

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

**BARRY GLASSMAN** 

HARFORD COUNTY EXECUTIVE

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 you

Director of Public Works

JJS/cmb 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

							LENGTH												
REST BMP ID	REST BMP TYPE <sup>1</sup>	BMP CLASS <sup>1</sup>	PERMANENT OR ANNUAL BMP	NUM BMP	DRAINAGE ARE (acres)	A PE (inches)	RESTORED (feet)/	TP REDUCTION (lbs/year)	TSS REDUCTION (lbs/year)	TN <sup>6</sup> REDUCTION (Ibs/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 <sup>2</sup>	PROJECTED IMPLEMENTATION YEAR (Fiscal Year)	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS <sup>7</sup>
		<u> </u>							Remair	ning Unmet R	estoration O	bligations from	n Previous Permi	t		•			
Annual Operational Programs (Un	nmet Obligations from P	revious Perm	it) <sup>3</sup> ,4																
Street Sweeping*		А	ANNUAL	0										0.0					The County does not plan any street swe to meet its obligation under the previ- permit.
Catch Basin Cleaning*		А	ANNUAL	0										0.0					The County does not plan any catch ba cleaning to meet its obligation under previous permit.
Septic System Pumping		А	ANNUAL	0										0.0					The County does not plan any additional pumping to meet its obligation under previous permit.
Subtotal Operations <sup>3</sup>				0				0.0	0	0.0	0.0			0.0	\$0				
Capital Projects (Unmet Obligatio	ns from Previous Permi	t Term)																	
Subtotal Capital				0				0.0	0	0.0	0.0	0	0	0.0	\$0				
Other (Unmet Obligations from P	revious Permit Term)								-										
														0.0					
Subtotal Other				0				0.0	0	0.0	0.0	0	0	0.0	\$0				
Total of Remaining Obligations fr	om The Previous Permit			0				0.0	0	0.0	0.0	0	0	0.0	\$0				
				999					Obli	igations from	Previous Pe	rmit That Must	t Be Continued			T nasionalisi da anti anti anti anti anti anti anti ant			
Annual Operational Programs Rec	quired to be Maintained	from Previou	us Permit <sup>3,4</sup>																
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
	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

TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS <sup>7</sup>
	The County does not plan any street sweeping to meet its obligation under the previous permit.
	The County does not plan any catch basin cleaning to meet its obligation under the previous permit.
	The County does not plan any additional septic pumping to meet its obligation under the previous permit.
	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	А	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 <sup>3</sup>				4,516				0.0	0	0.0	135.5	135.5	\$0			
Capital Projects (Proposed to Replace	Annual Obligation	s)														
HA20ALN000018	STRE	А	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	А	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	А	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	А	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	А	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	А	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	А	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

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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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	А	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	РРКТ	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	А	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	А	PERMANENT	7.0	N/A	N/A	N/A	3.7	0	36.7	2.6	2.6	\$142,450	Planning	2024		
	FPU	А	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,050	111.2	11.0	11.0	\$605,000	Planning	2024		
	UTC	А	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,060	32.0	2.8	2.8	\$154,000	Planning	2024		
		• 1		•	•	•	1		•			· · · · · · · · · · · · · · · · · · ·	•	·		•	

	PWET	S	PERMANENT	2.0	TBD	TBD	N/A	TDB	тс
WP000101	STRE	A	PERMANENT	1	N/A	N/A	6,371	978.0	1,740
WP000101	FSND	S	PERMANENT	1	9.4	1.0	N/A	4.0	2,0
WP000101	SPSD	S	PERMANENT	1	10.2	0.9	N/A	5.0	2,0
	SEPC	А	PERMANENT	10	N/A	N/A	N/A	0.0	C
	CLTM	А	PERMANENT	7.0	N/A	N/A	N/A	3.7	(
	FPU	А	PERMANENT	10.0	N/A	N/A	N/A	17.8	28,0
	UTC	А	PERMANENT	10.0	N/A	N/A	N/A	5.0	2,0
	PWET	S	PERMANENT	2.0	TBD	TBD	N/A	TDB	тс
	SEPC	А	PERMANENT	10	N/A	N/A	N/A	0.0	C
	STRE	А	PERMANENT	2.0	N/A	N/A	7,000	476.0	1,736
Subtotal Capital				163				4,260.7	11,37
Other (Proposed to Replace Annual	Obligations)		<b>T</b> - 2010 - 201						
	Trading								
	Trading								
	Trading								
	Trading								
	Trading								
	Trading								
Subtotal Other	I			0				0.0	(
Total of Obligations from Previous Permit That Must Be Continued				4,679				4,260.7	11,37
Operational Programs <sup>4</sup>									
Street Sweeping		А	ANNUAL						

TDB	TDB	4.0			4.0	\$400,000	Planning	2024	
,740,380	2,306.0	260.8			260.8	\$4,600,000	Design	2025	
2,000	41.0	4.9			4.9	\$0	Design	2025	Cost included above
2,000	66.0	5.1			5.1	\$0	Design	2025	Cost included above
0	0.0	2.3			2.3	\$45,000	Planning	2025	Draft 2020 Account Document credits, \$4,500 credit per tank from MS4 office
0	36.7	2.6			2.6	\$142,450	Planning	2025	
28,050	111.2	11.0			11.0	\$605,000	Planning	2025	
2,060	32.0	2.8			2.8	\$154,000	Planning	2025	
TDB	TDB	4.0			4.0	\$400,000	Planning	2025	
0	0.0	2.3			2.3	\$45,000	Planning	2026	Draft 2020 Account Document credits, \$4,500 credit per tank from MS4 office
,736,000	525.0	140.0			140.0	\$3,500,000	Planning	2026	
1,376,276	8,946.0	1,312.9	0	0	1,312.9	\$34,868,400			

					976.2			2020	Trades shown here are based on FY for planning.
					914.2			2021	Trades shown here are based on FY for planning.
					756.7			2022	Trades shown here are based on FY for planning.
					483.0			2023	Trades shown here are based on FY for planning.
					355.9			2024	Trades shown here are based on FY for planning.
					62.4			2025	Trades shown here are based on FY for planning.
0	0.0	0.0	0	0	3,548.3	\$0			
,376,276	8,946.0	1,448.4	0.0	0.0	1,448.4	\$34,868,400			
	Proposed	Restoration	for the Next Pe	ermit					
							•		

Catch Basin Cleaning A	ANNUAL												
Septic System Pumping A	ANNUAL												
Subtotal Operations (up to 2026) <sup>5</sup>		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		

	Credits	Trade	
		-1215.1	Nutrient Trade 2020
		-17.9	Shortage septic pump
		-1233.0	
2020	256.8	-976.2	
2021	62.0	-914.2	
2022	157.5	-756.7	
2023	273.7	-483.0	
2024	127.1	-355.9	
2025	293.5	-62.4	
2026	163.1	100.7	
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.

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### 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	* Upstream BMP increases from 2.0 to 2.2 as the downstream BMP in the treatment train is now trea
Barrington	WP000039	0.7	242	7.26	* Upstream BMP Increases from 1.0 to 1.1 as the downstream BMP in the treatment train is now trea

s stream restoration

s 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.

			Original					Update			
	Stream	Length	TP	TSS	TN	IA (reported)	IA (calculated)	ТР	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

### 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.

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was calculated incorrectly, TSS updated per design report

was calculated incorrectly

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

	BMP Type	
BMP Classification	Code Alternative Surfaces	BMP Type
E	AGRE	Green Roof – Extensive
E	AGRI	Green Roof – Intensive
E	APRP	Permeable Pavements
E	ARTF	Reinforced Turf
	Nonstructural Techniq	
E	NDRR	Disconnection of Rooftop Runoff
E	NDNR	Disconnection of Non-Rooftop Runoff
E	NSCA	Sheetflow to Conservation Areas
_	Micro-Scale Practice	
E	MRWH	Rainwater Harvesting
 E	MSGW	Submerged Gravel Wetlands
 E	MILS	Landscape Infiltration
 E	MIBR	Infiltration Berms
 E	MIDW	Dry Wells
E	MMBR	Micro-Bioretention
E	MRNG	Rain Gardens
с Е	MSWG	Grass Swale
E	MSWW	Wet Swale
с Е	MSWB	Bio-Swale
E	MENF	Enhanced Filters
L	Ponds (P)	
S	PWED	Extended Detention Structure, Wet
S	PWED	Retention Pond (Wet Pond)
<u> </u>	PMPS	
	РРКТ	Multiple Pond System Pocket Pond
S		
S	PMED	Micropool Extended Detention Pond
C	Wetlands (W)	Challow March
S	WSHW	Shallow Marsh
S	WEDW	ED – Wetland
S	WPWS	Wet Pond – Wetland
S	WPKT	Pocket Wetland
	Infiltration (I)	Infilmentien Desin
S	IBAS	Infiltration Basin
S	ITRN	Infiltration Trench
	Filtering Systems	
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 (C	
S	ODSW	Dry Swale
S	OWSW	Wet Swale
	Other Practices ()	
S	XDPD	Detention Structure (Dry Pond)
S	XDED	Extended Detention Structure, Dry
S	XFLD	Flood Management Area
S	XOGS	Oil Grit Separator
S	ХОТН	Other
	Alternative BMP	S
А	MSS	Mechanical Street Sweeping
А	VSS	Regenerative/Vacuum Street Sweeping (i.e., Advanced Street Sweep
А	IMPP	Impervious Surface Reduction (i.e., impervious to pervious)
А	IMPF	Impervious Surface to Forest (i.e., IMPP + FPU)
А	FPU	Forestation on Pervious Urban (i.e., Forest Planting)
Α	CBC	Catch Basin Cleaning

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

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9/30/2021

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		Lbs	Acre/LF <sup>2</sup>			
		0.075	0.068	248		0.03
	Linear Ft Restored	TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (lbs)	TSS Annual Load Reduction (tons)	Impervious Acre Equivalent
Winter's Run Tributaries Stream Restoration	3258	244.35	221.54	807,984	403.99	97.74

<sup>1</sup>From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

<sup>2</sup>From 4-30-2019 MDE Memo

		Lbs R	educed / Linea	ar Ft <sup>1</sup>		]	
		0.075	0.068	248		0.03	
	Linear Ft Restored	TN Annual Load Reduction (lbs)	TP Annual Load Reduction (lbs)	TSS Annual Load Reduction (Ibs)	TSS Annual Load Reduction (tons)	Impervious Acre Equivalent	
Stream Restoration	700	52.50	47.60	173,600	86.80	21.00	
		<sup>1</sup> From 2019 M	DE Accountin	g for Wasteload	Allocations Report, Tak	ole 1	<sup>3</sup> See MDE 2014
		<sup>2</sup> From 4-30-20	19 MDE Mem	10			<sup>4</sup> See MDE 2014

4 report, Table 3 4 report, Table A.1 <sup>5</sup>See 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 <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>!</sup>
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
		DA				WQv	WQv	WQv	Pe	Equivalent							
Facility	DA Total (acres)	Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	Required (cubic feet)	Provided (acre-feet)	Provided (cubic feet)	Equivalent (inches)	Credit per Acre <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons)
			·													Loud (tons)	
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
		DA				WQv	WQv	WQv	Ре	Equivalent							
		Imanonious	%			Required	Provided	Provided	Equivalent	Credit per	Total Credit	TN Annual	TN Annual Load	TP Annual	TP Annual Load	TSS Annual	TSS Annual Loa
	DA Total	Impervious		-		1	1 6 1	1 1 1 1 1	/· · ·	. 3		4		4	<b>– – – – – – – – – –</b>	4	- 1 <i>1</i> :
Facility	DA Total (acres)	(acres)	Impervious	Rv	WQv Required (acre-feet)	(cubic feet)	(acre-feet)	(cubic feet)	(inches)	Acre <sup>3</sup>	(acres)	Load $(lbs)^4$	Reduction (lbs) <sup>5</sup>	Load $(lbs)^4$	Reduction (lbs) <sup>5</sup>	Load $(tons)^4$	Reduction (tons

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 <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>5</sup>
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		DA				WQv	WQv	WQv	Ре	Equivalent							
	DA Total	Impervious	%			Required	Provided	Provided	Equivalent	Credit per	Total Credit		TN Annual Load	TP Annual	TP Annual Load	TSS Annual	TSS Annual Load
Facility	(acres)	(acres)	Impervious	Rv	WQv Required (acre-feet)	(cubic feet)	(acre-feet)	(cubic feet)	(inches)	Acre <sup>3</sup>	(acres)	Load $(lbs)^4$	Reduction $(lbs)^5$	Load $(lbs)^4$	Reduction $(lbs)^5$	Load $(tons)^4$	Reduction (tons) <sup>5</sup>
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		DA	04			WQv	WQv	WQv	Pe	Equivalent Crodit por	Table Cardle		TN Appual Load		TP Appual Load	TSS Appual	TSS Annual Load
Facility	DA Total (acres)	Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	Required (cubic feet)	Provided (acre-feet)	Provided (cubic feet)	Equivalent (inches)	Credit per Acre <sup>3</sup>	Total Credit (acres)		TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	Reduction (tons) <sup>5</sup>
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

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 <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>5</sup>
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		DA	~~~~			WQv	WQv	WQv	Pe	Equivalent			TN Annual Load	TP Annual		TSS Annual	TSS Annual Load
Facility	DA Total (acres)	Impervious (acres)	% Impervious	Rv	WQv Required (acre-feet)	Required (cubic feet)	Provided (acre-feet)	Provided (cubic feet)	Equivalent (inches)	Credit per Acre <sup>3</sup>	Total Credit (acres)	Load (lbs) <sup>4</sup>		Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>		Reduction (tons) <sup>5</sup>
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		Lbs R 0.075	educed / Line 0.068	ear Ft <sup>1</sup> 248		Acre/LF <sup>2</sup> 0.03	
	Linear Ft Restored	TN Annual Load Reduction (Ibs)	TP Annual Load Reduction (Ibs)	TSS Annual Load Reduction (Ibs)	TSS Annual Load Reduction (tons)	Impervious Acre Equivalent	
Stream Restoration	1812	135.92	123.24	449,453	224.73	54.37	
		<sup>1</sup> From 2019 N	/IDE Accounti	ng for Wasteloa	ad Allocations Report, Ta	able 1	<sup>3</sup> See MDE 2014 report, Table 3
		<sup>2</sup> From 4-30-2	019 MDE Me	mo			<sup>4</sup> See MDE 2014 report, Table A.1
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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 <sup>3</sup>	Total Credit (acres)		TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>5</sup>
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

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		0.075	0.068	248		0.03
		TN Annual Load	TP Annual Load	TSS Annual Load		Impervious Acre
	Linear Ft	Reduction	Reduction	Reduction	TSS Annual Load	Equivalent
	Restored	(lbs)	(lbs)	(lbs)	Reduction (tons)	
SPSC Outfall C	242	18.15	16.46	60,016	30.01	7.26

<sup>1</sup>From 2019 MDE Accounting for Wasteload Allocations Report, Table 1 <sup>2</sup>From 4-30-2019 MDE Memo

						WQv		WQv				TN Annual		TP Annual		<b>TSS Annual</b>
						Required	WQv	Provided				Load		Load		Load
	DA Total	DA Impervious			WQv Required	(cubic	Provided	(cubic	Equivalent	Total Credit	TN Annual	Reduction	TP Annual	Reduction	TSS Annual	Reduction
Facility	(acres)	(acres)	% Impervious	Rv	(acre-feet)	feet)	(acre-feet)	feet)	(inches)	(acres)*	Load (lbs) <sup>4</sup>	(lbs) <sup>5</sup>	Load (lbs) <sup>4</sup>	(lbs) <sup>5</sup>	Load (tons) <sup>4</sup>	(tons) <sup>5</sup>
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

<sup>3</sup>See MDE 2014 report, Table 3

<sup>4</sup>See MDE 2014 report, Table A.1 <sup>5</sup>See MDE 2014, Table 2.E \*Includes GSI

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

<sup>1</sup>2019 MDE Memo, Table 9

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

<sup>1</sup>From 2019 MDE Accounting for Wasteload Allocations Report, Table 1

<sup>2</sup>From 4-30-2019 MDE Memo

Т	MDL Credit 2		Site Length (Linear Feet)	Total Watershed	Impervious Watershed Area (Acres)	Equivalent Impervious Acre
TN (lbs/yr)	TP (lbs/yr)	TSS (tons/yr)		Area (Acres)	Alea (Adles)	Treated 1
1363.00	517.00	493.00	2028.00	191.00	99.32	143.26
<sup>1</sup> See June 2020 Acco <sup>2</sup> See Procol 1 and 2	0			and Imperviou	us Acres Treated	

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 <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>5</sup>
SWM Pond #1	10.25	2.32	0.23	0.25	0.22	9,440	0.68	29,655	3.14	1.40	3.25	121.14	50.88	7.33	4.84	1.58	1.34
													<sup>3</sup> See MDE 2014 report, <sup>4</sup> See MDE 2014 report, <sup>5</sup> See MDE 2014, Table 2	Table A.1			
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 <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>5</sup>
SMAA Doord #2	0 55	2.02	0.24	0.26	0.10	0 1 5 1	0.26	11 270	1 40	1 10	2 22	101 42	28.24	6.22	2.69	1 25	1.01

Facility SWM Pond #1	DA Total (acres) 10.25	DA Impervious (acres) 2.32	% Impervious 0.23	Rv 0.25	WQv Required (acre- feet) 0.22	WQv Required (cubic feet) 9,440	WQv Provided (acre-feet) 0.68	WQv Provided (cubic feet) 29,655	Pe Equivalent (inches) 3.14	Equivalent Credit per Acre <sup>3</sup> 1.40		TN Annual Load (lbs) <sup>4</sup> 121.14	TN Annual Load Reduction (lbs) <sup>5</sup> 50.88	TP Annual Load (lbs) <sup>4</sup> 7.33	TP Annual Load Reduction (lbs) <sup>5</sup> 4.84	TSS Annual Load (tons) <sup>4</sup> 1.58	TSS Annual Load Reduction (tons) <sup>5</sup> 1.34	
									<ul> <li><sup>3</sup>See MDE 2014 report, Table 3</li> <li><sup>4</sup>See MDE 2014 report, Table A.1</li> <li><sup>5</sup>See MDE 2014, Table 2.E</li> </ul>									
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 <sup>3</sup>		TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>	TP Annual Load (lbs) <sup>4</sup>	TP Annual Load Reduction (lbs) <sup>5</sup>	TSS Annual Load (tons) <sup>4</sup>	TSS Annual Load Reduction (tons) <sup>5</sup>	
SWM Pond #2 and SPSC H	8.55	2.02	0.24	0.26	0.19	8,151	0.26	11,379	1.40	1.10	2.22	101.43	38.34	6.22	3.68	1.35	1.01	

	Lbs Reduced / Linear Ft <sup>1</sup>										
		0.075	0.068	248		Acre/LF <sup>2</sup> 0.02					
			TP Annual	TSS Annual							
			Load	Load		Impervious					
	Linear Ft	TN Annual Load	Reduction	Reduction	TSS Annual Load	Acre Equivalent					
	Restored	Reduction (lbs)	(lbs)	(lbs)	Reduction (tons)						
SPSC Outfall H	266	19.95	18.09	65,968	32.98	5.32					

<sup>1</sup>From 2019 MDE Accounting for Wasteload Allocations Report, Table 1 <sup>2</sup>From 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)		•	Equivalent Credit per Acre <sup>3</sup>	Total Credit (acres)	TN Annual Load (lbs) <sup>4</sup>	TN Annual Load Reduction (lbs) <sup>5</sup>				TSS Annual Load Reduction (tons) <sup>5</sup>
Wetland	44.75	13.19	0.29	0.32	1.18	51,214	0.59	25709	0.50	0.50	6.60	542.66	141.09	35.86	14.70	8.01	4.17

	Lbs Reduced / Linear Ft <sup>1</sup>									
		0.075	0.068	248		0.02				
			<b>TP</b> Annual	TSS Annual						
			Load	Load		Impervious				
	Linear Ft	TN Annual Load	Reduction	Reduction	TSS Annual Load	Acre Equivalent				
	Restored	Reduction (lbs)	(lbs)	(lbs)	Reduction (tons)					
SPSC Outfall C	147	11.03	10.00	36,456	18.23	2.94				

<sup>1</sup>From 2019 MDE Accounting for Wasteload Allocations Report, Table 1 <sup>2</sup>From 4-30-2019 MDE Memo

Provided	Equivalen	t Credit	Credit	Annual	Annual	Load	Load	Annual	Annual
2,132	#REF!	1.20	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!