

County Council of Howard County, Maryland

2019 Legislative Session

Legislative Day No. 5

Resolution No. 45-2019

Introduced by: The Chairperson at the request of the County Executive

A RESOLUTION approving a Financial Assurance Plan for Howard County’s National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System permit programs, in accordance with Section 4-202.1 of the Environment Article of the Annotated Code of Maryland; and requiring certain copies be sent to the Maryland Department of the Environment.

Introduced and read first time April 1, 2019.

By order Jessica Feldmark
Jessica Feldmark, Administrator

Read for a second time at a public hearing on April 22, 2019.

By order Jessica Feldmark
Jessica Feldmark, Administrator

This Resolution was read the third time and was Adopted , Adopted with amendments , Failed , Withdrawn , by the County Council on May 6, 2019.

Certified By Jessica Feldmark
Jessica Feldmark, Administrator

Approved by the County Executive on May 13, 2019.

[Signature]
Calvin Ball, County Executive

NOTE: [[text in brackets]] indicates deletions from existing law; TEXT IN SMALL CAPITALS indicates additions to existing law; Strike-out indicates material deleted by amendment; Underlining indicates material added by amendment

1 **WHEREAS**, related to the Watershed Protection and Restoration Fee, Howard County is
2 required to file a Financial Assurance Plan (“Plan”), approved by the local governing body, with
3 the Maryland Department of the Environment (“MDE”), in accordance with § 4-202.1 of the
4 Environment Article of the Annotated Code of Maryland (the “State Law”); and
5

6 **WHEREAS**, the County has worked with MDE over the past several months to craft a Plan
7 that projects and describes actions and financial resources and costs related to stormwater
8 management in Howard County over the two-year period following the filing date of the Plan; and
9

10 **WHEREAS**, previous Plans have been approved by the passage of Council Resolution No.
11 92-2016 and Council Resolution No. 185-2015; and
12

13 **WHEREAS**, the State law requires that the County file a Plan with MDE and that the
14 governing body of the County approve the Plan prior to filing with MDE.
15

16 **NOW, THEREFORE, BE IT RESOLVED** by the County Council of Howard County,
17 Maryland, this 6th day of May, 2019, that it hereby approves the
18 Plan, substantially in the form attached, as a projection of actions, funding, and costs of Howard
19 County’s stormwater management program over the two-year period following the filing date of
20 the Plan.
21

22 **AND BE IT FURTHER RESOLVED** that a copy of this Resolution and the Plan be
23 sent to the Maryland Department of the Environment, 1800 Washington Boulevard, Baltimore,
24 MD 21230.

Howard County Financial Assurance Plan 2018: Executive Summary

Permit Overview

The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit issued to Howard County, hereinafter “the County”, on December 18, 2014, mandated that the County implement restoration efforts for 20% of its total impervious surface area that has not already been restored to the maximum extent practicable (MEP), by December 17, 2019. As part of the impervious area accounting and restoration process, the Maryland Department of the Environment (MDE) has allowed for each Phase I MS4 municipality to submit an updated and revised impervious baseline in year 4 of the current permit, which for Howard County is 2018. Countywide, the total County MS4 Impervious Area, or the area under Howard County jurisdiction, is 13,775.7 acres as of 2002, the baseline year. The impervious baseline treated area is 3,733.6 acres and the untreated area is 10,042.0 acres. Applying the 20% factor to the untreated area yields a 20% restoration target of 2,008.4 acres. State law requires that the County approve and file a financial assurance plan (Plan) with MDE that describes actions, revenues, and costs required to meet the 20% restoration requirement. The law also requires that the County Executive certify that a public hearing was held on the Plan and that the local governing body approved the Plan. Because a new County Executive and County Council took office on December 3, 2018, this Plan is draft until such time that the new local governing body can approve the Plan.

Howard County implemented its stormwater utility fee, the Watershed Protection and Restoration Fee (WPRF), on July 1, 2013, as required by State law. Upon implementation of the Fee and the Watershed Protection and Restoration Fund, the County increased existing efforts to plan, design, construct and monitor restoration projects necessary to meet the NPDES MS4 permit’s 20% restoration goal. Per MDE guidance, all restoration projects implemented following June 10, 2010 are considered restoration that applies to the County’s 20% restoration goal. From July 2010 through July 2018, the County has achieved credits for restoring 1,871.5 acres (18.6%) and has 136.9 acres remaining to treat by December 17, 2019.

Actions Required to Meet Permit

The County will continue to implement the numerous programs required by the MS4 permit. Best management practices (BMPs) will continue to be utilized to complete the restoration work and improve water quality, including stream restoration, outfall stabilization, tree planting, construction of new BMPs, retrofitting existing BMPs, street sweeping, inlet cleaning, and septic system upgrades, pump-outs, and connections to the sanitary sewer system. The County also continues to research and develop the voluminous electronic data necessary to meet the ever-expanding Geodatabase reporting requirements of the MS4 permit.

Total Permit Cost and Fund Sources

The County appreciates the importance of working to meet the restoration requirement of its permit. Utilizing current project cost estimates for restoring impervious acreage, as well as including the acres calculated to-date, the County believes that the 20% restoration requirement of its MS4 permit will cost approximately \$180,999,917 beginning in Fiscal Year (FY) 2011 through FY 2020. Over the next two fiscal years, FY 2019 and FY 2020, the County has programmed more than enough projects to meet the 20% restoration requirement and has budgeted approximately \$49,109,778 to ensure that the requirement is met. These cost estimates include the engineering design, construction, and monitoring costs associated with commencing and completing the implementation of the 20% restoration requirement.

The County will use the following revenue sources for FY 2019 and FY 2020 in funding the costs of the MS4 permit over the next two fiscal years:

Watershed Protection and Restoration Fee- The County currently collects approximately \$10.8 million from the Watershed Protection and Restoration Fee. This amount will decrease steadily over the next year, as the Fee for commercial properties continues to decline, as specified in Council Resolution 37-2016. The County will also utilize this Fund to absorb a portion of the operating costs in administering stormwater restoration projects and to provide debt service for General Obligation or Storm Water Bonds issued to fund the stormwater restoration projects.

Grants- The County typically receives funding from various State and Federal grant programs to conduct stormwater restoration work. There is also the potential to work with private entities in conducting stormwater restoration work.

Stormwater Bonds – The County will issue stormwater bonds to fund necessary stormwater restoration projects required by the MS4 permit

General Fund- The County will utilize its General Fund to absorb a portion of the operating costs in administering stormwater restoration projects.

General Obligation Bonds- The County will issue General Obligation Bonds, if necessary, to fund necessary stormwater restoration projects required by the MS4 permit.

Future Considerations

The Plan describes projected actions, revenues, and costs to meet stormwater management requirements based on the current policy and regulatory environment established by MDE. As the County moves forward in its program, it continues to gain a better understanding of the costs associated with completing the necessary stormwater restoration work. In addition, the County expects that several factors to be determined at the State level will influence the costs of meeting the MS4 permit:

Revised Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated - The Chesapeake Bay Program (CBP) recently finalized the development of the Phase 6 version of the Chesapeake Bay Watershed Model (P6 Model). Changes in pollutant load modeling have a direct impact on impervious accounting since the impervious equivalencies are based on pollutant load reductions. The changes in P6 loading and reduction rates has prompted the development of draft P6 impervious acre equivalencies. It is the County's understanding that new equivalencies will be included in the forthcoming updates to MDE's Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated guidance in 2019. Although, draft P6 impervious acre equivalencies are not finalized or published at this time, it is important for the County's allocation of resources and near-term budgeting to prepare for potential changes to the crediting.

Nutrient Trading Program- MDE and the Maryland Department of Agriculture dedicated considerable resources to a nutrient trading program that allows nutrient trades that will help Maryland jurisdictions meet their 20% restoration requirement in a cost-effective manner. The option of including nutrient trading to meet the 20% restoration requirement is not included in the County's Plan at this time, but may be included in the future, if necessary.

Summary

The Plan presented is a projected spending plan that will assist the County in meeting its MS4 permit restoration requirement.

MS4 Information

Jurisdiction	Howard County
Contact Name	Mark S. Richmond
Phone	410-313-6413
Address	6751 Columbia Gateway Drive, Suite 514
City	Columbia
State	MD
Zip	21046
Email	msrichmond@howardcountymd.gov
Baseline Treatment Requirement (Acres)	2008.40
Permit Num	MD0068322, 11-DP-3318
Reporting Year	2018

Check with MDE Geodatabase:

Should match Permit info table of Geodatabase, except for Impervious Acre Baseline-- that should match Impervious Surface Table.

VERSION 2-28-18

Article 4-202.1(j)(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:

2,008

Requirement:

20%

REST BMP TYPE*	BMP CLASS	IMP ACRES	IMPL COST	% ISRP COMPLETE	IMPL STATUS**	PROJECTED IMPL YR
Operational Programs						
MSS	A	275.0	\$400,000	13.7%	P	FY19
MSS	A	275.0	\$400,000	13.7%	P	FY20
SDV	A	40.0	\$100,000	2.0%	P	FY19
SDV	A	40.0	\$100,000	2.0%	P	FY20
Average Operations Next Two Years (FY2019-FY2020)***		315.0	\$1,000,000	15.7%		
Average Operations Permit Term (FY2011-FY2020)***		382.1	\$4,116,566	19.0%		
Capital Projects						
FBIO	S	5.7	\$1,667,839	0.3%	UC	FY19
MSGW	E	1.6	\$700,000	0.1%	P	FY19
OUT	A	1.1	\$40,000	1.2%	P	FY19
OUT	A	0.9	\$265,360	1.2%	P	FY19
OUT	A	2.8	\$100,000	1.2%	P	FY19
OUT	A	2.2	\$100,000	1.2%	P	FY19
OUT	A	1.2	\$50,000	1.2%	P	FY19
OUT	A	0.8	\$50,000	1.2%	P	FY19
OUT	A	2.5	\$100,000	1.2%	P	FY19
OUT	A	4.3	\$100,000	1.2%	P	FY19
OUT	A	2.3	\$100,000	1.2%	P	FY19
PWED	S	8.9	\$750,372	0.4%	UC	FY19
PWET	S	10.9	\$415,078	0.5%	P	FY19
PWET	S	48.8	\$657,106	2.4%	P	FY19
PWET	S	2.3	\$592,783	0.1%	P	FY19
PWET	S	0.4	\$460,000	0.0%	P	FY19
PWET	S	6.7	\$650,000	0.3%	P	FY19
SPSC	A	11.2	\$1,000,000	0.6%	P	FY19
STRE	A	60.3	\$4,125,000	1.2%	UC	FY19
STRE	A	36.0	\$1,200,000	1.2%	P	FY19
STRE	A	4.0	\$200,000	1.2%	P	FY19
STRE	A	3.8	\$200,000	1.2%	P	FY19
STRE	A	18.5	\$700,000	1.2%	P	FY19
STRE	A	9.9	\$768,630	1.2%	P	FY19
STRE	A	12.0	\$627,726	1.2%	P	FY19
STRE	A	8.1	\$671,874	1.2%	P	FY19
WPWS	S	18.9	\$900,000	0.9%	P	FY19
WPWS	S	6.5	\$700,000	0.3%	P	FY19
WSHW	S	2.8	\$1,539,026	0.1%	P	FY19
XDPD	S	26.1	\$153,000	1.3%	UC	FY19
OUT	A	4.0	\$100,000	1.2%	P	FY20
PWED	S	2.5	\$704,560	0.1%	P	FY20
PWET	S	39.1	\$300,000	1.9%	P	FY20
PWET	S	30.2	\$300,000	1.5%	P	FY20
PWET	S	27.2	\$300,000	1.4%	P	FY20
PWET	S	23.8	\$1,841,655	1.2%	P	FY20
PWET	S	4.2	\$1,106,422	0.2%	P	FY20
PWET	S	6.7	\$1,100,000	0.3%	P	FY20
PWET	S	11.2	\$1,370,000	0.6%	P	FY20
SPSC	A	4.8	\$200,000	0.2%	P	FY20
SPSC	A	4.2	\$492,529	0.2%	P	FY20
STRE	A	10.9	\$280,484	1.2%	P	FY20
STRE	A	5.4	\$600,000	1.2%	P	FY20
STRE	A	4.8	\$100,000	1.2%	P	FY20
STRE	A	48.1	\$1,250,000	1.2%	P	FY20
STRE	A	4.0	\$450,000	1.2%	P	FY20
STRE	A	30.4	\$1,250,000	1.2%	P	FY20
STRE	A	7.8	\$700,000	1.2%	P	FY20
STRE	A	1.3	\$860,000	1.2%	P	FY20
STRE	A	19.3	\$744,246	1.2%	P	FY20
STRE	A	9.4	\$100,000	1.2%	P	FY20
STRE	A	31.0	\$1,142,085	1.2%	P	FY20
WPWS	S	34.3	\$667,893	1.7%	P	FY20
WPWS	S	1.2	\$400,000	0.1%	P	FY20
Subtotal Capital Next Two Years (FY2019-FY2020)		687.1	\$35,943,668	51.5%		
Subtotal Capital Permit Term (FY2011-FY2020)		1635.8	\$90,107,047	98.7%		

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.

APRP	Permeable Pavements
FBIO	Bioretention
FSND	Sand Filter
FUND	Underground Filter
IBAS	Infiltration Basin
IMPP	Impervious Surface Elimination (to pervious)
MIDW	Dry Well
MMBR	Micro-Bioretention
MRNG	Rain Gardens
MSWB	Bio-Swale
MSWG	Grass Swale
ODSW	Dry Swale
WEDW	Extended Detention - Wetland
PWED	Extended Detention Structure, Wet
PWET	Retention Pond (Wet Pond)
WPWS	Wet Pond - Wetland
SPSC	Step Pool Storm Conveyance
UGS	Underground Storage
WSHW	Shallow Marsh
XDED	Extended Detention Structure, Dry
SEPP	Septic Pumping
SEPD	Septic Denitrification
SEPC	Septic Connections to WWTP
MSS	Mechanical Street Sweeping
SDV	Storm Drain Vacuuming
FPU	Planting Trees or Forestation on Previous Urban
STRE	Stream Restoration
OUT	Outfall Stabilization

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.

DESCRIPTION	PAST UP THRU FY 2017	CURRENT YEAR FY 2018	PROJECTED YEAR 1 FY 2019	PROJECTED YEAR 2 FY 2020	PROJECTED YEAR 3 FY 2021	PROJECTED YEAR 4 FY 2022	PROJECTED YEAR 5 FY 2023	TOTAL COSTS
Operating Expenditures (costs)								
Street Sweeping Program	\$2,672,865	\$227,074	\$400,000	\$400,000				\$3,699,939
Inlet Cleaning	\$119,970	\$96,657	\$100,000	\$100,000				\$416,627
Debt Service Payment	\$0	\$0	\$550,000	\$650,000				\$1,200,000
Other (please stipulate program expenditure)*								\$0
Capital Expenditures (costs)								
Total capital expenditures	\$52,653,000	\$19,150,000	\$14,015,000	\$11,150,000	-	-	-	\$96,968,000
Subtotal operation and paygo:	\$55,445,835	\$19,473,731	\$15,065,000	\$12,300,000				\$102,284,566
Total expenditures:	\$55,445,835	\$19,473,731	\$15,065,000	\$12,300,000	\$0	\$0	\$0	\$102,284,566
Total ISRP costs except debt service:								\$101,084,566
Compare ISRP costs (except debt service) / total ISRP proposed actions:								94%

Check with MDE Geodatabase:

The total current FY 2018 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 FY 2019 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 necessary.

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 2017	CURRENT YEAR FY 2018	PROJECTED YEAR 1 FY 2019	PROJECTED YEAR 2 FY 2020	PROJECTED YEAR 3 FY 2021	PROJECTED YEAR 4 FY 2022	PROJECTED YEAR 5 FY 2023	TOTAL NEXT 2-YEARS FY 19-20*	TOTAL
Annual Revenue** Appropriated for ISRP	\$52,653,000	\$19,150,000	\$14,015,000	\$11,150,000				\$25,165,000	\$96,968,000
Annual Costs towards ISRP***	\$52,653,000	\$19,150,000	\$14,015,000	\$11,150,000	\$0	\$0	\$0	\$25,165,000	\$96,968,000
Compare revenue appropriated / annual costs:								100%	
WPRP 2018 Reporting Criteria								100%	

ISRP = Impervious Surface Restoration Program, or 20% Restoration Requirement

* 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. Note that the appropriations and expenditures include time period up to FY 2020.

** Revenue means "dedicated revenues, funds, or sources of funds (per Article 4-202.1(j)(4)(ii)). Note that budget appropriations have only been approved by governing bodies through FY 2018 at the time of FAP reporting.

*** See table of ISRP Cost.

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.

SOURCE	PAST UP THRU FY 2017	CURRENT YEAR FY 2018	PROJECTED YEAR 1 FY 2019	PROJECTED YEAR 2 FY 2020	PROJECTED YEAR 3 FY 2021	PROJECTED YEAR 4 FY 2022	PROJECTED YEAR 5 FY 2023	TOTAL PERMIT CYCLE
Paygo Sources								
Stormwater Remediation Fees for Capital (WPR Fund)	\$ 30,492,000	\$ 10,450,000	\$ 10,665,000	\$ 2,150,000	\$ -	\$ -	\$ -	\$ 53,757,000
General Fund (Operating)	\$ 12,810,000	\$ 1,830,000	\$ 1,830,000	\$ 1,830,000	\$ -	\$ -	\$ -	\$ 18,300,000
Stormwater Remediation Fees for Operating (WPR Fund)	\$ 14,935,839	\$ 4,891,300	\$ 5,141,358	\$ 5,193,420	\$ -	\$ -	\$ -	\$ 30,161,917
General Fund (Capital)	\$ 2,650,000				\$ -	\$ -	\$ -	\$ 2,650,000
Subtotal Paygo Sources	\$ 60,887,839	\$ 17,171,300	\$ 17,636,358	\$ 9,173,420	\$ -	\$ -	\$ -	\$ 104,868,917
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).								
General Obligation Bonds	\$ 25,371,000	\$ 750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 26,121,000
Stormwater Revenue (Utility) Bonds	\$ -	\$ 8,100,000	\$ 11,300,000	\$ 6,900,000	\$ -	\$ -	\$ -	\$ 26,300,000
State Revolving Loan Fund	\$ 3,200,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,200,000
Subtotal Debt Service	\$ 28,571,000	\$ 9,850,000	\$ 11,300,000	\$ 6,900,000	\$ -	\$ -	\$ -	\$ 56,621,000
Grants and Partnerships (no payment is expected)								
State funded grants	\$ 11,260,000	\$ 3,650,000	\$ 2,000,000	\$ 2,100,000	\$ -	\$ -	\$ -	\$ 19,010,000
Federal funded grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public-private partnership (matched grant)	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Subtotal Grants and Partnerships	\$ 11,760,000	\$ 3,650,000	\$ 2,000,000	\$ 2,100,000	\$ -	\$ -	\$ -	\$ 19,510,000
Total Annual Sources of Funds	\$ 101,218,839	\$ 30,671,300	\$ 30,936,358	\$ 18,173,420	\$ -	\$ -	\$ -	\$ 180,999,917
Percent of Funds Directed Toward ISRP	100.00%	90.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

Compare total permit term paygo ISRP costs / subtotal permit term paygo sources: 98%
 Compare total permit term ISRP costs / total permit term annual sources of funds: 57%

* WPR Fund: Watershed Protection and Restoration Fund.

Check with MDE Geodatabase:

The total sources related to WPR Funds in Current FY 2018 should match the "WPR_Fund" field of the geodatabase.

Article 4.202.3(01)(1)(5)-Specific actions and expenditures that the county or municipality implemented in the previous fiscal year to meet its Impervious surface restoration plan requirements under its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

HOI18ST900321	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	C	Dorrey Hill Outfall E
HOI18ST900320	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	C	Dorrey Hill Outfall C
HOI18ST900319	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	C	Dorrey Hill Outfall B
HOI18ST900317	SPSC	A	1	3.3	4/20/2015	\$50,000	0.2%	C	Towering Oaks SPSC
HOI18ST900318	SPSC	A	1	1.2	7/5/2013	\$578,896	0.1%	C	Oak West Drive
HOI04ALND00014	STRE	A	1	12.5	8/31/2010	\$909,063	0.6%	C	Paul Mill Road
HOI04ALND00011	STRE	A	1	0.9	12/15/2010	\$50,000	0.0%	C	Hickory Ridge
HOI1ALND00015	STRE	A	1	7.0	1/31/2011	\$521,967	0.3%	C	Old Willow Way
HOI1ALND00049	STRE	A	1	6.7	3/22/2011	\$500,000	0.3%	C	Beckwood
HOI1ALND00016	STRE	A	1	4.5	3/25/2011	\$50,000	0.2%	C	Great Drum Circle
HOI1ALND00048	STRE	A	1	2.2	4/4/2011	\$104,839	0.1%	C	Alumni Harvest - Phase 2
HOI1ALND00056	STRE	A	1	3.7	11/30/2011	\$100,000	0.2%	C	Stange Park
HOI1ALND00045	STRE	A	1	3.4	12/16/2011	\$16,775	0.2%	C	Hi Tech Road
HOI1ALND00051	STRE	A	1	22.6	2/17/2012	\$1,232,322	1.0%	C	Meadowbrook Park
HOI1ALND00075	STRE	A	1	20.2	2/20/2012	\$869,669	1.3%	C	Therfield Stream
HOI1ALND00067	STRE	A	1	22.3	2/21/2012	\$1,529,717	1.1%	C	Red Hill Branch
HOI1ALND00091	STRE	A	1	4.4	2/29/2012	\$200,000	0.2%	C	LPH
HOI1ALND00088	STRE	A	1	6.4	2/29/2012	\$200,000	0.3%	C	LPH
HOI1ALND00052	STRE	A	1	1.2	3/21/2012	\$82,103	0.1%	C	Great Oaks
HOI1ALND00046	STRE	A	1	14.6	3/23/2012	\$271,365	0.7%	C	Branches Lane
HOI1ALND00029	STRE	A	1	2.7	6/30/2012	\$100,000	0.1%	C	Trotter Road
HOI1ALND00054	STRE	A	1	2.9	1/1/2013	\$234,277	0.1%	C	Devel Drive
HOI1ALND00050	STRE	A	1	8.4	1/9/2013	\$500,000	0.4%	C	Allyway
HOI1ALND00048	STRE	A	1	8.6	3/6/2013	\$50,000	0.4%	C	Charlett Farms
HOI1ALND00043	STRE	A	1	14.2	3/18/2013	\$715,509	0.7%	C	Elmesth Road
HOI1ALND00053	STRE	A	1	31.0	3/21/2013	\$1,031,383	1.3%	C	Stone Trail Stream
HOI1ALND00019	STRE	A	1	26.4	4/10/2013	\$299,656	1.3%	C	Wheatfield Way
HOI1ALND00020	STRE	A	1	27.7	5/13/2013	\$668,920	1.4%	C	Whisper Drive
HOI1ALND00090	STRE	A	1	2.5	10/10/2013	\$50,000	0.1%	C	Furnace Ave
HOI1ALND00017	STRE	A	1	40.8	3/11/2014	\$482,471	2.0%	C	Witherside
HOI1ALND00018	STRE	A	1	5.6	6/16/2014	\$144,512	0.3%	C	Tiller Drive Phase 2
HOI1ALND00006	STRE	A	1	8.8	5/1/2015	\$528,929	0.4%	C	Phoenix Court
HOI1ALND00030	STRE	A	1	0.3	9/9/2015	\$100,000	0.0%	C	D-1153 Trotter Road
HOI1ALND00056	STRE	A	1	5.8	2/10/2016	\$141,930.1	0.3%	C	Southern Road
HOI1ALND00101	STRE	A	1	2.8	3/1/2016	\$50,000	0.1%	C	Shallow Run
HOI1ALND00008	STRE	A	1	1.8	6/29/2016	\$50,000	0.1%	C	Deep Run
HOI1ALND00022	STRE	A	1	8.7	10/31/2016	\$50,000	0.4%	C	Turf Valley J3 Excelsior
HOI1ALND00004	STRE	A	1	6.5	12/6/2016	\$117,8220	0.3%	C	Boone Branch
HOI1ALND00055	STRE	A	1	1.4	3/1/2017	\$59,781	0.4%	C	Dossy Trail
HOI1ALND00064	STRE	A	1	0.5	3/1/2017	\$50,000	0.1%	C	Sewardist
HOI1ALND00066	STRE	A	1	12.1	3/1/2017	\$1147,050	0.9%	C	Reddurn Branch E
HOI1ALND00037	STRE	A	1	26.4	3/1/2017	\$914,897	1.3%	C	Reddurn Branch Park
HOI1ALND00067	STRE	A	1	0.7	3/1/2017	\$50,000	0.0%	C	Davis Branch
HOI1ALND00093	STRE	A	1	33.1	3/1/2017	\$1,025,518	1.6%	C	Reddurn Branch G
HOI1ALND00077	STRE	A	1	1.6	6/13/2017	\$21,139.2	0.1%	C	HCC
HOI1ALND00095	STRE	A	1	19.9	9/11/2017	\$1,088,692	1.0%	C	Churchill Way
HOI1ALND00094	STRE	A	1	4.6	2/12/2018	\$1,283,855	0.2%	C	Dunbar Hill MS
HOI1ALND00099	STRE	A	1	22.6	2/12/2018	\$1,781,539	1.3%	C	Red Hill Way 2
HOI1ALND00011	STRE	A	1	25.3	3/1/2018	\$1,724,653	1.1%	C	Timbers at Troy
HOI1ALND00017	STRE	A	1	5.1	3/19/2018	\$327,859	0.3%	C	Headwaters
HOI1ALND00029	STRE	A	1	20.4	3/19/2018	\$959,860	1.0%	C	Longview Drive
HOI1ALND00035	STRE	A	1	15.3	4/30/2018	\$959,860	0.8%	C	Stirling Road
HOI1ALND00043	UGS	A	1	4.3	6/20/2018	\$712,680	0.2%	C	Woodrow Road
HOI1ALND00099	STRE	A	1	2.1	8/11/2018	\$50,000	0.1%	C	Tom Ows Outfall
HOI1ALND00027	WEDW	A	1	11.9	8/11/2018	\$1,088,830	0.6%	C	Parish Branch 1
HOI1ALND00020	WPNWS	A	1	2.1	6/8/2015	\$292,190	0.2%	C	TCO 13 Excelsior
HOI1ALND00032	WPNWS	A	1	3.3	6/24/2016	\$916,674	0.2%	C	Parish Branch 2
HOI1ALND00022	WPNWS	A	1	21.4	2/19/2014	\$718,740	1.4%	C	Shedow Lane
HOI1ALND00018	WPNWS	A	1	17.5	11/22/2016	\$880,332	0.9%	C	DESI North Lane
HOI1ALND00034	WPNWS	A	1	8.4	2/19/2016	\$589,515	0.4%	C	West North Way
HOI1ALND00035	WPNWS	A	1	1.6	6/1/2015	\$328,929	0.1%	C	Pinchus Sheldon Marsh
HOI1ALND00034	WPNWS	A	1	1.0	7/11/2014	\$399,255	0.3%	C	Chimney
HOI1ALND00034	WPNWS	A	1	6.3	1/24/2013	\$393,010	0.3%	C	Chimney
HOI1ALND00044	WPNWS	A	1	3.9	8/1/2010	\$165,335	0.2%	C	Van-Sumner
HOI1ALND00013	KOED	A	1	0.9	11/18/2014	\$341,335	0.0%	C	Oak Hill Pond Refill
HOI1ALND00041	KOED	A	1	0.1	9/1/2012	\$211,000	0.0%	C	Mount Vernon 1S
			100	948.7		\$54,063,579	47.2%		

Article 4-202.1(j)(1)(i): 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.

Other									
	FPU	A	31	9.9	2010	\$772,576	0.5%	C	2010 total
	FPU	A	84	27.5	2011	\$1,477,179	1.4%	C	2011 total
	FPU	A	51	20.6	2012	\$2,687,060	1.0%	C	2012 total
	FPU	A	709	23.4	2013	\$1,911,894	1.2%	C	2013 total
	FPU	A	437	20.4	2014	\$726,688	1.0%	C	2014 total
	FPU	A	524	34.7	2015	\$1,939,736	1.7%	C	2015 total
	FPU	A	34	6.4	2016	\$174,865	0.3%	C	2016 total
	FPU	A	42	19.1	2017	\$103,371	1.0%	C	2017 total
	FPU	A	17	5.0	2018	\$143,548	0.3%	C	2018 total
	SEPC	A	1	0.4	2015	\$0	0.0%	C	2015 total
	SEPC	A	7	2.7	2016	\$0	0.1%	C	2016 total
	SEPC	A	5	2.0	2017	\$15,700	0.1%	C	2017 total
	SEPC	A	9	3.5	2018	\$142,080	0.2%	C	2018 total
	SEPD	A	5	1.3	2011	\$0	0.1%	C	2011 total
	SEPD	A	2	0.5	2012	\$0	0.0%	C	2012 total
	SEPD	A	6	1.6	2013	\$0	0.1%	C	2013 total
	SEPD	A	69	17.9	2014	\$0	0.9%	C	2014 total
	SEPD	A	84	21.8	2015	\$0	1.1%	C	2015 total
	SEPD	A	45	11.7	2016	\$89,784	0.6%	C	2016 total
	SEPD	A	23	6.0	2017	\$41,760	0.3%	C	2017 total
	SEPP	A	1590	47.7	2014	\$0	2.4%	C	2014 total
	SEPP	A	1100	33.0	2015	\$0	1.6%	C	2015 total
	SEPP	A	1086	32.6	2016	\$0	1.6%	C	2016 total
	SEPP	A	1157	34.7	2017	\$0	1.7%	C	2017 total
	SEPP	A	365	11.0	2018	\$0	0.5%	C	2018 total
	MRWH	E	101	0.2	2010	\$2,828	0.0%	C	2010 total
	MRWH	E	125	0.2	2011	\$5,062	0.0%	C	2011 total
	MRWH	E	125	0.2	2012	\$4,000	0.0%	C	2012 total
	MRWH	E	226	0.4	2013	\$4,228	0.0%	C	2013 total
	MRWH	E	129	0.2	2014	\$4,096	0.0%	C	2014 total
	MRWH	E	121	0.2	2015	\$6,722	0.0%	C	2015 total
	MRWH	E	138	0.2	2016	\$6,916	0.0%	C	2016 total
	MRWH	E	100	0.2	2017	\$5,436	0.0%	C	2017 total
	MRWH	E	63	0.1	2018	\$2,520	0.0%	C	2018 total
	MRNG	E	1	0.2	2011	\$0	0.0%	C	2011 total
	MRNG	E	25	3.4	2012	\$7,964	0.2%	C	2012 total
	MRNG	E	87	9.0	2013	\$83,852	0.5%	C	2013 total
	MRNG	E	113	11.0	2014	\$234,360	0.5%	C	2014 total
	MRNG	E	135	12.3	2015	\$317,493	0.6%	C	2015 total
	MRNG	E	110	10.7	2016	\$113,657	0.5%	C	2016 total
	MRNG	E	90	7.3	2017	\$46,240	0.4%	C	2017 total
	MRNG	E	32	3.5	2018	\$7,148	0.2%	C	2018 total
HO17RST900499	APRP	E	2	0.2	5/25/2017	\$0	0.0%	C	
HO15RST901782	APRP	E	1	0.2	10/27/2015	\$0	0.0%	C	
HO18RST901581	APRP	E	1	0.2	9/3/2015	\$19,230	0.0%	C	
HO14RST900365	APRP	E	1	0.2	10/16/2014	\$0	0.0%	C	
HO14RST900364	APRP	E	1	0.2	10/16/2014	\$0	0.0%	C	
HO14RST900335	APRP	E	1	0.2	10/16/2014	\$0	0.0%	C	
HO14RST900334	APRP	E	1	0.2	10/16/2014	\$0	0.0%	C	
HO17RST900344	FBIO	S	2	0.0	12/10/2017	\$0	0.0%	C	
HO17RST900511	FBIO	S	1	0.3	7/1/2017	\$0	0.0%	C	Long Look Bioretention
HO17RST900494	FBIO	S	1	0.5	5/19/2017	\$0	0.0%	C	Green Leaf Community
HO17RST900405	FBIO	S	1	0.5	7/19/2016	\$12,170	0.0%	C	Lakeside Associates
HO16RST900404	FBIO	S	1	0.5	7/1/2016	\$0	0.0%	C	
HO16RST900333	FBIO	S	1	0.2	7/1/2016	\$0	0.0%	C	
HO16RST900332	FBIO	S	1	1.0	7/1/2016	\$0	0.1%	C	
HO16RST900331	FBIO	S	1	0.8	7/1/2016	\$0	0.0%	C	
HO16RST900330	FBIO	S	1	0.8	7/1/2016	\$0	0.0%	C	
HO16RST900312	FBIO	S	1	0.5	5/31/2016	\$133	0.0%	C	Seventh Day Bioretention
HO16RST900311	FBIO	S	1	0.5	5/31/2016	\$74	0.0%	C	Harvester Bioretention
HO16RST900310	FBIO	S	1	0.5	4/30/2016	\$47	0.0%	C	Bethel Bioretention 2
HO16RST900309	FBIO	S	1	2.5	4/30/2016	\$106	0.1%	C	Bethel Bioretention 1
HO14RST900368	FBIO	S	1	0.0	10/16/2014	\$0	0.0%	C	
HO14RST900367	FBIO	S	1	0.0	10/16/2014	\$0	0.0%	C	
HO14RST900338	FBIO	S	1	0.1	10/16/2014	\$0	0.0%	C	
HO14RST900336	FBIO	S	1	0.2	10/16/2014	\$0	0.0%	C	
HO11RST900342	FBIO	S	1	0.2	4/23/2011	\$0	0.0%	C	
HO17RST902158	FSND	S	1	1.8	11/10/2017	\$212,849	0.1%	C	Liberty Baptist
HO17RST900514	FSND	S	1	16.2	8/8/2017	\$478,652	0.8%	C	Howard Co General Hosplta
HO17RST902159	FSND	S	1	2.1	5/3/2017	\$308,499	0.1%	C	First Evangelical
HO12RST901982	FSND	S	1	2.2	3/15/2012	<Null>	0.1%	C	CRM Sand Filter
HO15RST900074	MIDW	E	1	0.2	10/15/2015	\$2,500	0.0%	C	Heritage Museum
HO18RST901733	MIDW	E	1	0.1	6/24/2015	\$2,700	0.0%	C	
HO18RST901793	MIDW	E	1	0.1	8/11/2014	\$10,440	0.0%	C	
HO17RST900012	MIMBR	E	1	0.2	3/17/2017	\$0	0.0%	C	
HO17RST900011	MIMBR	E	1	0.2	2/9/2017	\$0	0.0%	C	
HO17RST900010	MIMBR	E	1	0.2	2/9/2017	\$0	0.0%	C	
HO17RST900009	MIMBR	E	1	0.2	1/27/2017	\$0	0.0%	C	
HO16RST900008	MIMBR	E	1	0.2	11/5/2016	\$0	0.0%	C	
HO15RST900005	MIMBR	E	1	0.2	7/16/2015	\$0	0.0%	C	
HO15RST900393	MIMBR	E	1	0.2	6/30/2015	\$0	0.0%	C	
HO15RST900343	MIMBR	E	1	0.2	6/30/2015	\$0	0.0%	C	
HO17RST900501	MSWG	E	2	0.0	5/25/2017	\$0	0.0%	C	
HO14RST900366	ODSW	S	1	5.0	10/16/2014	\$0	0.2%	C	
HO14RST900337	ODSW	S	1	5.0	10/16/2014	\$0	0.2%	C	
HO16RST901515	PWED	S	1	1.6	10/5/2016	\$0	0.1%	C	
HO16RST901516	PWET	S	1	10.2	11/30/2016	\$0	0.5%	C	
HO16RST900033	PWET	S	1	2.8	4/22/2016	\$0	0.1%	C	
HO15RST900391	UGS	S	1	1.0	6/5/2015	\$0	0.0%	C	
HO17RST901517	WSHW	S	1	10.2	6/27/2017	\$0	0.5%	C	
To Date			9255	524.3		\$12,126,164	26.1%		
Total Complete to Date			9,643	1871.5		\$69,406,109	93.2%		

Check with MDE 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

Notes:

For street sweeping indicate the annual frequency that the streets are swept and for inlet cleaning indicate the number of inlets cleaned-out.

*IMPL COST is a summation and not an average.

Article 4-202.10(1)(b)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.

ARRP	Permeable Pavements
FAID	Bio-retention
FAND	Sand Filter
FAND	Underground Filter
IBAS	Infiltration Basin
IBPS	Impervious Surface Elimination (to previous)
IBPS	Dry Swale
MMAR	Micro-Bio-retention
MRBG	Rain Gardens
MSWB	Bio-Swale
MSWB	Grass Swale
OOSW	Dry Swale
WEDW	Extended Detention - Wetland
PWED	Extended Detention Structure, Wet
PWET	Retention Pond (Wet Pond)
WPPUS	Wet Pond - Wetland
WPPUS	Step Pool Storm Conveyance
SFPC	Underground Storage
UGS	Shallow Marsh
WASHW	Extended Detention Structure, Dry
XDED	Septic Pumping
SEPP	Septic Denitrification
SEPD	Septic Connections to WWTP
SEPC	Septic Connections to WWTP
MSS	Mechanical Street Sweeping
SDV	Storm Drain Vacuuming
PU	Planting Trees or Forestation on Previous Urban
STRE	Stream Restoration
OUT	Outlet Stabilization