COUNTY COMMISSIONERS OF CHARLES COUNTY, MARYLAND
RESOLUTION NO. 2020-31

A RESOLUTION providing for the approval of the Watershed Protection and Restoration Program Financial Assurance Plan, a copy of which is attached hereto.

WHEREAS, Charles County has been issued a national pollutant discharge elimination system Phase I municipal separate storm sewer system permit ("Permit") for discharges from its storm drain outfalls; and

WHEREAS, the Fiscal Year 2021 Charles County Budget was adopted on May 19, 2020, by the County Commissioners of Charles County, Maryland; and

WHEREAS, the Annotated Code of Maryland, Environment Article, §4-202.1(j)(1) requires that on or before July 1, 2016, and every 2 years thereafter on the anniversary date of the issuance of its Permit, a county must file a Financial Assurance Plan describing projected actions, and sources of revenue to meet permit requirements; and

WHEREAS, the Annotated Code of Maryland, Environment Article, §4-202.1(j)(3) provides that the Financial Assurance Plan may not be filed until the local governing body of the county has held a public hearing and approved the Financial Assurance Plan.

NOW, THEREFORE, upon motion made, duly seconded, and carried, it is this 1st day of December 2020, RESOLVED, that the Financial Assurance Plan is hereby approved and shall be submitted to the Maryland Department of the Environment for its review.

COUNTY COMMISSIONERS OF
CHARLES COUNTY, MARYLAND

Reuben B. Collins, II, Esq., President

Bobby Rucci, Vice President

Gilbert O. Bowling, III

Thomasina O. Coates, M.S.

Amanda M. Stewart, M.Ed.

ATTEST:

Carol A. DeSoto, Clerk

Watershed Protection and Restoration Program

Financial Assurance Plan

Charles County, Maryland

Fiscal Year 2021

Executive Summary

Background

The enclosed document is Charles County's third biennial Financial Assurance Plan (FAP) prepared to fulfill requirements specified in the Annotated Code of Maryland (COMAR), Environment Article, § 4-202.1.

State law requires that the County hold a public hearing and approve the FAP prior to filing with Maryland Department of Environment (MDE). The FAP is to describe actions and revenue necessary to implement impervious surface restoration program (ISRP) requirements of Charles County's next five-year National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (MS4) Permit Number MD0068365. The current permit was issued December 26, 2014 and expired December 25, 2019, however MDE administratively extended it until the new permit is issued. ISR completed after the expiration date will be applicable to the new permit, thus the second half of Fiscal Year 2020 is included in this FAP.

The FAP must demonstrate the jurisdiction has sufficient funding in the current fiscal year and subsequent budgets to meet its anticipated costs for the 2-year period immediately following the filing date of the FAP.

Summary of Charles County FAP

The FAP includes five elements specified in COMAR. Each element has a corresponding table attached hereto. Information included on the FAP tables is prior actual costs and projections. The FAP is not a tool for adopting new budgets or authorizing new projects. A summary of each table follows.

Table 1: All actions necessary to meet the ISRP.

Actions to achieve the ISRP are itemized into three categories: Operational Programs, Capital Projects and Other. Each category is subtotaled to include previously completed projects to achieve the County's anticipated future ISRP goal of 789 acres by the end date of its new permit, which is not yet issued. The FAP shows the goal will be achieved with an estimated total of 915 acres ISR from the second half of FY 2020 through FY 2025.

'Operational Programs' include Storm Drain Vacuuming and Septic Pump-Out Programs. The acres of restoration generated by these programs are averaged over the permit term and

the annual average is credited towards the ISRP. These programs are estimated to generate 41 acres towards the ISRP.

'Capital Projects' include projects to be designed and constructed by the County. The implementation status and projected implementation year are shown for each project. Capital Projects are expected to generate 838 acres towards the ISRP by FY 2025.

'Other' includes projects implemented by private individuals or companies, non-profits, and other agencies that the County credits towards its goal. These projects include nutrient trading, shoreline stabilizations, redevelopment projects, installation of septic system denitrification units, and connection of septic systems to public sanitary sewer systems. These projects are projected to generate 36 acres towards the ISRP by FY 2025.

Table 2: Projected annual and 5-year costs to meet the ISRP.

This table includes Operational and Capital expenditures from half of FY 2020 through FY 2025. The total ISRP costs except debt service through FY 2025 is projected to be $31.1 million.

Table 3: Projected annual and 5-year revenues and other funds that will be used to meet the costs of the ISRP.

By FY 2025, total revenue appropriated for the ISRP is projected to be $59.2 million.

Table 4: Sources of funds that will be utilized by the County to meet the entire MS4 permit

Table 4 shows the funding to implement all requirements of the MS4 permit, which comes from the Watershed Protection and Restoration Fund, General Fund, Inspection and Review Fund, and General Obligation Bonds. The total projected through FY 2025 is $53.7 million. Descriptions of the MS4 permit sections follow.

Permit Administration: A liaison shall be designated to coordinate with the MDE for implementation of the permit, and an organizational chart, detailing responsibilities for major MS4 program tasks shall be provided.

Legal Authority: County shall maintain adequate legal authority in according with NPDES regulations.

Source Identification: Geographical information system (GIS) format data shall be provided for the storm drain system, industrial and commercial sources, urban best management practices, impervious surfaces, monitoring locations, and water quality improvement projects.

Management Programs: Programs shall be maintained for: stormwater management and sediment and erosion control development review, triennial maintenance inspections of all stormwater facilities, illicit discharge and elimination, litter and floatables, property management and maintenance, and public education.

Restoration Plans and Total Maximum Daily Loads (TMDL): By the end of the permit term, anticipate 10% of the impervious surface baseline shall be restored. TMDLs approved with a stormwater waste load allocation assigned to the Charles County MS4, detailed restoration plans shall be completed within one year.

Assessment of Controls: Chemical, biological, and physical monitoring shall be completed according to requirements and rates specified.

Program Funding: Adequate program funding to comply with the permit conditions shall be maintained.

Table 5: Specific actions and expenditures that the county implemented in previous fiscal years to meet the ISRP.

Specific actions and expenditures to achieve the ISRP are itemized into three categories: Operational Programs, Capital Projects, and Other. Number of projects, ISR achieved, and cost is subtotaled for each category.

'Operational Programs' include Storm Drain Vacuuming, and the Septic Pump-Out Program. The acres of restoration generated by these programs are averaged over the permit term, and the annual average is credited towards the ISRP.

'Capital Projects' include projects designed and constructed by the County. The completion year and individual cost is shown for each project. The Capital Projects have generated 164 acres towards the ISRP to date.

'Other' includes projects implemented by private individuals or companies, non-profits, and other agencies that the County credits towards its goal. These projects primarily include shoreline stabilizations, redevelopment projects, installation of septic system denitrification units, and connection of septic systems to public sanitary sewer systems. These projects generated 21 acres towards the ISRP to date.

Future Considerations:

Several factors could affect implementation and accounting of the ISRP.

New Crediting Methods – MDE has developed 2011 and 2014 versions of a guidance manual for jurisdictions on acceptable ISR practices and crediting methods titled, 'Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated.' MDE is currently in the process of developing a third version of this manual. The manual may affect the projects and credits used in this FAP and may provide additional opportunities for ISRP practices.

Stormwater Best Management Practices Completion Dates for MS4 Permitting Purposes – MDE issued a memo on May 2, 2018 outlining minimum criteria on establishing water quality treatment provided by regional flood control ponds, that were constructed prior to

2000. If the criteria can be met, this could reduce the impervious surface baseline for Charles County since there are several of these facilities that previously could not be credited.

Inspection and Verification – MDE requires inspection and verification of all practices that count towards the ISRP, otherwise the practices are subject to removal from the total. Maintaining an accurate and complete database of inspections is critical in getting the full credit.

Maximum Extent Practicable – Factors such as time necessary for right-of-way acquisition and to obtain multi-jurisdictional permits, as well as time of year construction restrictions, are factors affecting the County's maximum extent practicable within a five-year permit term to implement the ISRP.

Next Generation MS4 Permit – MDE is drafting the next generation of the permit, which requires Environmental Protection Agency's (EPA's) review and concurrence.

These considerations will be tracked to determine if there will be impacts to current accounting methods and potential opportunities for additional ISRP credits.

MS4 Information	
Jurisdiction	Charles County
Contact Name	James Campbell
Phone	301-645-0598
Address	200 Baltimore Street
City	La Plata
State	MD
Zip	20646
Email	CampbelJ@CharlesCountyMD.gov
Impervious Acre Baseline (Untreated Acres)	7887.00
Permit Number	11-DP-3322
Reporting Year	2020

Check with MS4 Geodatabase:

Should match Permit Info table of Geodatabase.

VERSION 8/20/20

Article 4-202.1(j)(1)(i)1: Actions that will be required of the county or municipality to meet the requirements of its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

Note: To identify all "actions" required under the MS4 permit, provide an executive summary of the jurisdiction's MS4 programs. See MDE's FAP Guidance. For proposed actions to meet the impervious surface restoration plan, fill in the table below.

Baseline: 7,887

REST BMP TYPE[1]	BMP CLASS	IMP ACRES	IMPL COST	% ISRP COMPLETE	IMPL STATUS[2]	PROJECTED IMPL YR[3]	
Operational Programs[4]							
SDV	A	20	$409,300	0.3%	Under Construction	FY2021	
SEPP	A	18	$110,000	0.2%	Under Construction	FY2021	
SDV	A	20	$417,500	0.3%	Planning	FY2022	
SEPP	A	18	$125,000	0.2%	Planning	FY2022	
SDV	A	20	$425,900	0.3%	Planning	FY2023	
SEPP	A	18	$127,500	0.2%	Planning	FY2023	
SDV	A	20	$434,700	0.3%	Planning	FY2024	
SEPP	A	18	$130,050	0.2%	Planning	FY2024	
SDV	A	20	$443,500	0.3%	Planning	FY2025	
SEPP	A	18	$132,651	0.2%	Planning	FY2025	
Average Operations Next Two Years (FY2021-FY2022)[5]		38	$1,061,800	0.5%			
Average Operations Next Five Years (FY2021-FY2025)[5]		38	$2,756,101	0.5%			
Average Operations All Years[5]		41	$3,290,467	1%			
Capital Projects							
SHST	A	81	$1,423,670	1.0%	Under Construction	FY2021	Cliffton Shoreline Stabilization Phase 1
SHST	A	92.7	$1,616,710	1.2%	Under Construction	FY2021	Cliffton Shoreline Stabilization Phase 2
PPKT	S	3.61	$185,090	0.0%	Under Construction	FY2021	Cedar Tree Pond Retrofit
BIO	E	3.43	$504,900	0.0%	Under Construction	FY2021	General Smallwood Middle School Bioretention
STRE	A	37.79	$1,101,510	0.5%	Under Construction	FY2021	Hunt Club - Bridle Path Stream Restoration
ODSW, FSND, FPU	S, A	6.78	$838,361	0.1%	Under Construction	FY2021	Bensville Park Dry Swales, Sand Filter, Reforestation
STRE	A	106.07	$1,260,643	1.3%	Under Construction	FY2021	Ruth B. Swann Stream Restoration (Lower)
PWED	S	20.91	$620,000	0.3%	Planning	FY2022	White Oak Pond Retrofit
STRE	A	48	$2,174,400	0.6%	Planning	FY2022	Ruth B. Swann Stream Restoration (Upper)
STRE	A	34.62	$1,568,286	0.4%	Planning	FY2022	Ruth B. Swann Stream Restoration (Trib)
STRE	A	30.2	$1,056,890	0.4%	Planning	FY2023	CSM Tributaries Stream Restoration
STRE	A	10.85	$1,100,000	0.1%	Planning	FY2023	Acton Village - Westdale Drive Stream Restoration
STRE	A	110	$1,972,800	1.4%	Planning	FY2024	Port Tobacco Stream Restoration
WPOND	S	4.62	$304,911	0.1%	Planning	FY2024	Best Buy Wetpond Expansion
PWED, STRE	S, A	25.31	$1,670,409	0.3%	Planning	FY2024	White Plains Golf Course Pond Retrofit & Stream Restoration
STRE	A	17.2	$925,000	0.2%	Planning	FY2024	Walter Mitchell Outfall and Stream Restoration
PWED	S	9.63	$635,561	0.1%	Planning	FY2025	Wilton Court Pond Retrofit
PWED, SPSC	S	17.13	$1,130,546	0.2%	Planning	FY2025	South Hampton Pond Retrofits and Step Pool
STRE	A	14	$743,620	0.2%	Planning	FY2025	Milton Somers Stream Restoration
Subtotal Capital Next Two Years (FY2021-FY2022)		435	$11,293,570	6%			
Subtotal Capital Next Five Years (FY2021-FY2025)		674	$20,833,307	9%			
Subtotal Capital All Years		838	$26,586,537	11%			

Other						
SEPC	A	1	$0	0.0%	Under Construction	FY2021
SEPD	A	2	$0	0.0%	Under Construction	FY2021
SEPC	A	1	$0	0.0%	Planning	FY2022
SEPD	A	2	$0	0.0%	Planning	FY2022
SEPC	A	1	$0	0.0%	Planning	FY2023
SEPD	A	2	$0	0.0%	Planning	FY2023
SEPC	A	1	$0	0.0%	Planning	FY2024
SEPD	A	2	$0	0.0%	Planning	FY2024
SEPC	A	1	$0	0.0%	Planning	FY2025
SEPD	A	2	$0	0.0%	Planning	FY2025
Subtotal Other Next Two Years (FY2021-FY2022)		6	$0	0.1%		
Subtotal Other Next Five Years (FY2021-FY2025)		15	$0	0.2%		
Subtotal Other All Years		36	$0	0.5%		
Total Next Two Years (FY2021-FY2022)		**479**	**$12,355,370**	**6.1%**		
Total Next Five Years (FY2021-FY2025)		**727**	**$23,589,408**	**9.2%**		
Total All Years		**915**	**$29,877,004**	**11.7%**		

Check with MS4 Geodatabase:

Type, class, impervious acres, implementation cost and implementation status should match the various geodatabase tables for BMPs (AltBMPLine, AltBMPPoint, AltBMPPoly, and RestBMP)- aggregated by type and status.

Notes:

1. Use BMP domains from the MS4 Geodatabase which are shown on the Restoration BMP Type Code tab.
2. Complete, Under Construction, Planning, or Proposed.
3. Use Fiscal Year (FY)
4. For street sweeping indicate the annual frequency that the streets are swept, and for storm drain or catch basin cleaning report the pounds of material removed.
5. Average IMP ACRES for Operational BMPs should be the average of BMP 1 + the average of BMP 2, etc.
   IMPL COST is a summation and not an average.

VERSION 8/20/20

Article 4-202.1(j)(1)(i)2: Projected annual and 5-year costs for the county or municipality to meet the impervious surface restoration plan requirements of its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

Half Year

DESCRIPTION	PAST UP THRU FY 2019	CURRENT YEAR FY 2020	PROJECTED YEAR 1 FY 2021	PROJECTED YEAR 2 FY 2022	PROJECTED YEAR 3 FY 2023	PROJECTED YEAR 4 FY 2024	PROJECTED YEAR 5 FY 2025	TOTAL COSTS
Operating Expenditures (costs)								
Street Sweeping Program	$0	$0	$0	$0	$0	$0	$0	$0
Inlet Cleaning	$0	$411,077	$409,300	$417,500	$425,900	$434,700	$443,500	$2,541,977
Support of Capital Projects	$0	$126,627	$219,900	$220,400	$226,400	$232,500	$239,000	$1,264,827
Debt Service Payment - 30 yrs	$0	$654,947	$825,120	$1,108,919	$1,249,228	$1,566,231	$1,729,492	$7,133,936
Septic Pump-Out (Enivronmental Service Fund)	$0	$123,289	$110,000	$125,000	$127,500	$130,050	$132,651	$748,490
Capital Expenditures (costs)								
General Fund (Paygo)								$0
WPR Fund (Paygo)	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service	$0	$10,068,136	$2,615,978	$4,362,686	$2,156,890	$4,873,120	$2,509,727	$26,586,537
Grants & Partnerships								$0
Other (please stipulate capital expenditure)*	-	-	-	-	-	-	-	$0
Subtotal Operation and Paygo:	$0	$1,315,940	$1,564,320	$1,871,819	$2,029,028	$2,363,481	$2,544,643	$11,689,231
Total Expenditures:	**$0**	**$11,384,076**	**$4,180,298**	**$6,234,505**	**$4,185,918**	**$7,236,601**	**$5,054,370**	**$38,275,768**
							Total ISRP costs except debt service:	**$31,141,831**
							Compare ISRP costs (except debt service) / total ISRP proposed actions:	**104%**

Check with MS4 Geodatabase:

The total current FY2020 expenditure should be less than the combined total of the "OP_COST" and "CAP_COST" fields in the Fiscal Analyses table of the geodatabase.

The total projected FY2021 expenditure should be less than the combined total of the "OP_BUDGET" and "CAP_BUDGET" fields in the Fiscal Analyses table of the geodatabase.

*Insert additional rows as needed.

VERSION 8/20/20

Article 4-202.1(j)(1)(i)3: Projected annual and 5-year revenues or other funds that will be used to meet the cost for the county or municipality to meet the impervious surface restoration plan requirements under the National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

DESCRIPTION	PAST UP THRU FY 2019	CURRENT YEAR FY 2020	PROJECTED YEAR 1 FY 2021	PROJECTED YEAR 2 FY 2022	PROJECTED YEAR 3 FY 2023	PROJECTED YEAR 4 FY 2024	PROJECTED YEAR 5 FY 2025	TOTAL NEXT 2-YEARS FY 21-22[1]	TOTAL
Annual Revenue[2] Appropriated for ISRP		$8,477,920	$9,489,100	$10,282,100	$10,265,100	$10,320,050	$10,375,051	$19,771,200	$59,209,321
Annual Costs towards ISRP[3]	$0	$11,384,076	$4,180,298	$6,234,505	$4,185,918	$7,236,601	$5,054,370	$10,414,803	$38,275,768
							Compare revenue appropriated / annual costs:	**190%**	
							WPRP 2020 Reporting Criteria:	**100%**	

ISRP = Impervious Surface Restoration Program

Notes:

1. Article 4-202.1(j)(2): Demonstration that county or municipality has sufficient funding in the current fiscal year and subsequent fiscal year budgets to meet its estimated cost for the 2-year period immediately following the filing date of the FAP.
2. Revenue means "dedicated revenues, funds, or sources of funds (per Article 4-202.1(j)(4)(ii)).
3. See table of ISRP Cost.

VERSION 8/20/20

Article 4-202.1(j)(1)(i)4: Any sources of funds that will be utilized by the county or municipality to meet the requirements of its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

Half Year

SOURCE	PAST UP THRU FY 2019	CURRENT YEAR FY 2020	PROJECTED YEAR 1 FY 2021	PROJECTED YEAR 2 FY 2022	PROJECTED YEAR 3 FY 2023	PROJECTED YEAR 4 FY 2024	PROJECTED YEAR 5 FY 2025	TOTAL NEXT FIVE YEARS
Paygo Sources								
Stormwater Remediation Fees (WPR Fund)	$ -	$ 1,985,269	$ 4,767,900	$ 4,782,900	$ 4,835,400	$ 4,887,800	$ 4,940,200	$ 24,214,200
Miscellaneous Fees (WPR Fund)	$ -	$ 38,151	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 11,000
General Fund	$ -	$ 275,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 1,500,000
Fund Balance (WPR Fund)	$ -	$ 51,241	$ 509,000	$ 72,000	$ -	$ -	$ -	$ 581,000
Sediment & Erosion Control Fees (Insp & Review Fund)	$ -	$ 182,417	$ 364,000	$ 364,000	$ 364,000	$ 364,000	$ 364,000	$ 1,820,000
Stormwater Maintenance Inspection Fees (Insp & Review Fund)	$ -	$ 261,085	$ 364,000	$ 364,000	$ 364,000	$ 364,000	$ 364,000	$ 1,820,000
Subtotal Paygo Sources	$ -	$ 2,793,162	$ 6,307,100	$ 5,885,100	$ 5,865,600	$ 5,918,000	$ 5,970,400	$ 29,946,200
Debt Service (paygo sources will be used to pay off debt service. Note that previous appropriations for debt service used for ISRP is listed in FY 2017).								
County Transportation Bonds								$ -
General Obligation Bonds	$ -	$ 6,000,000	$ 3,800,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 23,800,000
Revenue (Utility) Bonds								$ -
State Revolving Loan Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Public-private partnership (debt service)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Debt Service	$ -	$ 6,000,000	$ 3,800,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 23,800,000
Grants and Partnerships (no payment is expected)								
State funded grants								$ -
Federal funded grants								$ -
Public-private partnership (matched grant)								$ -
Subtotal Grants and Partnerships	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Annual Sources of Funds	**$ -**	**$ 8,793,162**	**$ 10,107,100**	**$ 10,885,100**	**$ 10,865,600**	**$ 10,918,000**	**$ 10,970,400**	**$ 53,746,200**
Percent of Funds Directed Toward ISRP								

Compare total permit term paygo ISRP costs / subtotal permit term paygo sources: 35%

Compare total permit term ISRP costs / total permit term annual sources of funds: 50%

* WPR Fund: Watershed Protection and Restoration Fund

Check with MS4 Geodatabase:

The total sources related to WPR Funds in Current FY2020 should match the "WPR_FUND" field of the geodatabase.

Article 4-202.1(j)(1)(i)5: Specific actions and expenditures that the county or municipality implemented in the previous fiscal years to meet its impervious surface restoration plan requirements under its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

Baseline: 7,887 **Requirement:**

REST BMP ID	REST BMP TYPE[1]	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS[2]	GEN COMMENTS
Operational Programs[3]									
Storm Drain Vacuming	SDV	A	150	62.22	6/30/2020	411,077	0.8%	Complete	(155.54 tons x 0.4 acres)
Septic Pump-Out	SEPP	A	900	27	6/30/2020	$123,289	0.3%	Complete	(900 x 0.03 acres)
Average Operations Complete To Date[4]			1,050	89		$534,366	1.1%		
Capital Projects									
CH17ALN000011	STRE	S, A	1	14.96	3/17/2020	$816,760	0.2%	Complete	Apple Creek Stream Restoration
CH16RST000097	PWED	S	1	29.0	5/26/2020	$793,680	0.4%	Complete	La Plata High School
CH17ALN000005	STRE	A	1	20.2	6/24/2020	$689,233	0.3%	Complete	St. Charles Parkway Stream Restoration
CH17ALN000014	STRE	A	1	29.6	6/24/2020	$965,268	0.4%	Complete	Higdon Elem Stream Restoration
CH20ALN000028	SHST	A	1	70.2	6/29/2020	$2,488,289	0.9%	Complete	Potomac Heights Shoreline Stabilization
Subtotal Capital Complete To Date			5	164		$5,753,230	2.08%		
Other									
	SEPC	A	1	0.39	6/30/2020	$0	0.0%	Complete	Septic Connection to Sewer (0.39 acres/ea)
	SEPD	A	36	9.36	6/30/2020	$0	0.1%	Complete	Septic Denitrification (0.26 acres/ea)
	SHST	A	2	11.64	6/30/2020	$0	0.1%	Complete	Private Shoreline Stabilizaiton (291*0.04)
Subtotal Other Complete To Date			39	21		$0	0.3%		
Total Complete to Date			**1,094**	**274**		**$6,287,596**	**3.5%**		

Check with MS4 Geodatabase:

Rest BMP ID, type, class, number of BMPs, impervious acres, built date, implementation cost and implementation status should match the various geodatabase tables for BMPs (AltBMPLine, AltBMPPoint, AltBMPPoly, and RestBMP)-- aggregated by type and status.

Notes:

1. Use BMP domains from the MS4 Geodatabase which are shown on the Restoration BMP Type Code tab.
2. Complete, Under Construction, Planning, or Proposed.
3. For street sweeping indicate the annual frequency that the streets are swept, and for storm drain or catch basin cleaning report the pounds of material removed.
4. Average IMP ACRES for Operational BMPs should be the average of BMP 1 + the average of BMP 2, etc.
   IMPL COST is a summation and not an average.

VERSION 8/20/20

Attachment: Restoration BMP Type Codes

Code	Code Description
AGRE	Green Roof - Extensive
AGRI	Green Roof - Intensive
APRP	Permeable Pavements
ARTF	Reinforced Turf
BRCT	Bio-Reactor Carbon Filter
DID	Disconnection of Illicit Discharges
EDU	Education
FBIO	Bioretention
FORG	Organic Filter (Peat Filter)
FPER	Perimiter (Sand) Filter
FPRES	Floodplain Restoration
FSND	Sand Filter
FUND	Underground Filter
IBAS	Infiltration Basin
ITRN	Infitration Trench
MENF	Enhanced Filters
MIBR	Infiltration Berms
MIDW	Dry Well
MILS	Landscape Infiltration
MMBR	Micro-Bioretention
MRNG	Rain Gardens
MRWH	Rainwater Harvesting
MSGW	Submerged Gravel Wetlands
MSWB	Bio-Swale
MSWG	Grass Swale
MSWW	Wet Swale
NDNR	Disconnection of Non-Rooftop Runoff
NDRR	Disconnection of Rooftop Runoff
NSCA	Sheetflow to Conservation Areas
ODSW	Dry Swale
PET	Pet Waste Management
PMED	Micropool Extended Detention Pond
PMPS	Multiple Pond System

Code	Code Description
PPKT	Pocket Pond
PWED	Extended Detention Structure, Wet
PWET	Retention Pond (Wet Pond)
RBS	River Bank Stabilization
SPSC	Step Pool Storm Conveyance
SUB	Sub-Soiling
TRA	Trash Removal
WEDW	Extended Detention - Wetland
WPKT	Pocket Wetland
WPWS	Wet Pond - Wetland
WSHW	Shallow Marsh
XDED	Extended Detention Structure, Dry
XDPD	Detention Structure (Dry Pond)
XFLD	Flood Management Area
XOGS	Oil Grit Separator
OTH	Other

Code	Code Description
OUT	Outfall Stabilization
SHST	Shoreline Stabilization
STRE	Stream Restoration
SEPC	Septic Connection to WWTP
SEPD	Septic Denitrification
SEPP	Septic Pumping
CBC	Catch Basin Cleaning
IMPF	Impervious Surface Elimination (to Forest)
IMPP	Impervious Surface Elimination (to Pervious)
MSS	Mechanical Street Sweeping
FPU	Planting Trees or Forestation on Previous Urban
GMB	Grass/Meadow Buffers
FB	Forest Buffers
VSS	Regenerative/Vacuum Street Sweeping
SDV	Storm Drain Vacuuming

*Codes and descriptions from *MDE NPDES MS4, Geodatabase Design and User's Guide, May 2017*