Financial Assurance Plans and the Watershed Protection and Restoration Program

Maryland Department of the Environment

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Prepared for:
The Governor of Maryland
President of the Senate
Speaker of the House
Senate Education, Health, and Environmental Affairs Committee
House Environmental Matters Committee
Reporting Period Fiscal Year 2024




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Executive Summary

Section 4-202.1(j)(7) of the Environment Article, *Annotated Code of Maryland* requires that the Maryland Department of Environment (Department) provide an annual report to the Governor and General Assembly evaluating compliance with local watershed restoration program requirements. Specifically, the Environment Article requires each National Pollutant Discharge Elimination System (NPDES) Phase I municipal separate storm sewer system (MS4) permitted jurisdiction to submit fiscal reporting information. Jurisdictions subject to these requirements include, Baltimore City and Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's counties. Accordingly, the Department received Financial Assurance Plans (FAP) and Watershed Protection and Restoration Program (WPRP) reports from each jurisdiction.

This annual report fulfills the Department's requirement under § 4-202.1(j)(7), Environment Article, *Annotated Code of Maryland*. A summary of data on completed and proposed restoration projects, available funding, and costs toward implementing local Impervious Surface Restoration Plans (ISRP) is provided herein. Successful implementation of these plans as well as ongoing maintenance operations are an integral component of Maryland's strategy to restore local waterways and Chesapeake Bay.

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Key Findings

The Department's evaluation included the following:

- Each jurisdiction showed sufficient funding to cover ISRP costs for the next two state fiscal years (FY25 and FY26), as required under the Environment Article.

- Restoration Accomplishments:
  - Completed 10,860 acres of restoration under the current permit, costing $319 million.
  - Proposed 9,037 acres of restoration in the next two years, costing $414 million.
  - Total restoration completed to date for previous and current permits is 46,782 acres.
  - Planning to implement an additional 21,166 acres of restoration by the end of their respective permit terms at an aggregated cost of $957 million.

- Ongoing challenges for program success include increasing maintenance costs, rising debt service payments toward past implementation, and uncertainty toward future grant funding.

- Revenue projections in the next two years to meet all MS4 permit requirements are approximately $1.1 billion. Funding sources include:
  - $437 million in bonds and loans
  - $314 million in general funds and other sources
  - $276 million in stormwater remediation fees
  - $27 million in state grants
  - $10 million in federal grants

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I. Introduction

Maryland's stormwater management (SWM) program under § 4-202.1, Environment Article, *Annotated Code of Maryland* requires fiscal reporting by each National Pollutant Discharge Elimination System (NPDES) Phase I municipal separate storm sewer system (MS4) permitted jurisdiction. Baltimore City and Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's counties are subject to these requirements as defined in the Environment Article. Reporting requirements include a Financial Assurance Plan **(**FAP**)** and a Watershed Protection and Restoration Program (WPRP) Annual Report.

The FAPs demonstrate how stormwater restoration projects are going to be funded and must be submitted every 2 years. The plans must include the following: all actions required to meet MS4 permit requirements; annual and projected 5-year costs and revenues necessary to meet the impervious surface restoration plan **(**ISRP**)** requirements; any and all sources of funds used toward meeting MS4 permit requirements; and all specific actions and expenditures undertaken in the previous fiscal years to meet the ISRP requirement.

The most recent FAPs submitted on the anniversary date of each jurisdiction's MS4 permit, were required to demonstrate sufficient funding for meeting 100% of the projected ISRP costs for the 2-year period immediately following the filing of the plan. Local governing bodies were required to hold public hearings and sign the plans for accuracy prior to submitting them to the Maryland Department of the Environment (MDE or the Department) for review.

The requirement to submit a Watershed Protection and Restoration Program **(**WPRP**)** Annual Report applies to each NPDES MS4 permitted jurisdiction, excluding Montgomery County, and the reports must include the following items:

- The number of properties, if any, subject to a stormwater remediation fee;
- Any funding structure developed, including the amount of money collected;
- The amount of money deposited into the Watershed Protection and Restoration Fund (WPRF) in the previous fiscal year by source;
- The percentage and amount of funds in the WPRF spent on purposes defined in the law; and
- All SWM projects implemented in the previous fiscal year for the ISRP requirement.

The law requires the Department to post FAPs on its website within 14 days of receipt; make a decision regarding the adequacy of these plans within 90 days of receipt; and submit an annual evaluation of these plans to the Governor and the General Assembly by September 1 each year. This Annual Report on FAPs and the WPRP fulfills the requirement of § 4-202.1(j)(7), Environment Article, *Annotated Code of Maryland*. The Department's summary and evaluation are included below. The citizens of Maryland, and local, state, and federal partners are commended for their efforts in developing and implementing these very important environmental programs for improving local water resources and restoring the Chesapeake Bay.

II. FAP Evaluations

Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's counties, and Baltimore City submitted comprehensive information on the implementation of best management practices (BMPs) for meeting ISRP requirements and helping Maryland reach its Chesapeake Bay total maximum daily load (TMDL) pollution reduction requirements, including:

- Upland Practices: wet ponds, swales, infiltration, dry wells, rain gardens, green roofs, permeable pavement, rainwater harvesting, submerged gravel wetlands;
- In-Stream Practices: shoreline management, outfall stabilization, stream restoration; and
- Programmatic Practices: street sweeping, inlet cleaning, storm drain vacuuming.

This evaluation of the FAPs consists of budget and restoration information that have been provided by each MS4 Phase I permitted jurisdiction. Each locality has held public hearings and each plan has been signed by the local governing body with the exception of Baltimore City (See Table 1). The City's plan is currently pending approval.

Table 1: Significant Dates for FAPs and WPRP Annual Reports

MS4	FAP Submission Date	WPRP Annual Report Submission Date	Date of Public Hearing	FAP Approved by Local Governing Body (Y/N)
Anne Arundel	12/31/2024	12/31/2024	11/4/2024	Y
Baltimore City	2/18/2025	4/25/2025	12/5/2024	N
Baltimore	12/19/2024	12/19/2024	12/10/2024	Y
Montgomery	12/20/2024	n/a	3/11/2025	Y
Prince George's	12/17/2024	12/17/2024	2/25/2025	Y
Carroll	12/19/2024	12/19/2024	12/5/2024	Y
Charles	12/23/2024	12/23/2024	11/19/2024	Y
Frederick	12/26/2024	12/26/2024	12/17/2024	Y
Harford	12/20/2024	12/20/2024	1/7/2025	Y
Howard	12/20/2024	12/20/2024	3/17/2025	Y

Past Implementation

The Department approved each MS4's impervious acre baseline analysis during the previous permit term, which determined the number of acres of untreated impervious area within the jurisdiction and thereby set the amount of restoration required under the previous stormwater permits (equal to 20% of the baseline), also known as the ISRP requirement. Overall, the MS4s completed 35,922 acres of restoration or 103% of the ISRP requirement to meet the combined requirements of their previous permits (see Table 2).

Prince George's County did not meet the 20% ISRP requirement by the end of its 5-year permit term on January 2, 2019. The County restored 2,387 impervious acres resulting in a restoration deficit of 3,718 impervious acres. Subsequently, on December 6, 2021, the Department and Prince George's County entered into a court-sanctioned Consent Decree resolving issues with the County's performance pursuant to the MS4 permit. The consent decree formally established implementation schedules and annual milestones for the completion of the County's remaining ISRP requirement by December 31, 2024. Additionally, the Consent Decree imposed a $475,000 penalty, due on December 31, 2024, for failure to complete all of the restoration work required by the 2014 permit. The penalty could be satisfied through the construction of one or more Department-approved supplemental environmental projects (SEPs) at a minimum cost of $475,000 by December 31, 2024. The SEPs completed as a result of this penalty do not count toward the County's ISRP requirement. On December 24, 2024, the County submitted documentation verifying that all of the violation items in the Consent Decree were addressed and all ISRP obligations have been met and this progress is noted in Table 2.

Table 2: Completed Projects to Meet the Previous ISRP 5-Year Permit Term Requirements

MS4	Impervious Acre (IA) Baseline[1]	ISRP Requirement (Acres)[1]	Restoration Completed[2]	
Anne Arundel	24,980	4,996	4,996	100%
Baltimore City	21,455	4,291	4,530	106%
Baltimore	30,180	6,036	6,064	100%
Montgomery	18,891	3,778	3,779	100%
Prince George's	30,525	6,105	6,105	100%
Carroll	8,070	1,614	1,629	101%
Charles	7,887	1,577	1,739	110%
Frederick	9,903	1,981	1,981	100%
Harford	10,928	2,186	2,186	100%
Howard	11,019	2,204	2,913	132%
Total	173,838	34,768	35,922	103%

1. ISRP requirements, impervious acre baselines, and restoration completed from FY19 MS4 Annual Reports and data submitted for final permit restoration accounting. ISRP Requirement = impervious acre baseline * 20% MS4 permit restoration requirement.
2. Percentage figure is percent of ISRP requirement completed.

Current Implementation

MS4 permits issued to large and medium jurisdictions in November 2021 and December 2022 established new ISRP requirements. The permits build upon and improve pollution reductions achieved under the previous permits and require local jurisdictions to do more to meet Chesapeake Bay TMDL requirements. As of FY24, these **MS4s have achieved approximately 10,860 acres of restoration** for a total cost of $318.7 million (see Table 3). This is equivalent to 57% of the total ISRP requirement for the recently issued permits.

Table 3: Specific Actions Completed Through FY24 to Meet New ISRP Requirements

MS4	ISRP Requirement[1]	Restoration Completed[2]	
Anne Arundel	2,998	2,232	74%
Baltimore City	3,696	1,453	39%
Baltimore	2,696	2,060	76%
Montgomery	1,814	1,190	66%
Prince George's	2,137	427[3]	20%
Carroll	1,217	1,081	89%
Charles	1,083	815	75%
Frederick	1,027	295	29%
Harford	1,093	0[4]	0%
Howard	1,345	1,307	97%
Totals:	19,106	10,860	57%

1. ISRP Requirement from reissued permits. More information may be found at https://mde.maryland.gov/programs/water/StormwaterManagementProgram/pages/storm_gen_permit.aspx.
2. Restoration data are from FY24 MS4 Annual Reports (covering the end of the previous permit term up to June 30, 2024). The figure shown is the percent of ISRP requirement completed.
3. Prince George's County completed obligations under the Consent Decree and additional progress toward the current permit has begun.
4. Harford County has completed 770 acres of restoration since the previous permit expired, but those restored acres are being credited toward replacing the 1,215 impervious acres of nutrient credits that were obtained to meet the previous permit's ISRP requirement. The County is required to replace the 1,215 acres and implement an additional 1,093 acres of new restoration by the end of the permit term.

Cumulative Actions Completed

The specific actions implemented by these Phase I MS4s for meeting ISRP requirements for the previous and current permit as of FY24 resulted in completion of **46,782 acres of restoration** (see Table 4). MS4s that implemented programmatic BMPs in the previous permit term are required to continue maintaining those BMPs or replace the ISRP credits that were achieved through programmatic BMPs. This requirement in addition to inspecting and maintaining other BMPs continues to increase maintenance and debt services costs over time.

Table 4: Cumulative Actions Completed as of FY24

MS4	Impervious Acre (IA) Baseline[1]	Restoration Completed[2]	
Anne Arundel	24,980	7,228	29%
Baltimore City	21,455	5,983	28%
Baltimore	30,180	8,124	27%
Montgomery	18,891	4,969	26%
Prince George's	30,525	6,532	21%
Carroll	8,070	2,710	34%
Charles	7,887	2,554	32%
Frederick	9,903	2,276	23%
Harford	10,928	2,186	20%
Howard	11,019	4,220	38%
Total	173,838	46,782	27%

1. Impervious acre baselines from FY19 MS4 Annual Reports.
2. Restoration completed data are from FY24 MS4 Annual Reports. Figures represent the total current permit term (Table 3) plus the total from previous permit term (Table 2). Percentage is portion of IA Baseline restored.

This amount of restoration is equivalent to:

Photo: MDE

73

square miles of restored impervious surfaces

Photo: "Baltimore City Right After Sunset" by Patrick Gillespie is licensed under CC BY 2.0.

90%

of Baltimore City's total land area
(not including areas with water)

Future Implementation and Funding

For future implementation, the MS4s reported that an additional 9,037 acres of restoration are projected to be completed in FY25 and FY26 (see Table 5). The total 2-year cost reported equals $414.2 million. This data is limited to the cost for installing new BMPs and does not include additional costs associated with debt service payments, BMP maintenance, or monitoring.

Table 5: Projected ISRP Implementation for FY25 and FY26 to Meet ISRP Requirements[1]

MS4	Projected Restoration to be Completed[2]	Projected Cost[1]
Anne Arundel	1,316	$67,965,265
Baltimore City	2,632	25,058,406
Baltimore	1,456	68,433,185
Montgomery	566	62,396,977
Prince George's	1,709	85,301,001
Carroll	235	13,740,200
Charles	203	8,556,983
Frederick	396	20,461,398
Harford[3]	327	11,095,000
Howard	197	51,222,592
Total	9,037	$414,231,007

1. The completed restoration during these time periods will be included in the next FAPs, to be submitted in December 2026.
2. Acres to be Completed during FY25 and FY26, and Cost from All Actions worksheet in FY24 FAPs. The percentage shown is the percent of impervious acre baseline restored.
3. This figure includes continued obligations (replacing nutrient credits) from the previous permit.

Each jurisdiction is required to demonstrate that there is sufficient funding to meet ISRP requirements under their current permit. On May 1, 2025, the Department determined that all MS4s showed they had the revenues necessary to fund 100% of the estimated costs of the ISRP requirements in their MS4 permits for FY25 and FY26 as shown in Table 6 below.

Table 6: Projected Cost of Compliance versus Revenue

MS4	Projected Cost[1] (millions)	Projected Revenue[1] (millions)	Percent of Cost Covered	Meets 100% Requirement (Y/N)
Anne Arundel	$162.0M	$167.9M	104%	Y
Baltimore City	99.1M	99.1M	100%	Y
Baltimore	76.6M	76.6M	100%	Y
Montgomery	114.8M	114.8M	100%	Y
Prince George's	204.3M	230.6M	113%	Y
Carroll[2]	21.8M	19.2M	88%[2]	Y
Charles	12.9M	31.1M	242%	Y
Frederick	23.6M	23.6M	100%	Y
Harford	37.3M	37.3M	100%	Y
Howard	35.0M	35.8M	102%	Y
Total	$787,239,751	$835,935,088		

1. Cost and Revenue data are from ISRP Revenue worksheet in FY24 FAPs.
2. Carroll County's FAP indicated the ISRP revenue and cost did "not account for rollover from one year to the next". The County reported $70.5M in rolling revenue vs $58.8 M in rolling cost, thus showing 100% funding.

Funding Sources for MS4 Permit

Another FAP reporting requirement is documenting the sources of funds for meeting MS4 permit requirements. For the next two years (FY25 and FY26), the 10 MS4 jurisdictions **projected $1.1 billion of funding** that will be used to meet MS4 permit requirements. A majority of the MS4 funding is achieved through bonds and loans (see Figure 1 and Table 6). Other funding sources identified across the FAPs include stormwater remediation fees, tax revenue, general funds, and state and federal grants. In total, they project:

- $437.4 million in bonds and loans
- $313.6 million in general funds and other sources
- $275.7 million in stormwater remediation fees
- $26.9 million in state grants
- $9.7 million in federal grants

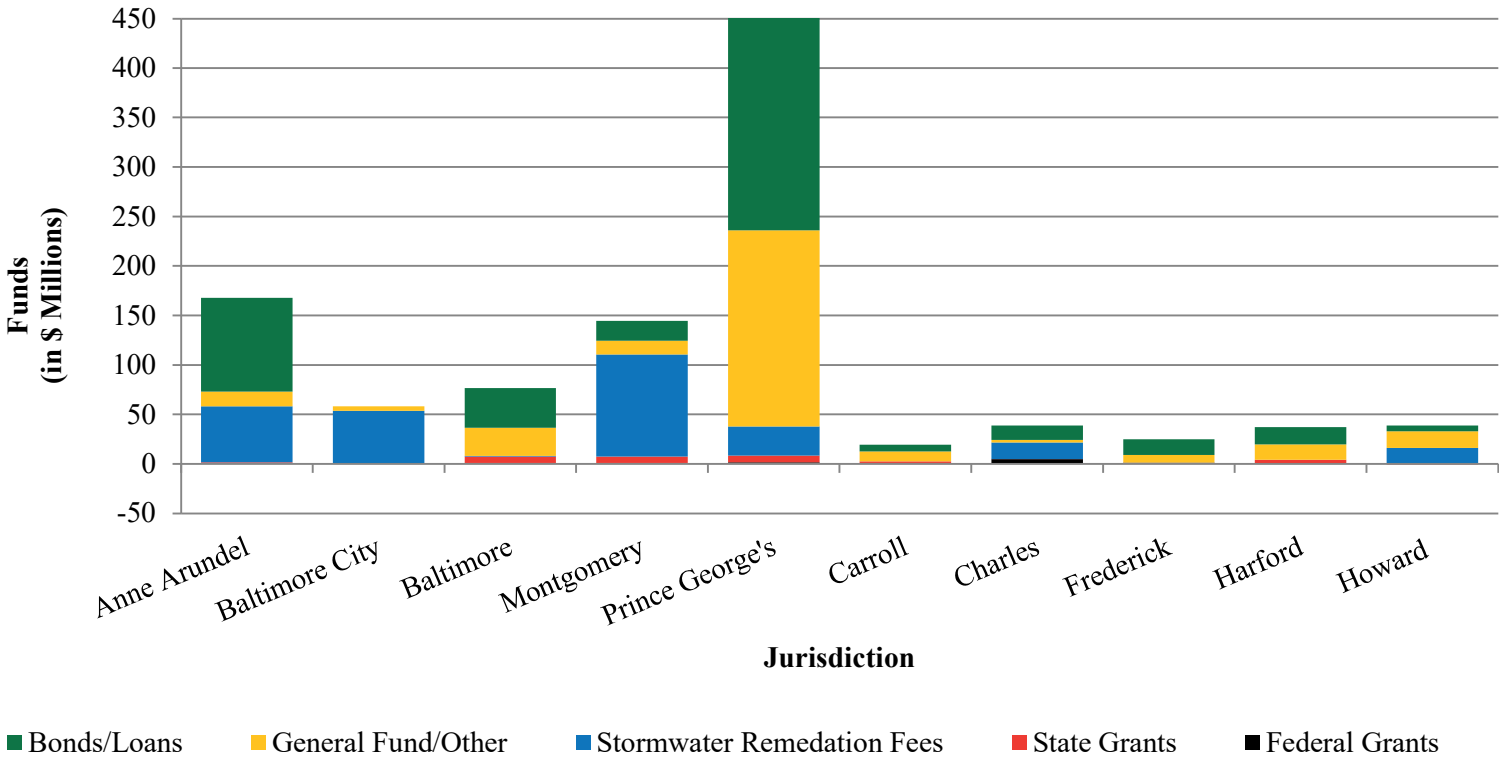

Figure 1: Projected FY25-26 Funding Sources Used to Meet MS4 Permit Requirements

Table 7: Projected FY25-26 Funding Sources Used to Meet MS4 Permit Requirements[1]

	Anne Arundel	Baltimore City	Baltimore	Mont-gomery	Prince George's	Carroll	Charles	Frederick	Harford	Howard[2]
Bonds/Loans	$95	$0	$40	$20	$222	$7	$15	$16	$18	$6
General Fund/Other	15	4	29	14	198	10	3	8	16	17
Stormwater Remediation Fees	56	54	1	103	29	0	17	0.001	0	16
State Grants	2	0.005	7	7	7	1.6	0.1	0.3	4	-1
Federal Grants	0	0	1	1	2	1	5	1	0	0
	$166	$58	$77	$145	$458	$19	$39	$25	$37	$38

1. Dollar amounts are in millions. Funding sources for only the Watershed Protection and Restoration Fund are found in Table 9.
2. Howard County reported -0.8 million in state grants.

The MS4s **project to complete 21,166 acres of restoration** for a total cost of **$956.8 million** to fulfill the ISRP requirements for permit terms that end in November 2026 and December 2027 (see Table 8).

Table 8: Projected Permit Term Restoration to Meet ISRP Requirements[1]

MS4	ISRP Requirement[2]	Projected Restoration to be Completed[1, 2]		Projected Cost[1]
Anne Arundel	2,998	3,989	133%	163,706,645
Baltimore City	3,696	3,050	83%	88,334,014
Baltimore	2,696	3,481	129%	142,079,012
Montgomery	1,814	1,992	110%	170,826,708
Prince George's	2,137	2,137	100%	100,768,575
Carroll	1,217	1,494	123%	45,386,665
Charles	1,083	1,275	118%	39,870,613
Frederick	1,027	1,160	113%	50,644,546
Harford[3]	1,093	1,117	102%	41,535,000
Howard	1,345	1,471	109%	113,656,814
Total	19,106	21,166	111%	$956,808,592

1. The FY24 FAPs included projections for total permit term restoration Acres to be Completed up to FY27 or FY28, and Cost from All Actions worksheet. Updated amounts of completed restoration for the permit term will be included in the next FAPs, to be submitted in December 2026.
2. The percentage shown is the percent of ISRP requirement completed.
3. Harford County reported continued obligations from the previous permit.

Electronic copies of the WPRP Annual Reports, FAPs, and the Department's reviews may be viewed on the Department's website at: mde.maryland.gov/programs/Water/StormwaterManagementProgram/Pages/WPRPFinancialAssurancePlans.aspx

III. Watershed Protection and Restoration Program Annual Reports

As indicated above, the Watershed Protection and Restoration Program (WPRP) Annual Reports are required for all Phase I MS4s except Montgomery County. Additionally, stormwater remediation fees are optional for MS4 jurisdictions. In FY24, seven MS4 jurisdictions had a fee (Baltimore City, and Anne Arundel, Charles, Frederick, Howard, Montgomery, and Prince George's Counties). Two MS4s obtained additional funds through taxes (see footnote 7 below in Table 8), and one repealed its fee (see footnote 4 below). Residential fees ranged from $0.01 to $197. For the jurisdictions that had a fee (excluding Anne Arundel and Montgomery counties), the number of properties subjected to a fee ranged from 51,441 to 276,611.

Table 9: FY24 Sources of Funds for the WPRF[1]

Jurisdiction	Properties Subject to a Stormwater Remediation Fee	% Change[2]	Total Stormwater Remediation Fees	% Change[2]	Total Additional Sources of Funds	% Change[2]	Total	% Change[2]
Anne Arundel[3]	0		$24,243,050	5%	$3,241,690	3%	$27,484,740	5%
Baltimore City	219,335	-0.01%	$42,265,161	-1%	$13,465,080	11652%	55,730,241	30%
Baltimore[4]	0		$0		$30,220,920	33%	30,220,920	33%
Montgomery[5]	n/a		n/a		n/a		n/a	
Prince George's[6]	276,611	2%	$0		$137,613,334	77%	137,613,334	77%
Carroll[7]	0	0%	$0	0%	$3,816,246	0%	3,816,246	0%
Charles	51,441	0%	$7,599,372	0%	$16,538	322%	7,615,910	0%
Frederick	57,952	0%	$580	0%	$0	0%	580	0%
Harford[7]	0	0%	$0	0%	$10,200,000	4%	10,200,000	4%
Howard	100,458	1%	$10,475,637	1%	$0	0%	10,475,637	1%
Total	705,797	1%	$84,583,799	1%	$198,573,808	70%	$283,157,607	41%

1. For further details on the WPRP, refer to the WPRP Annual Reports on the Department's website at mde.maryland.gov/programs/water/StormwaterManagementProgram/Pages/WPRPFinancialAssurancePlans.aspx.
2. Percent change from the previous FY.
3. Anne Arundel County did not report the number of properties subject to a stormwater remediation fee.
4. Baltimore County's stormwater remediation fee was repealed effective July 1, 2017.
5. Montgomery County was not required to report this information.
6. Prince George's County received funds from stormwater remediation fees in FY24. The County reported $14.7 million from the local watershed protection and restoration fund, as well as $59.5 million from the stormwater management enterprise fund.
7. Carroll and Harford counties obtain funds through a dedicated property tax or recordation tax, respectively.

Table 10: FY24 Percentage and Amount of Funds Spent on Specific Purposes[1]

Jurisdiction	Capital Improvements for SWM	Operations & Maintenance of SWM Systems and Facilities	Public Education and Outreach[2]	SWM Planning[3]	Review of SWM Plans and Permit Application[4]	Grants to Nonprofit Organizations[5]	Administration of WPRF[6]	Total
Anne Arundel	$15,223,874	$8,026,302	$775,476	$3,182,135	$0.00	$92,336	$819,975	$28,120,098
Baltimore City	9,952,980	15,315,444	353,472	1,477,553	1,824,795	228,926	2,419,096	31,572,266
Baltimore	18,809,213	2,068,464	286,234	748,882	0	271,376	0	22,184,168
Montgomery[7]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Prince George's	53,657,306	23,205,867	470,370	3,756,830	17,453,900	2,215,946	479,111	101,239,330
Carroll	559,802	147,167	3,109	40,362	0	0	1,419,207	2,169,646
Charles	2,425,444	2,035,107	82,535	2,217,078	0	64,957	157,300	6,982,421
Frederick[8]	0	0	0	0	0	0	0	0
Harford	$6,220,000	$1,130,000	$40,000	$20,000	0	0	0	7,410,000
Howard[9]	12,391,630	2,055,802	370,843	0	0	1,234,681	3,703,967	39,242,502
Total	$119,240,248	$53,984,153	$2,382,038	$11,442,841	$19,278,695	$4,108,222	$5,665,086	$238,920,431

1. Md. Environment Code Ann. § 4-202.1.(i)(4) states "The percentage and amount of funds in the local watershed protection and restoration fund spent on each of the purposes provided in subsection (h)(4) of this section." Descriptions for some of these purposes are listed in footnotes 1 to 5 below.
2. "Public education and outreach relating to stormwater management or stream and wetland restoration".
3. "Stormwater management planning, including: 1. Mapping and assessment of impervious surfaces; and 2. Monitoring, inspection, and enforcement activities to carry out the purposes of the watershed protection and restoration fund".
4. "To the extent that fees imposed under § 4-204 of this subtitle are deposited into the local watershed protection and restoration fund, review of stormwater management plans and permit applications for new development".
5. "Grants to nonprofit organizations for up to 100% of a project's costs for watershed restoration and rehabilitation projects relating to: 1. Planning, design, and construction of stormwater management practices; 2. Stream and wetland restoration; and 3. Public education and outreach related to stormwater management or stream and wetland restoration".
6. "Reasonable costs necessary to administer the local watershed protection and restoration fund".
7. Montgomery County was not required to report this information.
8. Frederick County reported sources of funds for the WPRF, but did not report the specific amounts spent on capital improvements, operations and maintenance, public education and outreach, etc.
9. Howard County's total spent included an additional $23M in funds not spent on one of the purposes specified in subsection (h)(4). The reported $23M was a fund balance.

IV. Summary

Maryland's MS4 permits and ISRP requirements are an integral part of the state's strategy to ensure that stormwater pollution control measures are implemented to restore local waterways and the Chesapeake Bay. Maryland's Phase I MS4 jurisdictions have been tasked with reducing their stormwater pollutant loads even as their communities continue to grow and costs increase.

Each jurisdiction continues to implement restoration practices and, in aggregate, have achieved approximately 57% of the total ISRP requirement under current permits. In total, they have restored 46,782 acres across both permit terms, and project completing an additional 21,166 by the end of the current permits for a total cost of $956.8 million. Maintaining existing BMPs as well as increased restoration will not only increase maintenance cost but will also increase demand for debt services or other funding sources.

For the next two years (FY25 and FY26), there is a projected $1.1 billion of funding that are allocated to meet further MS4 permit requirements. The FAPs showed this work is primarily funded through bonds and loans, with other funding sources including stormwater remediation fees, tax revenue, general funds, and state and federal grants.

In the FY24 FAPs, all MS4s showed that they have the budgets necessary to fund at least 100% of the ISRP requirements over the next two state fiscal years (FY25 and FY26). The next FAP submittals, with data through FY31, must show how each jurisdiction can fund 100% of its ISRP requirement for the next two years while also documenting increased BMP implementation and funding.

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Photo: MDE

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V. Appendices

Appendix A: Abbreviations and Classifications of BMPs

Table A- 1: BMP Classes

Code	Code Description
A	Alternative BMP
E	ESD BMP
S	Structural BMP

Table A- 2: Alternative BMPs

Code	Code Description	Category
CBC	Catch Basin Cleaning	Programmatic
CLTM	Conservation Landscaping	Upland
DGI	Elimination of Discovered Nutrient Discharges from Grey Infrastructure	Programmatic
FCO	Forest Conservation	Upland
FTW	Floating Treatment Wetlands	Upland
FPU	Forestation on Pervious Urban (i.e., Forest Planting)	Upland
IMPF	Impervious Surface to Forest (i.e., IMPP + FPU)	Upland
IMPP	Impervious Surface Reduction (i.e., impervious to pervious)	Upland
MSS	Mechanical Street Sweeping	Programmatic
OUT	Outfall Stabilization	In-Stream
RCL	Riparian Conservation Landscaping	Upland
RFP	Riparian Forest Planting	Upland
SDV	Storm Drain Vacuuming (i.e., Storm Drain Cleaning)	Programmatic
SEPC	Septic Connections to Wastewater Treatment Plant (WWTP)	Upland
SEPD	Septic Denitrification	Upland
SEPP	Septic Pumping	Programmatic
SHST	Shoreline Stabilization	In-Stream
SPSD	Dry Channel Regenerative Step Pool Stormwater Conveyance System	In-Stream
STRE	Stream Restoration	In-Stream
STCI	Street Trees	Upland
USRP	Urban Soil Restoration (Compacted Pervious Surfaces)	Upland
USRI	Urban Soil Restoration (Removed Impervious Surfaces)	Upland
UTC	Urban Tree Canopy (i.e., Pervious Turf to Tree Canopy over Turf)	Upland
VSS	Regenerative/Vacuum Street Sweeping (i.e., Advanced Street Sweeping)	Programmatic

Table A- 3: Environmental Site Design (ESD) BMPs

Code	Code Description	Category
	Alternative Surfaces	
AGRE	Green Roof – Extensive	Upland
AGRI	Green Roof – Intensive	Upland
APRP	Permeable Pavements	Upland
ARTF	Reinforced Turf	Upland
	Micro-Scale Practices	
MENF	Enhanced Filters	Upland
MIBR	Infiltration Berms	Upland
MIDW	Dry Well	Upland
MILS	Landscape infiltration	Upland
MMBR	Micro-Bioretention	Upland
MRNG	Rain Gardens	Upland
MRWH	Rainwater Harvesting	Upland
MSGW	Submerged Gravel Wetlands	Upland
MSWB	Bioswale	Upland
MSWG	Grass Swale	Upland
MSWW	Wet Swale	Upland
	Nonstructural Techniques	
NDNR	Disconnection of Non-Rooftop Runoff	Upland
NDRR	Disconnection of Rooftop Runoff	Upland
NSCA	Sheetflow to Conservation Areas	Upland

Table A- 4: Structural BMPs

Code	Code Description	Category
	Filtering Systems	
FBIO	Bioretention	Upland
FORG	Organic Filter	Upland
FPER	Perimeter Filter	Upland
FSND	Surface Sand Filter	Upland
FUND	Underground Filter	Upland
	Infiltration	
IBAS	Infiltration Basin	Upland
ITRN	Infiltration Trench	Upland
	Open Channels	
ODSW	Dry Swale	Upland
OWSW	Wet Swale	Upland
	Ponds	
PMED	Micro-Pool Extended Detention Pond	Upland
PMPS	Multiple Pond	Upland
PPKT	Pocket Pond	Upland
PWED	Wet Extended Detention Pond	Upland
PWET	Wet Pond	Upland
	Wetlands	
WEDW	Extended Detention – Shallow Wetland	Upland
WPKT	Pocket Wetland	Upland
WPWS	Pond Wetland System	Upland
WSHW	Shallow Marsh	Upland
	Other Practices	
XDED	Extended Detention Structure, Dry	Upland
XDPD	Detention Structure (Dry Pond)	Upland
XFLD	Flood Management Area	Upland
XOGS	Oil Grit separator	Upland
OTH	Other	Upland

Appendix B: Calculations

Table 2

Percent restoration completed was determined by dividing the total acres restored (gathered from FY19 MS4 Annual Reports and data submitted for final permit restoration accounting) by the total ISRP Requirement from the previous permit.

Tables 3 and 8

Percent restoration completed was determined by dividing the total acres of restoration (gathered from FY24 MS4 Annual Reports) by the ISRP requirement.

Page 5 Restoration Comparisons

Square Miles: 1 square mile = 640 acres. Therefore, total acreage was divided by 640.

Baltimore City's total land area: The United States Census Bureau indicates that Baltimore City's total land area (excluding areas of water) is 80.95 square miles. https://data.census.gov/profile/Baltimore_city,_Maryland?g=050XX00US24510 Total square miles was divided by 80.95.

Table 4

Cumulative percent restoration completed was determined by dividing the total acres of restoration from both permit terms by the total impervious acre baseline.

Table 6

Fulfillment of 100% Revenue Requirement for 2-Year Costs was determined by dividing 2-Year Revenue by 2-Year Costs.

Table 9

Percent change from previous FY was determined by dividing FY24 household or dollar amount by FY23 household or dollar amount and then subtracting by 1 (i.e., (FY24 Amount/FY23 Amount) – 1).