Meredith Creeks	SPSC	BMP0199	Complete
02131002 - Whitehall and Meredith Creeks	SPSC	BMP0715	Complete
02131002 - Whitehall and Meredith Creeks	SEPC	BMP5229	Complete
02131002 - Whitehall and Meredith Creeks	SEPC	BMP5367	Complete
02131003 - Duvall Creek	PWET	BMP0028	Complete
02131003 - Duvall Creek	FBIO	BMP0061	Complete
02131003 - Duvall Creek	MRNG	BMP0211	Complete
02131003 - Duvall Creek	SEPC	BMP5314	Complete
02131003 - Ramsey Lake	MSWB	BMP0833	Complete
02131003 - South River Subsegment	PWET	BMP0023	Complete
02131003 - South River Subsegment	SPSC	BMP0036	Complete
02131003 - South River Subsegment	SPSC	BMP0037	Complete
02131003 - South River Subsegment	SPSC	BMP0038	Complete
02131003 - South River Subsegment	SPSC	BMP0043	Complete
02131003 - South River Subsegment	SPSC	BMP0045	Complete
02131003 - South River Subsegment	SPSC	BMP0051	Complete
02131003 - South River Subsegment	MSGW	BMP0055	Complete
02131003 - South River Subsegment	PWET	BMP0069	Complete
02131003 - South River Subsegment	SPSC	BMP0073	Complete
02131003 - South River Subsegment	PMPS	BMP0074	Complete
02131003 - South River Subsegment	MSWB	BMP0076	Complete
02131003 - South River Subsegment	MSWG	BMP0077	Complete
02131003 - South River Subsegment	PWET	BMP0097	Complete
02131003 - South River Subsegment	SPSC	BMP0108	Complete
02131003 - South River Subsegment	MRNG	BMP0111	Complete
02131003 - South River Subsegment	PWET	BMP0123	Complete
02131003 - South River Subsegment	SPSC	BMP0137	Complete
02131003 - South River Subsegment	PWED	BMP0138	Complete
02131003 - South River Subsegment	SPSC	BMP0162	Complete
02131003 - South River Subsegment	SPSC	BMP0165	Complete
02131003 - South River Subsegment	FBIO	BMP0180	Complete
02131003 - South River Subsegment	FBIO	BMP0181	Complete
02131003 - South River Subsegment	FBIO	BMP0182	Complete
02131003 - South River Subsegment	PWET	BMP0233	Complete
02131003 - South River Subsegment	ITRN	BMP0239	Complete
02131003 - South River Subsegment	SPSC	BMP0240	Complete
02131003 - South River Subsegment	PWED	BMP0242	Complete
02131003 - South River Subsegment	PWED	BMP0245	Complete
02131003 - South River Subsegment	FBIO	BMP0443	Complete
02131003 - South River Subsegment	SPSC	BMP0721	Complete
02131003 - South River Subsegment	MMBR	BMP0724	Complete
02131003 - South River Subsegment	SEPC	BMP5249	Complete
02131003 - South River Subsegment	SEPC	BMP5360	Complete
02131003 - South River Subsegment	SEPC	BMP6562	Complete
02131003 - South River Subsegment	SEPC	BMP7171	Complete

Bacteria TMDL Watershed	Type	BMP ID	Scenario
02131003 - South River Subsegment	SEPC	BMP7172	Complete
02131003 - South River Subsegment	SEPC	BMP7173	Complete
02131003 - South River Subsegment	BMP TBD	AA00POI109473	Planned
02131003 - South River Subsegment	BMP TBD	AA11POI226061	Planned
02131003 - South River Subsegment	BMP TBD	AA60POI224014	Planned
02131003 - South River Subsegment	BMP TBD	AA85POI224285	Planned
02131003 - South River Subsegment	BMP TBD	AA91POI225816	Planned
02131003 - South River Subsegment	BMP TBD	AA94POI223115	Planned
02131003 - South River Subsegment	BMP TBD	AA94POI224481	Planned
02131003 - South River Subsegment	BMP TBD	AA96POI225241	Planned
02131003 - South River Subsegment	BMP TBD	AA98POI224053	Planned
02131003 - South River Subsegment	BMP TBD	AA99POI224054	Planned
02131003 - South River Subsegment	SPSC	BMP0845	Planned
02131003 - South River Subsegment	MMBR	BMP0846	Planned
02131003 - South River Subsegment	SPSC	BMP0861	Planned
02131004 - Bear Neck Creek	SEPC	BMP6565	Complete
02131004 - Bear Neck Creek	BMP TBD	AA00POI209660	Planned
02131004 - Bear Neck Creek	BMP TBD	AA05POI209098	Planned
02131004 - Cadle Creek	BMP TBD	AA00POI206813	Planned
02131004 - Parish Creek	SEPC	BMP5355	Complete
02131004 - Parish Creek	SEPC	BMP6545	Complete
02131004 - Parish Creek	SEPC	BMP6560	Complete
02131004 - West River Subsegment	MSWB	BMP0020	Complete
02131004 - West River Subsegment	SPSC	BMP0725	Complete
02131004 - West River Subsegment	SPSC	BMP0726	Complete
02131004 - West River Subsegment	SEPC	BMP5347	Complete
02131004 - West River Subsegment	SEPC	BMP5361	Complete
02131004 - West River Subsegment	BMP TBD	AA00POI208478	Planned
02131004 - West River Subsegment	BMP TBD	AA01POI209478	Planned
02131004 - West River Subsegment	BMP TBD	AA06POI205805	Planned
02131004 - West River Subsegment	BMP TBD	AA06POI205807	Planned
02131005 - Tracy and Rockhold Creeks	SPSC	BMP0780	Complete
02131005 - Tracy and Rockhold Creeks	SEPC	BMP5250	Complete
02131005 - Tracy and Rockhold Creeks	SEPC	BMP5348	Complete
02131005 - Tracy and Rockhold Creeks	SEPC	BMP5356	Complete
02131005 - Tracy and Rockhold Creeks	SEPC	BMP6942	Complete

Appendix E TIPP Tool Spreadsheets

See documents provided in 'AACountyFY24TIPPSpreadsheets.zip'

Appendix F Bacterial TMDL Documents

See documents provided in accompanying folder 'Appendix F'

Appendix G PCB TMDL Supporting Documents

See documents provided in accompanying folder 'Appendix G'

Appendix H TMDL Plan Updates (Baltimore Harbor Nutrient TMDL Update)

See documents provided in accompanying folder 'Appendix H'

Appendix I Response to MDE Comments: Anne Arundel Countywide TMDL Stormwater Implementation Plan - FY 2023 Progress Report

MDE Watershed Protection, Restoration, and Planning Program (WPRPP) Recommendations for Improvement to Anne Arundel County's Countywide TMDL SW-WLA Plan (8.19.2024)

1) "Tree Canopy over Aggregate Impervious" should be added as a land cover conversion from Aggregate Impervious. Please ensure that the acres claimed for this practice are added to the baseline Aggregate Impervious acres, not Turf. There is not a Turf to Tree Canopy over Impervious land use conversion.

Response: This change will not impact the results, but the County agrees that this should be modified, as suggested.

2) Can the County please include any findings with regard to the watershed resource concerns of the residents of any surface water supplies?

Response: Watershed resource concerns are identified in the WIP, approved by MDE. These documents all went through the public comment period where residents could comment and voice concerns. Anne Arundel County does not rely on surface water supply; the County's 12 water treatment facilities draw from four deep aquifers.

3) Are there natural resources of high value within the watershed that the County will look to conserve (for example fisheries, beaches, shellfish, source water/irrigation water protection zones, soils or springs)?

Response: A review of the condition, resources, and features was included in each WIP, approved by MDE. Please refer to those documents for this information, which are provided as an Appendix with each annual TMDL progress report. Plan2040, Anne Arundel's General Development Plan, provides additional protections for Jabez Branch and other high quality natural resources through

mechanisms like the Resource Sensitive Policy Area Overlay (https://www.aacounty.org/planning-and-zoning/countywide-planning/plan2040).

4) In the future, please include planning goals of the water supply sources across the County that are impacted by stormwater.

Response: This is not a planning document, but a progress report on implementing the actions and goals from the WIPs intended to address particular TMDL pollutants. Anne Arundel County does not rely on surface water supply; the County's 12 water treatment facilities draw from four deep aquifers.

5) The County should provide an explanation for why their pollution control framework of choice to manage the SW-WLA is being used. For example, explaining explicitly how modeling data is used in conjunction with monitoring data to innovate.

Response: This is a progress document. Discussion of the approach taken is already included in the WIP, which documents existing data collected and how it factors into the implementation plan. Further discussion of and updates to the approach will be provided as the WIP for each TMDL is updated over the course of the fifth generation MS4 permit term.

The County contributes to the Pooled Monitoring Initiative, which looks at potential innovations based on the monitoring of projects to tie efficiencies to real-world data that supports future guidance. WLA guidance has clearly laid out currently acceptable parameters for addressing SW-WLA.

6) MDE encourages the County to view their approach to adaptive management in terms of geomorphic measurements they plan to make. And how subwatershed specific best management practice (BMP) implementation schedules will be supported by monitoring for minimum detectable changes; particularly for BMPs claiming relatively large reductions.

Response: There are already triennial inspections and regular monitoring that review the geomorphology and channel stability, etc., for our stream restoration projects. That monitoring is already required for various project-related permits. The County does not have the capacity or resources to implement a geomorphic monitoring plan in every watershed with a local TMDL and there is no requirement to do so. Please reference the research undertaken via the Pooled Monitoring Initiative Restoration Research grants where a subset of projects is intensively monitored for geomorphology.

Additionally, any signs of instability at a County restoration project would trigger repair or maintenance at the site and would be used as feedback/adaptive management triggers to improve our designs and inspection/monitoring processes.

7) Does the County know if other watershed plans exist in the stormwater footprint; either generated by a government, utility, or non-governmental entity? If so, MDE WPRPP recommends that this information be included in the plan.

Response: Other existing plans and restoration activities are already incorporated into our progress reporting through the inclusion of new BMPs and restoration implementation by these entities. Our NGO partners provide us with information on their efforts and those efforts are reflected in the TIPP and overall progress. This information is also captured through WIP updates, which incorporate other efforts in the watershed by SHA and NGOs.

8) "Progress" needs to be defined with greater specificity and depending on the context the term is being used. Furthermore, the County should be cautious not to lock itself into measuring improvements solely based on projected pollutant loads, and thereby limit the interpretation of progress in terms of water quality monitoring or resource quantity/quality/user experience.

Response: The TMDL SW-WLA is a quantitative wasteload allocation goal. Progress is appropriately defined as movement towards meeting that numeric goal. The County may meet certain TMDL SW-WLAs and see improvement in the targeted metric, but other issues may persist that are not related to the TMDL. The County cannot guarantee resource quality in cases where there are impacts occurring that have nothing to do with the particular impairments that the County is responsible for addressing. Additionally, the County is responsible for its assigned SW-WLA not achievement of the whole TMDL and so the resource quality is not solely a function of the County's TMDL SW-WLA progress.

9) Data should be succinctly presented, perhaps even as a checklist, so that it is understandable what information is being used for decision making during the implementation process. Documents and data layers being used in the decision-making process should be included as bullet points, so that they can be easily explained in terms of why they are relevant to decision making.

Response: This is a report on the previous year's progress towards TMDL SW-WLAs. The implementation process was laid out in the WIP, including the data used to support decision making. If further information is requested, those issues should be addressed during review and

approval of the WIP updates. In the case of PCBs, the data to be used in the decision-making process was laid out by MDE.

10) Please include proposed planning horizons/numeric management triggers and their underlying methodologies.

    a. Identify indicators and determine if they are currently meeting goals.

Response: This is not a planning document. The time horizon and numeric triggers are dictated by the TMDL (as noted in the progress report and implementation plans). Progress, or lack thereof, towards meeting the TMDL SW-WLA target is what will determine if we are meeting our goals or will act as a trigger to adapt our strategy to ensure we meet the TMDL SW-WLA.

    b. How will goals and progress toward goals be achieved; and endure alongside economic development and population growth?

Response: New development and re-development will be accompanied by the most up-to-date stormwater management. The County also maintains an inventory of planned projects that continues to push for restoration and resource improvement throughout the County even after modeling shows attainment of a TMDL SW-WLA, as shown in the case of the South River TMDL.

    c. Is the proposed planning horizon the point at which resource improvement is expected? Or is the planning horizon simply based on model accounting?

Response: The planning horizon is based on the modeled load reductions used in TMDL SW-WLA accounting. Watershed impairments are multi-faceted and the TMDL requires the County to address only a portion the pollutant in question. This progress report is only related to Anne Arundel's SW-WLA for each watershed. The TMDL is not a requirement to fix every issue within a watershed, some of which have no relation to the stormwater wasteload allocation. Resource improvement will naturally lag behind implementation of stormwater BMPs and restoration efforts as systems take time to recover. The County includes in its plans continued restoration efforts beyond those required to meet the TMDL SW-WLA through modeled load reductions.

    d. Please provide a framework, including response actions, if milestones for horizons are not met on time.

Response: Sections IX.E and IX.F of the progress report includes adaptive management triggers if there is insufficient progress towards a TMDL SW-WLA. The County will incorporate some additional language that includes evaluation of why we are behind (project delays, feasibility, availability of options, etc.) and evaluation of the project inventory to see if the future project pipeline will address the shortfall, and include a goal to identify additional restoration. The existing progress reports includes this, but the County will enhance this section.

MDE Watershed Protection, Restoration, and Planning Program (WPRPP) Comments on Anne Arundel County's Countywide Bacteria TMDL Stormwater Implementation Plan *(8.19.2024)*

1) Anne Arundel County has a very robust bacteria implementation plan with programmatic and structural implementation followed by monitoring to assess the effectiveness of the actions.

Response: No response required.

2) Very well-structured progress report, discussing the existing bacteria TMDLs, the restoration strategies to achieve bacteria TMDL compliance, the documentation and mapping of completed and planned implementation, as well as how monitoring data is being used to assess bacteria trends and attempt to identify sources of bacteria pollution.

Response: No response required.

3) The Department looks forward to seeing the next phases of the trend monitoring where source tracking studies will take place, as well as the progress that could result from other programs such as pet waste outreach (with a planned pilot monitoring study) and Canada goose management. We are interested to learn more about the pet waste outreach campaign monitoring efforts.

Response: For the current permit term, the County has opted to participate in the Pooled Monitoring Initiative's research related to bacteria in lieu of bacteria trend monitoring.

The pet waste behavior pilot monitoring study that was initiated in two communities yielded limited results, and thus the County decided not to proceed further with this program. In 2023 a countywide survey of environmental stewardship indicators, to include behavior concerning pet waste disposal, was funded by the County. Information from this survey has been useful in tailoring the County's pet waste outreach efforts, as the County has shifted towards providing

resources and support available to communities that request assistance instead as opposed to implementing County-led initiatives in communities.

4) Has the monitoring of two residential communities associated with the pilot pet waste outreach campaign started before the beginning of the outreach campaign to collect baseline data? If not, how is the County planning to assess the success of the initiative?

Response: Please see the response to Comment #3.

5) Section IX.C.2.c. Hotspot Monitoring mentions "sites presenting high bacteria sampling results are considered potential hotspots and worthy of further investigation." Did the County establish a threshold or target value that would trigger further investigations? What could be characterized as "high bacteria sampling results"?

Response: Initially, a "hotspot" was considered any site above the single sample criterion for bathing beaches (104 MPN/100mL). As trend monitoring progressed and showed the majority of samples exceeding this criterion, the definition of "hotspot" expanded to include any site that appeared to have significantly higher bacteria counts relative to other nearby sites during the same sampling event.

a. The section also mentions IDDE monitoring but does not get into further detail about that specific monitoring program. Is the IDDE monitoring the same as the IDDE program mentioned in section VII.A.1.a., where the County evaluates a number of outfalls for illicit discharges every year?

Response: Yes, the reference was to the County's IDDE Program mentioned in Section VII.A.1.a. The County inspects a minimum of 150 outfalls per year as part of this program.

MDE Watershed Protection, Restoration, and Planning Program (WPRPP) Comments on Anne Arundel County's Countywide Bacteria TMDL Stormwater Implementation Plan Trend Years 1-3 Comprehensive Monitoring Report (FINAL) and Bacteria TMDL Implementation Plan Update *(8.19.2024)*

1) Considering the distribution of enterococci data, a transformation of the data (log10) could be necessary before estimating the Pearson Correlation Coefficient, which assumes

the data is normally distributed. Also, given the seasonal pattern of the data, as mentioned in the study conclusions, a seasonal trend analysis, such as the seasonal Kendall test, could provide additional insight into the results since the trends are assessed in each season separately.

Response: The County will take this into account for the future.

2) The additional implementation strategies incorporated into the 2017 Bacteria Implementation Plan add significant value to the County's strategy and tackle sources of fecal indicator bacteria pollution not previously considered. This demonstrates the County's initiative in learning from past implementation and land use and monitoring data to adaptively manage their strategies.

Response: No response required.

3) Adaptive management flowchart: how does the County assess if they are or not meeting the bacteria SW-WLA to move down the decision tree? Is that assessment based on results of the monitoring described in 'Management Actions - Path Forward' and that is how progress will be determined?

Response: Yes, progress will be determined based on results of the monitoring described in the Management Actions Path Forward section of the 2023 Bacteria TMDL Plan Update and any future bacteria monitoring that the County undertakes. Given the ubiquitous nature of bacteria loads, their ephemeral nature and the challenge of identifying sources of bacteria when no obvious source is known, the County will assess progress based on monitoring results and any trends that may be discerned from those results. For the current permit term, the County has opted to participate in the Pooled Monitoring Initiative for bacteria in lieu of bacteria monitoring.

4) Appendix A table, Failing Septic Systems: Given the number of retirement/conversion of septic systems completed since 2017, is it feasible to expect a total of 400 by 2025? Should either the number of systems or target year be revisited?

Response: The County believes that the number of septic retirements/conversions to be completed by 2025 is likely to fall short of the target of 400. The County averaged 30 septic retirements/conversions per year between: fiscal years 2017 and 2024, a pace that would result in 270 total conversions through FY25. Revisiting this goal in the next update to the Bacteria TMDL Implementation Plan (next MS4 permit term) would be warranted.