

BARRY GLASSMAN
HARFORD COUNTY EXECUTIVE



JOSEPH J. SIEMEK, P.E.
DIRECTOR OF PUBLIC WORKS

September 30, 2021

Mr. Raymond Bahr
Water Management Administration
Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, Maryland 21230

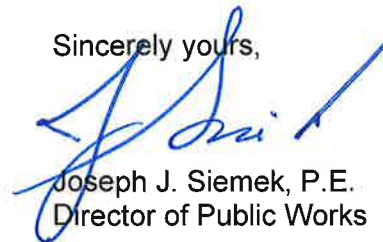
Dear Mr. Bahr:

Enclosed for your review, please find Harford County's updated documentation for consideration in developing the County's next MS4 permit. The updates are based on written comments provided by your office dated August 18, 2021 and discussion during a virtual meeting on August 24, 2021.

A thorough review of the County's physical and financial capacity has resulted in an increase in new restoration to 3% and a proposed nutrient trade for 2%.

Should you have any questions, or wish to discuss this submittal, please feel free to contact me at (410) 638-3285 or Christine Buckley at (410) 638-3217 extension 1176. Otherwise, we request to be copied on future MDE correspondence with EPA concerning the County's draft permit. Thank you.

Sincerely yours,



Joseph J. Siemek, P.E.
Director of Public Works

JJS/cmb *cmw*

Enclosures

cc: The Honorable Barry Glassman
B. Boniface
B. Lloyd
M. Hartka
S. Walsh
C. Buckley
C. Lyerly (MDE)

MARYLAND'S NEW CENTER OF OPPORTUNITY

410.638.3285 | 410.879.2000 | TTY Maryland Relay 711 | www.harfordcountymd.gov

212 S. Bond Street, Bel Air, Maryland 21014

THIS DOCUMENT IS AVAILABLE IN ALTERNATIVE FORMAT UPON REQUEST

**Restoration Projects To Be Planned, Designed, and/or Constructed From The End Of 4th Generation Permit Through FY 2031
HARFORD COUNTY**

Remaining Unmet Restoration Obligation from Previous Permit (Impervious Acres):	0
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REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	PERMANENT OR ANNUAL BMP	NUM BMP	DRAINAGE AREA (acres)	PE (inches)	LENGTH RESTORED (feet)/ LANE MILES (miles)/ MASS LOADING (lbs)	TP REDUCTION (lbs/year)	TSS REDUCTION (lbs/year)	TN ⁶ REDUCTION (lbs/year)	IMP ACRES (IA)	GREEN STORMWATER INFRASTRUCTURE (GSI) CREDIT (IA X 0.35)	WATERSHED MANAGEMENT (WM) CREDIT	TOTAL IMP ACRES (W/ GSI AND WM CREDITS)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR (Fiscal Year)	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS ⁷
Remaining Unmet Restoration Obligations from Previous Permit																			
Annual Operational Programs (Unmet Obligations from Previous Permit)^{3,4}																			
Street Sweeping*		A	ANNUAL	0										0.0					The County does not plan any street sweeping to meet its obligation under the previous permit.
Catch Basin Cleaning*		A	ANNUAL	0										0.0					The County does not plan any catch basin cleaning to meet its obligation under the previous permit.
Septic System Pumping		A	ANNUAL	0										0.0					The County does not plan any additional septic pumping to meet its obligation under the previous permit.
Subtotal Operations ³				0				0.0	0	0.0	0.0			0.0	\$0				
Capital Projects (Unmet Obligations from Previous Permit Term)																			
Subtotal Capital				0				0.0	0	0.0	0.0	0	0	0.0	\$0				
Other (Unmet Obligations from Previous Permit Term)																			
Subtotal Other				0				0.0	0	0.0	0.0	0	0	0.0	\$0				
Total of Remaining Obligations from The Previous Permit				0				0.0	0	0.0	0.0	0	0	0.0	\$0				
Obligations from Previous Permit That Must Be Continued																			
Annual Operational Programs Required to be Maintained from Previous Permit^{5,4}																			
Septic System Pumping	SEPP	A	ANNUAL	4,516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Complete	2020		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Under Construction	2021		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Under Construction	2022		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Planning	2023		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Planning	2024		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Planning	2025		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Planning	2026		2014 Account Document credits

Septic System Pumping	SEPP	A	ANNUAL	4516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Planning	2027		2014 Account Document credits
Septic System Pumping	SEPP	A	ANNUAL	4,516	N/A	N/A	N/A	0.0	0	0.0	135.5			135.5	\$0	Planning	2028		2014 Account Document credits
Subtotal Operations ³				4,516				0.0	0	0.0	135.5			135.5	\$0				
Capital Projects (Proposed to Replace Annual Obligations)																			
HA20ALN000018	STRE	A	PERMANENT	1	N/A	N/A	2,028	517.0	986,000	1,363.0	143.3			143.3	\$2,000,000	Complete	2020		
WP000033	STRE	A	PERMANENT	1	N/A	N/A	147	10.0	36,456	11.0	2.9			2.9	\$0	Complete	2020		Cost included above
WP000033	STRE	A	PERMANENT	1	N/A	N/A	266	18.1	65,968	20.0	5.3			5.3	\$0	Complete	2020		Cost included above
WP000033	IBAS	S	PERMANENT	1	10.3	3.1	N/A	4.8	2,679	50.9	3.3			3.3	\$0	Complete	2020		Cost included above
WP000033	PWET	S	PERMANENT	1	8.6	1.6	N/A	3.2	1,780	33.7	2.2			2.2	\$0	Complete	2020		Cost included above
WP000033	WPWS	S	PERMANENT	1	44.8	0.5	N/A	14.7	8,333	141.1	6.6			6.6	\$0	Complete	2020		Cost included above
WP000039	STRE	A	PERMANENT	1	N/A	N/A	2,512	170.8	623,060	188.4	75.4			75.4	\$3,300,000	Complete	2020		
WP000039	STRE	A	PERMANENT	1	N/A	N/A	242	16.5	60,016	18.2	7.3			7.3	\$0	Complete	2020		Cost included above
WP000039	PWET	S	PERMANENT	1	13.9	0.9	N/A	4.4	4,500	57.3	6.2			6.2	\$0	Complete	2020		Cost included above
WP000039	FBIO	S	PERMANENT	1	5.8	0.4	N/A	1.6	900	15.6	0.6			0.6	\$0	Complete	2020		Cost included above
WP000039	WPWS	S	PERMANENT	1	3.5	0.2	N/A	1.0	620	6.9	0.4			0.4	\$0	Complete	2020		Cost included above
WP000039	PWET	S	PERMANENT	1	8.3	1.1	N/A	2.6	1,280	31.9	1.1			1.1	\$0	Complete	2020		Cost included above
WP000039	WPWS	S	PERMANENT	1	6.2	1.1	N/A	1.9	1,120	17.4	1.5			1.5	\$0	Complete	2020		Cost included above
WP000105	UTC	A	PERMANENT	1	N/A	N/A	N/A	0.5	84	3.2	0.3			0.3	\$100,000	Complete	2020		
WP000104	MMBR	E	PERMANENT	1	0.5	1.4	N/A	0.4	280	2.6	0.5			0.5	\$200,000	Complete	2020		
WP000085	STRE	A	PERMANENT	1	N/A	N/A	975	216.0	412,000	495.0	58.5			58.5	\$800,000	Complete	2021		
	SEPC	A	PERMANENT	9	N/A	N/A	N/A	0.0	0	0.0	3.5			3.5	\$40,500	Under Construction	2021		2014 Account Document credits, \$4,500 credit per tank from MS4 office
WP000014	STRE	A	PERMANENT	1	N/A	N/A	1,569	106.7	389,112	117.7	31.4			31.4	\$1,500,000	Under Construction	2022		
WP000037	STRE	A	PERMANENT	1	N/A	N/A	1,550	32.0	458,800	255.0	28.5			28.5	\$1,000,000	Under Construction	2022		
WP000037	STRE	A	PERMANENT	1	N/A	N/A	410	27.9	101,680	30.8	8.2			8.2	\$0	Under Construction	2022		Cost included above
WP000091	STRE	A	PERMANENT	1	N/A	N/A	3,878	326.0	112,200	1,182.0	75.2			75.2	\$1,900,000	Under Construction	2022	Bynum Run TMDL for Sediment	
	SEPC	A	PERMANENT	10	N/A	N/A	N/A	0.0	0	0.0	2.3			2.3	\$45,000	Planning	2022		Draft 2020 Account Document credits, \$4,500 credit per tank from MS4 office

WP000102	FBIO	S	PERMANENT	1	3.4	1.1	N/A	1.2	900	13.4	1.5			1.5	\$400,000	Under Construction	2022		
WP000108	FBIO	S	PERMANENT	1	2.1	1.2	N/A	0.8	520	8.3	1.7			1.7	\$400,000	Design	2022	Bynum Run TMDL for Sediment	
WP000109	MSGW	S	PERMANENT	1	3.2	1.2	N/A	1.2	820	13.2	1.5			1.5	\$400,000	Design	2022	Bynum Run TMDL for Sediment	
WP000110	PWET	S	PERMANENT	1	20.3	1.2	N/A	7.5	5,080	81.8	7.3			7.3	\$500,000	Design	2022	Bynum Run TMDL for Sediment	
WP000021	STRE	A	PERMANENT	1	N/A	N/A	4,755	323.3	1,179,240	356.6	95.1			95.1	\$2,400,000	Design	2023	Bynum Run TMDL for Sediment	Credits based on planning rates
WP000043	STRE	A	PERMANENT	1	N/A	N/A	2,548	173.3	631,904	191.1	51.0			51.0	\$2,800,000	Design	2023		Credits based on planning rates
WP000043	STRE	A	PERMANENT	1	N/A	N/A	156	10.6	38,688	11.7	3.1			3.1	\$0	Design	2023		Cost included above
WP000043	STRE	A	PERMANENT	1	N/A	N/A	198	13.5	49,104	14.9	4.0			4.0	\$0	Design	2023		Cost included above
WP000043	STRE	A	PERMANENT	1	N/A	N/A	139	9.5	34,472	10.4	2.8			2.8	\$0	Design	2023		Cost included above
WP000043	STRE	A	PERMANENT	1	N/A	N/A	149	10.1	36,952	11.2	3.0			3.0	\$0	Design	2023		Cost included above
WP000043	STRE	A	PERMANENT	1	N/A	N/A	120	8.2	29,760	9.0	2.4			2.4	\$0	Design	2023		Cost included above
WP000043	STRE	A	PERMANENT	1	N/A	N/A	157	10.7	38,936	11.8	3.1			3.1	\$0	Design	2023		Cost included above
WP000089	STRE	A	PERMANENT	1	N/A	N/A	600	40.8	148,800	45.0	12.0			12.0	\$0	Design	2023		Cost included above, Credits based on planning rates
WP000089	FBIO	S	PERMANENT	1	7.6	1.6	N/A	3.8	2,200	57.0	3.3			3.3	\$400,000	Design	2023		
WP000107	STRE	A	PERMANENT	1	N/A	N/A	2,200	149.6	545,600	165.0	44.0			44.0	\$1,000,000	Design	2023	Loch Raven TMDL for Phosphorus	Credits based on planning rates
	SEPC	A	PERMANENT	10	N/A	N/A	N/A	0.0	0	0.0	2.3			2.3	\$45,000	Planning	2023		Draft 2020 Account Document credits, \$4,500 credit per tank from MS4 office
WP000034	STRE	A	PERMANENT	1	N/A	N/A	2,170	147.6	538,160	162.8	43.4			43.4	\$2,000,000	Design	2023		Credits based on planning rates
WP000034	MSGW	S	PERMANENT	1	6.0	1.0	N/A	2.1	1,480	23.3	3.9			3.9	\$0	Design	2023		Cost included above
WP000034	ITRN	S	PERMANENT	1	0.9	1.2	N/A	0.5	260	6.6	0.4			0.4	\$0	Design	2023		Cost included above
WP000097	STRE	A	PERMANENT	1	N/A	N/A	1,679	114.2	416,392	125.9	33.6			33.6	\$1,300,000	Design	2024	Bynum Run TMDL for Sediment	Credits based on planning rates
WP000100	STRE	A	PERMANENT	1	N/A	N/A	3,500	238.0	868,000	262.5	70.0			70.0	\$1,500,000	Design	2024		Credits based on planning rates
WP000100	PPKT	S	PERMANENT	1	8.1	0.5	N/A	2.3	1,540	25.2	0.8			0.8	\$0	Design	2024		Cost included above
	SEPC	A	PERMANENT	10	N/A	N/A	N/A	0.0	0	0.0	2.3			2.3	\$45,000	Planning	2024		Draft 2020 Account Document credits, \$4,500 credit per tank from MS4 office
	CLTM	A	PERMANENT	7.0	N/A	N/A	N/A	3.7	0	36.7	2.6			2.6	\$142,450	Planning	2024		
	FPU	A	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,050	111.2	11.0			11.0	\$605,000	Planning	2024		
	UTC	A	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,060	32.0	2.8			2.8	\$154,000	Planning	2024		

Catch Basin Cleaning		A	ANNUAL															
Septic System Pumping		A	ANNUAL															
Subtotal Operations (up to 2026) ⁵				0				0.0	0	0.0	0.0			0.0	\$0			
Capital Projects																		
	CLTM	A	PERMANENT	8.0	N/A	N/A	N/A	4.2	0	41.9	3.0			3.0	\$162,800	Planning	2026	
	FPU	A	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,050	111.2	11.0			11.0	\$605,000	Planning	2026	
	UTC	A	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,060	32.0	2.8			2.8	\$154,000	Planning	2026	
	PWET	S	PERMANENT	2.0	TBD	TBD	N/A	TBD	TBD	TBD	4.0			4.0	\$400,000	Planning	2026	
	SEPC	A	PERMANENT	10	N/A	N/A	N/A	0.0	0	0.0	2.3			2.3	\$45,000	Planning	2027	
	STRE	A	PERMANENT	3.0	N/A	N/A	10,500	714.0	2,604,000	787.5	210.0			210.0	\$5,250,000	Planning	2027	
	CLTM	A	PERMANENT	8.0	N/A	N/A	N/A	4.2	0	41.9	3.0			3.0	\$162,800	Planning	2027	
	FPU	A	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,050	111.2	11.0			11.0	\$605,000	Planning	2027	
	UTC	A	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,060	32.0	2.8			2.8	\$154,000	Planning	2027	
	PWET	S	PERMANENT	2.0	TBD	TBD	N/A	TBD	TBD	TBD	4.0			4.0	\$400,000	Planning	2027	
	STRE	A	PERMANENT	3.0	N/A	N/A	10,500	714.0	2,604,000	787.5	210.0			210.0	\$5,250,000	Planning	2028	
	CLTM	A	PERMANENT	8.0	N/A	N/A	N/A	4.2	0	41.9	3.0			3.0	\$162,800	Planning	2028	
	FPU	A	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,050	111.2	11.0			11.0	\$605,000	Planning	2028	
	UTC	A	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,060	32.0	2.8			2.8	\$154,000	Planning	2028	
	PWET	S	PERMANENT	2.0	TBD	TBD	N/A	TBD	TBD	TBD	4.0			4.0	\$400,000	Planning	2028	
	STRE	A	PERMANENT	3.0	N/A	N/A	10,500	714.0	2,604,000	787.5	210.0			210.0	\$5,250,000	Planning	2029	
	CLTM	A	PERMANENT	8.0	N/A	N/A	N/A	4.2	0	41.9	3.0			3.0	\$162,800	Planning	2029	
	FPU	A	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,050	111.2	11.0			11.0	\$605,000	Planning	2029	
	UTC	A	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,060	32.0	2.8			2.8	\$154,000	Planning	2029	
	PWET	S	PERMANENT	2.0	TBD	TBD	N/A	TBD	TBD	TBD	4.0			4.0	\$400,000	Planning	2029	
	STRE	A	PERMANENT	4.0	N/A	N/A	14,000	952.0	3,472,000	1,050.0	280.0			280.0	\$7,000,000	Planning	2030	
	STRE	A	PERMANENT	4.0	N/A	N/A	14,000	952.0	3,472,000	1,050.0	280.0			280.0	\$7,000,000	Planning	2031	

Subtotal Capital (up to 2027)			73				768.1	2,664,220	1,157.7	253.8	0	0	253.8	\$7,938,600				
Other																		
Trade													220.0					
													0.0					
Subtotal Other (up to 2027)			0				0.0	0	0.0	0.0	0	0	220.0	\$0				
Total for Next Permit (up to 2027)			73				768.1	2,664,220	1,157.7	253.8	0.0	0.0	473.8	\$7,938,600				
Remaining Unmet Restoration Obligations from Previous Permit																		
							0.0	0	0.0	0.0	0.0	0.0	0.0	\$0				
Obligations from Previous Permit That Must Be Continued							4,260.7	11,376,276	8,946.0	1,448.4	0.0	0.0	1,448.4	\$34,868,400				
Proposed Restoration for the Next Permit							768.1	2,664,220	1,157.7	253.8	0.0	0.0	473.8	\$7,938,600				

NOTE - I added the 3 rows above as the links below were broken and made sense for reviewing purposes

Total for Next Permit and Projected Years																		
			147				4,154.2	14,876,440	5,203.0	1,275.3	0.0	0.0	1,495.3	\$35,082,200				
Total for Remaining Obligations from The Previous Permit, Continued Obligations, and Proposed Activities for The Next Permit (up to 2027)																		
			4,752				5,028.8	14,040,496	10,103.7	1,702.2	0.0	0.0	1,922.2	\$42,807,000				
Total for Remaining Obligations from The Previous Permit, Continued Obligations, and Proposed Activities for The Next Permit (up to 2031)																		
			4,826				8,414.9	26,252,716	14,149.0	2,723.7	0.0	0.0	2,723.7	\$69,950,600				

Baseline	10927.7	218.554
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Credits	Trade
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-1215.1	Nutrient Trade 2020
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-17.9	Shortage septic pump
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-1233.0

	2020	256.8	-976.2	
	2021	62.0	-914.2	
	2022	157.5	-756.7	
1	2023	273.7	-483.0	
2	2024	127.1	-355.9	
3	2025	293.5	-62.4	
4	2026	163.1	100.7	
5	2027	233.1	333.7	3.1%

1566.7

135.5

1702.2

MDE Comment - The Department requests that the County clarify whether the portfolio is based on calendar or fiscal year.

HC Reply - The title of the portfolio has been updated to reflect that it is based on the fiscal year.

MDE Comment - The County did not include continued nutrient trading that must be maintained until the BMPs are completed to replace decreased septic pumping and trading credits acquired to meet the previous permit's requirements.

HC Reply - Nutrient trades have been added but are based on the fiscal year for planning purposes. Actual trades will be based on the calendar year as required.

MDE Comment - The County needs to confirm that trades have been or are in the process of being completed for 2020.

HC Reply - Trading documents were submitted to MDE 9/22/2021.

MDE Comment - The new restoration total in the checklist slightly differs from the total in the Project Portfolio because the acres in the replacement BMP was 1.6 acres short of required replacement.

HC Reply - Updates to the three stream restoration projects and adjusting the SPSCs to STRM has increased the restoration where there is no longer a shortage.

MDE Comment - The Department would like to discuss with the County potential opportunities to use the GSI, WM credits, shoreline management projects or new BMPs in the Accounting Guidance.

HC Reply - The County has not used a conservative approach to projecting potential future credits as these new extra credits have not been fully vetted for actual projects.

MDE Comment - There is a stream restoration under the replacement BMPS for complete in 2027. There is a stream restoration under the new BMPs with a completion year of 2026.

HC Reply - The County has switched these two projects within the spreadsheet.

MDE Comment - SPSC will no longer be an available code because it is a type of stream restoration.

HC Reply - The County has updated the credits for the SPSC as stream restorations as shown below.

		SPSC (IA)	STRM (FT)	STRM (IA)
Willoughby Beach	WP000033	0.3	147	2.94
Willoughby Beach	WP000033	0.3	266	5.32
Barrington	WP000039	0.7	242	7.26

* Upstream BMP increases from 2.0 to 2.2 as the downstream BMP in the treatment train is now treated as stream restoration

* Upstream BMP Increases from 1.0 to 1.1 as the downstream BMP in the treatment train is now treated as stream restoration

Stillmeadow	WP000037	5.5	410	8.2
Declaration	WP000043	0.8	156	3.12
Declaration	WP000043	0.4	198	3.96
Declaration	WP000043	0.4	139	2.78
Declaration	WP000043	1.0	149	2.98
Declaration	WP000043	0.8	120	2.4
Declaration	WP000043	0.4	157	3.14
Total		10.4		42.1

MDE Comment - Three stream restorations have equivalent impervious acres that cannot be confirmed by either the planning rate or protocols.

HC Reply - Credits and loads have been updated as shown below.

	Stream	Length	Original					Update			
			TP	TSS	TN	IA (reported)	IA (calculated)	TP	TSS	TN	IA
Stillmeadow	WP000037	1,550	32.0	510,200	255.1	12.1	30.6	32.0	458,800	255	28.5
CMW	WP000091	3,878	326.5	112,200	1,182.0	124.0	75.2	326.0	112,200	1182	75.2
Fallston MS / HS	WP000101	6,371	978.8	1,740,000	2,306.9	178.9	260.9	978.0	1,740,380	2306	260.8
Total						315.0					364.5

* IA was calculated incorrectly, TSS updated per design report

* IA was calculated incorrectly

* IA was calculated incorrectly

MDE Comment - The Department requests that the County provide example calculations where extra treatment was claimed for upland stormwater retrofits that have a PE greater than 1", if applicable.

HC Reply - Examples are attached

MDE Comment - The Department requests that the County submit an updated Financial Capacity Spreadsheet that reflects the Recordation Tax and add a note in the spreadsheet.

HC Reply - This tax is not associated with a cost per household related to stormwater. It is simply a revenue source. No note has been added.

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

BMP Classification	BMP Type Code	BMP Type
Alternative Surfaces (A)		
E	AGRE	Green Roof – Extensive
E	AGRI	Green Roof – Intensive
E	APRP	Permeable Pavements
E	ARTF	Reinforced Turf
Nonstructural Techniques (N)		
E	NDRR	Disconnection of Rooftop Runoff
E	NDNR	Disconnection of Non-Rooftop Runoff
E	NSCA	Sheetflow to Conservation Areas
Micro-Scale Practices (M)		
E	MRWH	Rainwater Harvesting
E	MSGW	Submerged Gravel Wetlands
E	MILS	Landscape Infiltration
E	MIBR	Infiltration Berms
E	MIDW	Dry Wells
E	MMBR	Micro-Bioretenion
E	MRNG	Rain Gardens
E	MSWG	Grass Swale
E	MSWW	Wet Swale
E	MSWB	Bio-Swale
E	MENF	Enhanced Filters
Ponds (P)		
S	PWED	Extended Detention Structure, Wet
S	PWET	Retention Pond (Wet Pond)
S	PMPS	Multiple Pond System
S	PPKT	Pocket Pond
S	PMED	Micropool Extended Detention Pond
Wetlands (W)		
S	WSHW	Shallow Marsh
S	WEDW	ED – Wetland
S	WPWS	Wet Pond – Wetland
S	WPKT	Pocket Wetland
Infiltration (I)		
S	IBAS	Infiltration Basin
S	ITRN	Infiltration Trench
Filtering Systems (F)		
S	FBIO	Bioretention
S	FSND	Sand Filter
S	FUND	Underground Filter
S	FPER	Perimeter (Sand) Filter
S	FORG	Organic Filter (Peat Filter)
S	FBIO	Bioretention
Open Channels (O)		
S	ODSW	Dry Swale
S	OWSW	Wet Swale
Other Practices (X)		
S	XDPD	Detention Structure (Dry Pond)
S	XDED	Extended Detention Structure, Dry
S	XFLD	Flood Management Area
S	XOGS	Oil Grit Separator
S	XOTH	Other
Alternative BMPs		
A	MSS	Mechanical Street Sweeping
A	VSS	Regenerative/Vacuum Street Sweeping (i.e., Advanced Street Sweeping)
A	IMPP	Impervious Surface Reduction (i.e., impervious to pervious)
A	IMPF	Impervious Surface to Forest (i.e., IMPP + FPU)
A	FPU	Forestation on Pervious Urban (i.e., Forest Planting)
A	CBC	Catch Basin Cleaning

A	SDV	Storm Drain Vacuuming
A	STRE	Stream Restoration
A	OUT	Outfall Stabilization
A	SPSC	Regenerative Step Pool Storm Conveyance
A	SPSD	Dry Channel Regenerative Step Pool Stormwater Conveyance System
A	SHST	Shoreline Management
A	SEPP	Septic Pumping
A	SEPD	Septic Denitrification
A	SEPC	Septic Connections to WWTP
A	XFTW	Floating Treatment Wetland
A	FCO	Forest Conservation
A	CLTM	Conservation Landscaping
A	RCL	Riparian Conservation Landscaping
A	RFP	Riparian Forest Planting
A	STCI	Street Tree
A	USRP	Urban Soil Restoration (Compacted Pervious Surfaces)
A	USRI	Urban Soil Restoration (Removed Impervious Surfaces)
A	UTC	Urban Tree Canopy (i.e., Pervious Turf to Tree Canopy over Turf)
A	IDDE	Illicit Discharge Detection & Elimination
A	OTH	Other

MDE Comment - The Department requests that the County clarify whether the portfolio is based on calendar or fiscal year.

HC Reply - The title of the portfolio has been updated to reflect that it is based on the fiscal year.

MDE Comment - The County did not include continued nutrient trading that must be maintained until the BMPs are completed to replace decreased septic pumping and trading credits acquired to meet the previous permit's requirements.

HC Reply - Nutrient trades have been added but are based on the fiscal year for planning purposes. Actual trades will be based on the calendar year as required.

MDE Comment - The County needs to confirm that trades have been or are in the process of being completed for 2020.

HC Reply - Trading documents were submitted to MDE 9/22/2021.

MDE Comment - The new restoration total in the checklist slightly differs from the total in the Project Portfolio because the acres in the replacement BMP was 1.6 acres short of required replacement.

HC Reply - Updates to the three stream restoration projects and adjusting the SPSCs to STRM has increased the restoration where there is no longer a shortage.

MDE Comment - The Department would like to discuss with the County potential opportunities to use the GSI, WM credits, shoreline management projects or new BMPs in the Accounting Guidance.

HC Reply - The County has not used a conservative approach to projecting potential future credits as these new extra credits have not been fully vetted for actual projects.

MDE Comment - There is a stream restoration under the replacement BMPS for complete in 2027. There is a stream restoration under the new BMPs with a completion year of 2026.

HC Reply - The County has switched these two projects within the spreadsheet.

MDE Comment - SPSC will no longer be an available code because it is a type of stream restoration.

HC Reply - The County has updated the credits for the SPSC as stream restorations as shown below.

		SPSC (IA)	STRM (FT)	STRM (IA)
Willoughby Beach	WP000033	0.3	147	2.94
Willoughby Beach	WP000033	0.3	266	5.32
Barrington	WP000039	0.7	242	7.26
Stillmeadow	WP000037	5.5	410	8.2
Declaration	WP000043	0.8	156	3.12
Declaration	WP000043	0.4	198	3.96
Declaration	WP000043	0.4	139	2.78
Declaration	WP000043	1.0	149	2.98
Declaration	WP000043	0.8	120	2.4
Declaration	WP000043	0.4	157	3.14
Total		10.4		42.1

* Upstream BMP increases from 2.0 to 2.2 as the downstream BMP in the treatment train is now treated as stream restoration

* Upstream BMP Increases from 1.0 to 1.1 as the downstream BMP in the treatment train is now treated as stream restoration

MDE Comment - Three stream restorations have equivalent impervious acres that cannot be confirmed by either the planning rate or protocols.

HC Reply - Credits and loads have been updated as shown below.

		Original						Update			
	Stream	Length	TP	TSS	TN	IA (reported)	IA (calculated)	TP	TSS	TN	IA
	Stillmeadow	1,550	32.0	510,200	255.1	12.1	30.6	32.0	458,800	255	28.5
	CMW	3,878	326.5	112,200	1,182.0	124.0	75.2	326.0	112,200	1182	75.2
	Fallston MS / HS	6,371	978.8	1,740,000	2,306.9	178.9	260.9	978.0	1,740,380	2306	260.8
Total						315.0					364.5

* IA was calculated incorrectly, TSS updated per design report

* IA was calculated incorrectly

* IA was calculated incorrectly

MDE Comment - The Department requests that the County provide example calculations where extra treatment was claimed for upland stormwater retrofits that have a PE greater than 1", if applicable.

HC Reply - Examples are attached

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HC Reply - This tax is not associated with a cost per household related to stormwater. It is simply a revenue source. No note has been added.

	Linear Ft Restored	Lbs Reduced / Linear Ft ¹			TSS Annual Load Reduction (tons)	Acre/LF ² 0.03 Impervious Acre Equivalent
		TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (lbs)		
Winter's Run Tributaries Stream Restoration	3258	244.35	221.54	807,984	403.99	97.74

¹From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

²From 4-30-2019 MDE Memo

	Linear Ft Restored	Lbs Reduced / Linear Ft ¹			TSS Annual Load Reduction (tons)	Acre/LF ²
		TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (lbs)		
		0.075	0.068	248		0.03
Stream Restoration	700	52.50	47.60	173,600	86.80	21.00

¹From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

²From 4-30-2019 MDE Memo

³See MDE 2014 report, Table 3

⁴See MDE 2014 report, Table A.1

⁵See MDE 2014, Table 2.E

Facility	DA Total (acres)	DA Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	WQv Required (cubic feet)	WQv Provided (acre-feet)	WQv Provided (cubic feet)	Pe Equivalent (inches)	Equivalent Credit per Acre ³	Total Credit (acres)	TN Annual Load (lbs) ⁴	TN Annual Load Reduction (lbs) ⁵	TP Annual Load (lbs) ⁴	TP Annual Load Reduction (lbs) ⁵	TSS Annual Load (tons) ⁴	TSS Annual Load Reduction (tons) ⁵
SWM Pond	13.88	7.00	0.50	0.50	0.58	25,388	0.51	22,433	0.88	0.88	6.19	181.40	57.32	8.87	4.40	3.56	2.25

Facility	DA Total (acres)	DA Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	WQv Required (cubic feet)	WQv Provided (acre-feet)	WQv Provided (cubic feet)	Pe Equivalent (inches)	Equivalent Credit per Acre ³	Total Credit (acres)	TN Annual Load (lbs) ⁴	TN Annual Load Reduction (lbs) ⁵	TP Annual Load (lbs) ⁴	TP Annual Load Reduction (lbs) ⁵	TSS Annual Load (tons) ⁴	TSS Annual Load Reduction (tons) ⁵
Bioretention	5.77	1.65	0.29	0.31	0.15	6,438	0.05	2,351	0.37	0.37	0.60	69.74	15.59	4.56	1.59	1.01	0.45

Facility	DA Total (acres)	DA Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	WQv Required (cubic feet)	WQv Provided (acre-feet)	WQv Provided (cubic feet)	Pe Equivalent (inches)	Equivalent Credit per Acre ³	Total Credit (acres)	TN Annual Load (lbs) ⁴	TN Annual Load Reduction (lbs) ⁵	TP Annual Load (lbs) ⁴	TP Annual Load Reduction (lbs) ⁵	TSS Annual Load (tons) ⁴	TSS Annual Load Reduction (tons) ⁵
SWM Wetland	3.50	2.28	0.65	0.64	0.19	8,084	0.04	1,530	0.19	0.19	0.43	48.06	6.94	4.38	0.96	1.09	0.31

	Linear Ft Restored	Lbs Reduced / Linear Ft ¹			TSS Annual Load Reduction (tons)	Acre/LF ²
		TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (lbs)		
		0.075	0.068	248		0.03
Stream Restoration	1812	135.92	123.24	449,453	224.73	54.37

¹From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

²From 4-30-2019 MDE Memo

³See MDE 2014 report, Table 3

⁴See MDE 2014 report, Table A.1

⁵See MDE 2014, Table 2.E

Facility	DA Total (acres)	DA Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	WQv Required (cubic feet)	WQv Provided (acre-feet)	WQv Provided (cubic feet)	Pe Equivalent (inches)	Equivalent Credit per Acre ³	Total Credit (acres)	TN Annual Load (lbs) ⁴	TN Annual Load Reduction (lbs) ⁵	TP Annual Load (lbs) ⁴	TP Annual Load Reduction (lbs) ⁵	TSS Annual Load (tons) ⁴	TSS Annual Load Reduction (tons) ⁵
SWM Pond #2	8.33	0.97	0.12	0.15	0.11	4,681	0.12	5,169	1.10	1.03	0.99	94.33	31.88	4.80	2.56	0.94	0.64

0.99526289

Facility	DA Total (acres)	DA Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	WQv Required (cubic feet)	WQv Provided (acre-feet)	WQv Provided (cubic feet)	Pe Equivalent (inches)	Equivalent Credit per Acre ³	Total Credit (acres)	TN Annual Load (lbs) ⁴	TN Annual Load Reduction (lbs) ⁵	TP Annual Load (lbs) ⁴	TP Annual Load Reduction (lbs) ⁵	TSS Annual Load (tons) ⁴	TSS Annual Load Reduction (tons) ⁵
SWM Wetland	6.19	2.15	0.35	0.36	0.19	8,148	0.14	6,077	0.75	0.75	1.60	76.53	25.99	5.37	2.87	1.23	0.84

	Linear Ft Restored	Lbs Reduced / Linear Ft ¹			TSS Annual Load Reduction (tons)	Acre/LF ²
		TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (lbs)		
		0.075	0.068	248		0.03
SPSC Outfall C	242	18.15	16.46	60,016	30.01	7.26

¹From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

²From 4-30-2019 MDE Memo

Facility	DA Total (acres)	DA Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	WQv Required (cubic feet)	WQv Provided (acre-feet)	WQv Provided (cubic feet)	Pe Equivalent (inches)	Total Credit (acres)*	TN Annual Load (lbs) ⁴	TN Annual Load Reduction (lbs) ⁵	TP Annual Load (lbs) ⁴	TP Annual Load Reduction (lbs) ⁵	TSS Annual Load (tons) ⁴	TSS Annual Load Reduction (tons) ⁵
Micro Bioretention	0.48	0.44	0.92	0.88	0.04	1,525	0.05	2,081	1.36	0.65	7.16	2.57	0.76	0.43	0.20	0.14

³See MDE 2014 report, Table 3

⁴See MDE 2014 report, Table A.1

⁵See MDE 2014, Table 2.E

*Includes GSI

		IA Credit/Ac of Tree Planting ¹	Lbs Reduced / Acre ¹			
	0.01	0.28	3.18	0.51	82	
	Total Trees	Acres of Tree Planting	TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (lbs)	
		Total Credit (acres)				
Urban Tree Canopy Planting	102	1.02	0.29	3.24	0.52	83.64

¹ 2019 MDE Memo, Table 9

	Linear Ft Restored	Lbs Reduced / Linear Ft ¹			TSS Annual Load Reduction (tons)	Acre/LF ²
		0.075 TN Annual Load Reduction (lbs)	0.068 TP Annual Load Reduction (lbs)	248 TSS Annual Load Reduction (lbs)		0.03 Impervious Acre Equivalent
Unnamed Tributary to	286	21.45	19.45	70,928	35.46	8.58

¹From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

²From 4-30-2019 MDE Memo

