

Restoration Project Portfolio Accounting Principles (Updated October 7, 2019)

The Restoration Project Portfolio previously required impervious area calculations for structural stormwater BMPs and load reductions for alternative BMPs. The portfolio should now include both impervious area calculations and load reductions for all practices. The following is a summary of the basic impervious surface restoration and pollutant load reduction principles to follow when completing the Restoration Project Portfolio. These principles are based on the Chesapeake Bay Program Phase 6 watershed model and the draft 2019 *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated*, currently under development.

Calculating Impervious Surface Restoration

BMPs for Upland Applications

- Impervious Acre Credits
 - The impervious acre credit for structural practices is based on the impervious acres in a BMP's drainage area and the depth of rainfall treated (P_E). A water quality volume (WQ_v) treatment of 1 inch of rainfall is required to receive full credit (i.e., 1:1) for the impervious acres in the BMP's drainage area. However, additional credit for upland applications may be available.
 - For structural BMPs, additional impervious acre credits may be obtained when projects incorporate green stormwater infrastructure (GSI) and/or additional volume for watershed management (WM). BMPs eligible for GSI credit include Chapter 5 practices (e.g., rain gardens, micro-bioretenion), Chapter 3 practices (i.e., infiltration, bioretention) that are considered runoff reduction or "RR", and Chapter 3 structural practices that are designed and vegetated to mimic natural systems (e.g., enhanced wetland practices). In general, when designs for these practices incorporate required design criteria (e.g., "shall" performance criteria) and recommended criteria (e.g., "should" performance criteria) found in the 2000 Maryland Stormwater Design Manual (Manual, MDE 2000 & 2009), the GSI credit may be claimed. GSI credit is based on the Bay Program's pollutant rate curves for stormwater BMPs. RR practices have greater pollutant removal rates than stormwater treatment or "ST" practices. An additional credit of 35% reflects the average difference between the ST and RR curves for TN, TP, and TSS removal. Therefore, for these practices, report in the GSI Credit column the value of the impervious acres treated multiplied by 0.35.
 - Additional storage volume above the WQ_v may be considered for WM credit as facilities with greater storage volume are more adaptable to changing weather patterns and intense, short duration storms. Additional storage for WM credit does not need to meet WQ_v criteria. When additional storage is provided, an additional 0.025 impervious area credit may be added for every inch of rainfall treated in excess of the water quality treatment provided up to a maximum of 2 inches (i.e., maximum credit = 0.5 acres).
 - If a practice is not eligible for GSI credit, the Total Impervious Acres column equals the Impervious Acres column. If a stormwater management BMP can only claim additional GSI credit, the Total Impervious Acres equals the value in the Impervious Acres column + the additional GSI credit. If a stormwater management BMP can claim GSI and WM credits, Tables 1 and 2 below may be used to determine GSI and WM credits.

WM Volume¹	WM Credit per Acre of Watershed Imperviousness
0.0	0.0
0.2	0.05
0.4	0.1
0.6	0.15
0.8	0.2
1.0	0.25
1.2	0.3
1.4	0.35
1.6	0.4
1.8	0.45
2.0	0.5

¹WM captured is the difference between the total volume captured and the volume treated for water quality. The maximum value for WM is 2.0 inches.

Rainfall Depth Treated (inches)	Impervious Acre Credit per Acre of Watershed Area	Green Infrastructure Credit Multiplier	Additional Credit per Acre of Watershed Area	Total Credit per Acre of Watershed Impervious Area
0.2	0.2	0.35	0.07	0.27
0.4	0.4	0.35	0.14	0.54
0.6	0.6	0.35	0.21	0.81
0.8	0.8	0.35	0.28	1.08
1.0	1.0	0.35	0.35	1.35
1.2	1.05	0.35	0.37	1.42
1.4	1.1	0.35	0.38	1.48
1.6	1.15	0.35	0.40	1.55
1.8	1.2	0.35	0.42	1.62
2.0	1.25	0.35	0.44	1.69
2.2	1.3	0.35	0.46	1.76
2.4	1.35	0.35	0.47	1.82
2.6	1.4	0.35	0.48	1.89
2.8	1.45	0.35	0.49	1.96
3.0	1.5	0.35	0.50	2.0

Example: As an example, consider applying WM and GSI credits for a retrofit of a dry detention pond with a 40.0 acre drainage area, 10.0 of which are impervious: The dry pond has no existing water quality features. Therefore, 10.0 impervious acres in its 40.0 acre contributing drainage area are untreated. A retrofit project is proposed to add a permanent pool, expand the pond footprint, and reconfigure the control structure to treat the entire water quality volume, or a $P_E=1.0$ inch. This retrofit design would achieve 10.0 impervious acre credits. An additional 1 inch of temporary storage is provided above the water quality

volume for watershed management. This adds an additional 0.25 impervious acre credit per acre of watershed area for a total of 12.5 impervious acre credits (see Table 1).

Alternatively, the project could include various green design improvements including sediment forebays, stilling basins, deep and shallow pools, microtopography, an aquatic bench, various planting zones and discharge stabilization. Forests, wetlands and buffers could be incorporated into the design. With these additional features, the project would meet all minimum requirements and green stormwater infrastructure design criteria. Therefore, the original 10 impervious acres treated is multiplied by 35% for a GSI credit of 3.5 acres (see Table 2).

If the project included both the WM features and the GSI features, the total credit would be 16 acres (10 acres x (0.25 WM credit +1.35 GSI credit)).

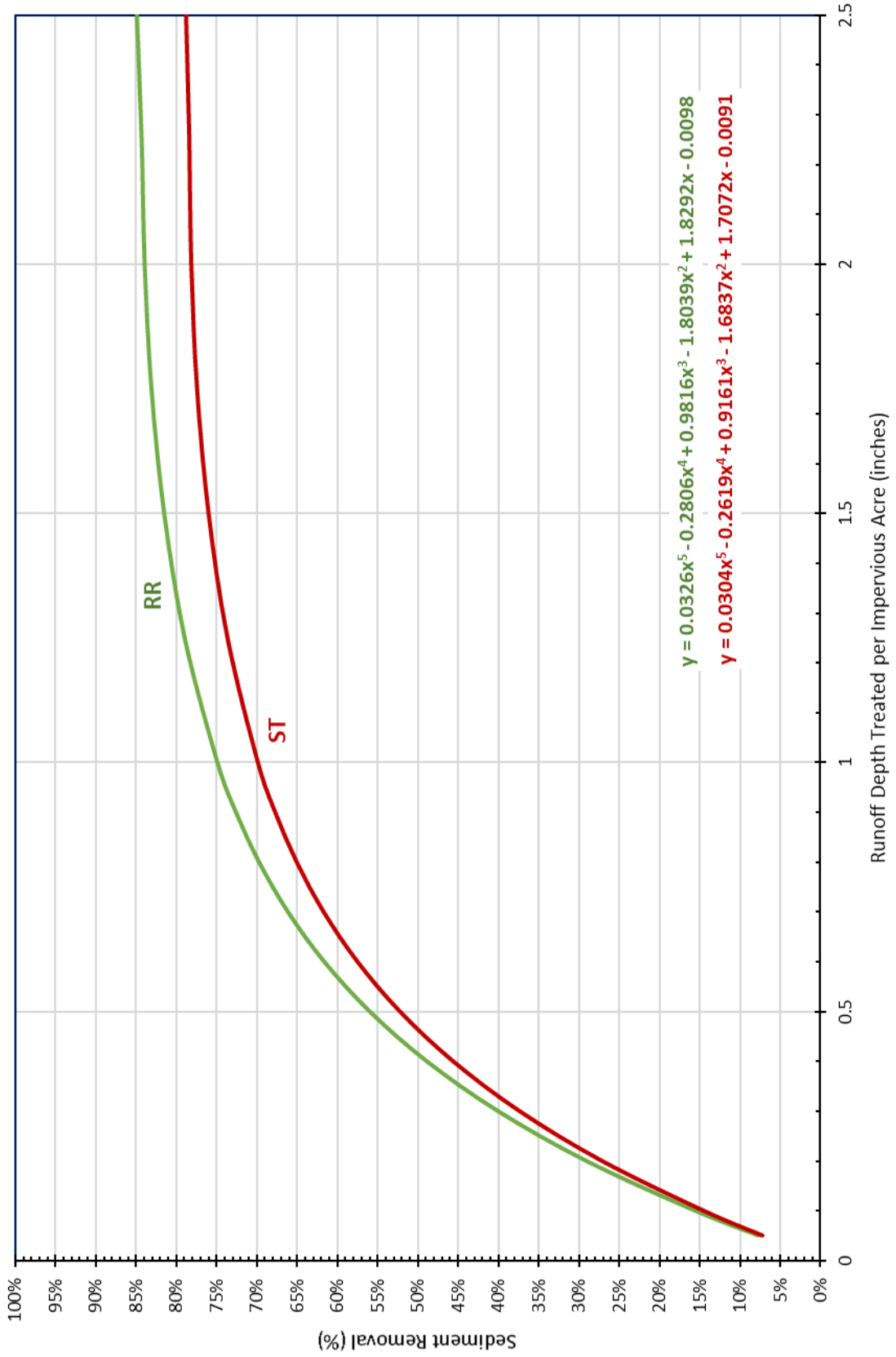
- Pollutant Load Reductions
 - Pollutant unit loads for an impervious acre per the Chesapeake Bay Phase 6 Watershed Model are:

TN (lbs/ac/yr)	TP (lbs/ac/yr)	TSS (lbs/ac/yr)
14.66	0.72	1,668.19

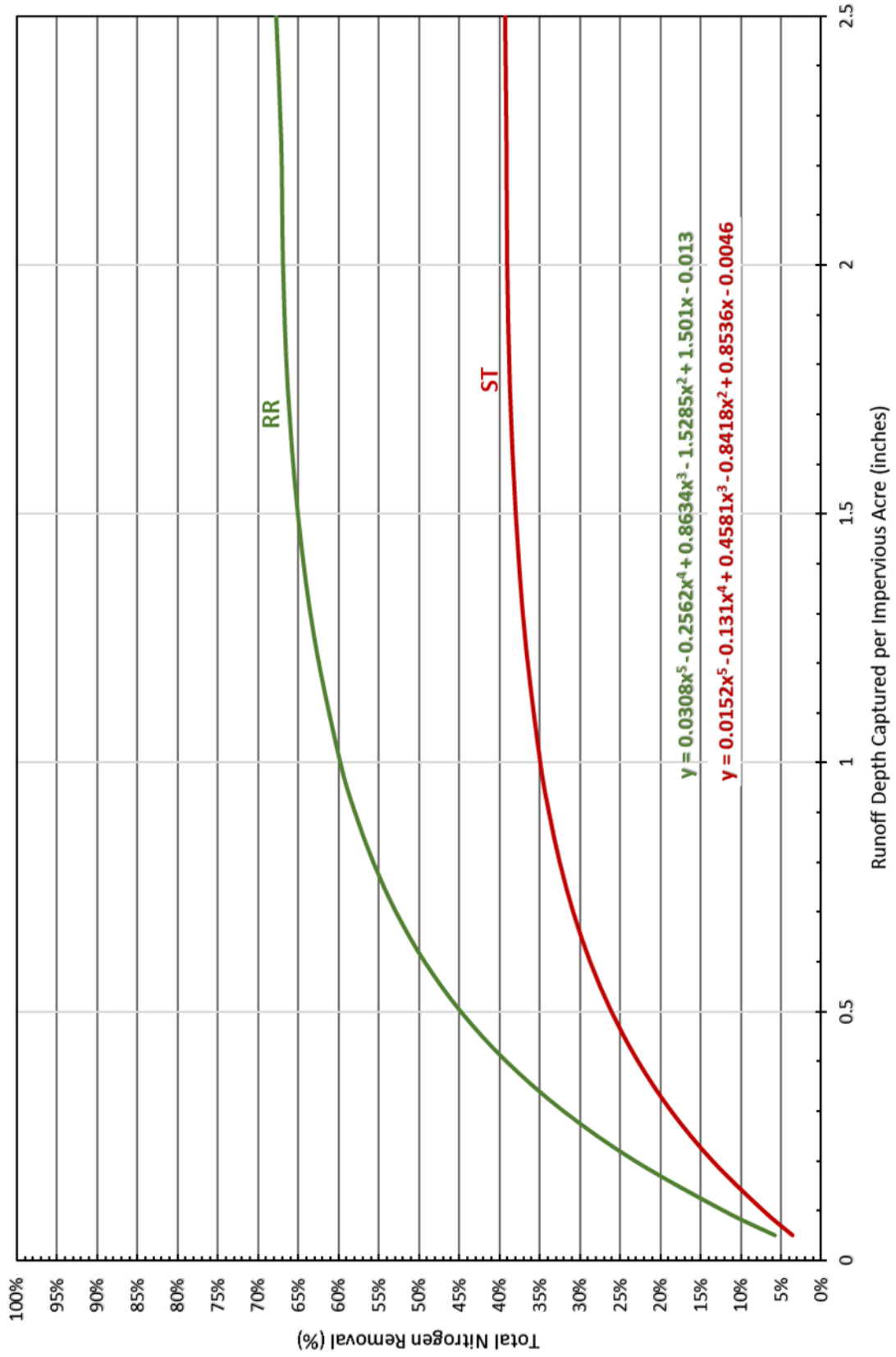
- For all BMPs for Upland Applications, include estimated TN, TP, and TSS load reductions. Use the unit loads above and the adjustor curves and Table 3 below to determine TN, TP, and TSS load reductions.

Runoff Depth Treated (Inches)	TN		TP		TSS	
	RR	ST	RR	ST	RR	ST
0.20	23.3%	13.6%	27.2%	21.4%	29.1%	27.2%
0.40	39.2%	22.8%	45.7%	35.9%	48.9%	45.7%
0.60	49.3%	28.8%	57.5%	45.2%	61.7%	57.5%
0.80	55.7%	32.5%	65.1%	51.1%	69.7%	65.1%
1.00	59.8%	34.9%	69.9%	54.9%	74.9%	69.9%
1.20	62.4%	36.5%	73.1%	57.4%	78.3%	73.1%
1.40	64.3%	37.6%	75.2%	59.1%	80.6%	75.2%
1.60	65.6%	38.3%	76.7%	60.3%	82.2%	76.7%
1.80	66.4%	38.8%	77.6%	61.0%	83.3%	77.6%
2.00	66.9%	39.1%	78.2%	61.4%	83.9%	78.2%
2.20	67.0%	39.2%	78.4%	61.6%	84.3%	78.4%
2.40	67.3%	39.2%	78.6%	61.8%	84.6%	78.6%
2.60	68.4%	39.5%	79.3%	62.4%	85.5%	79.3%

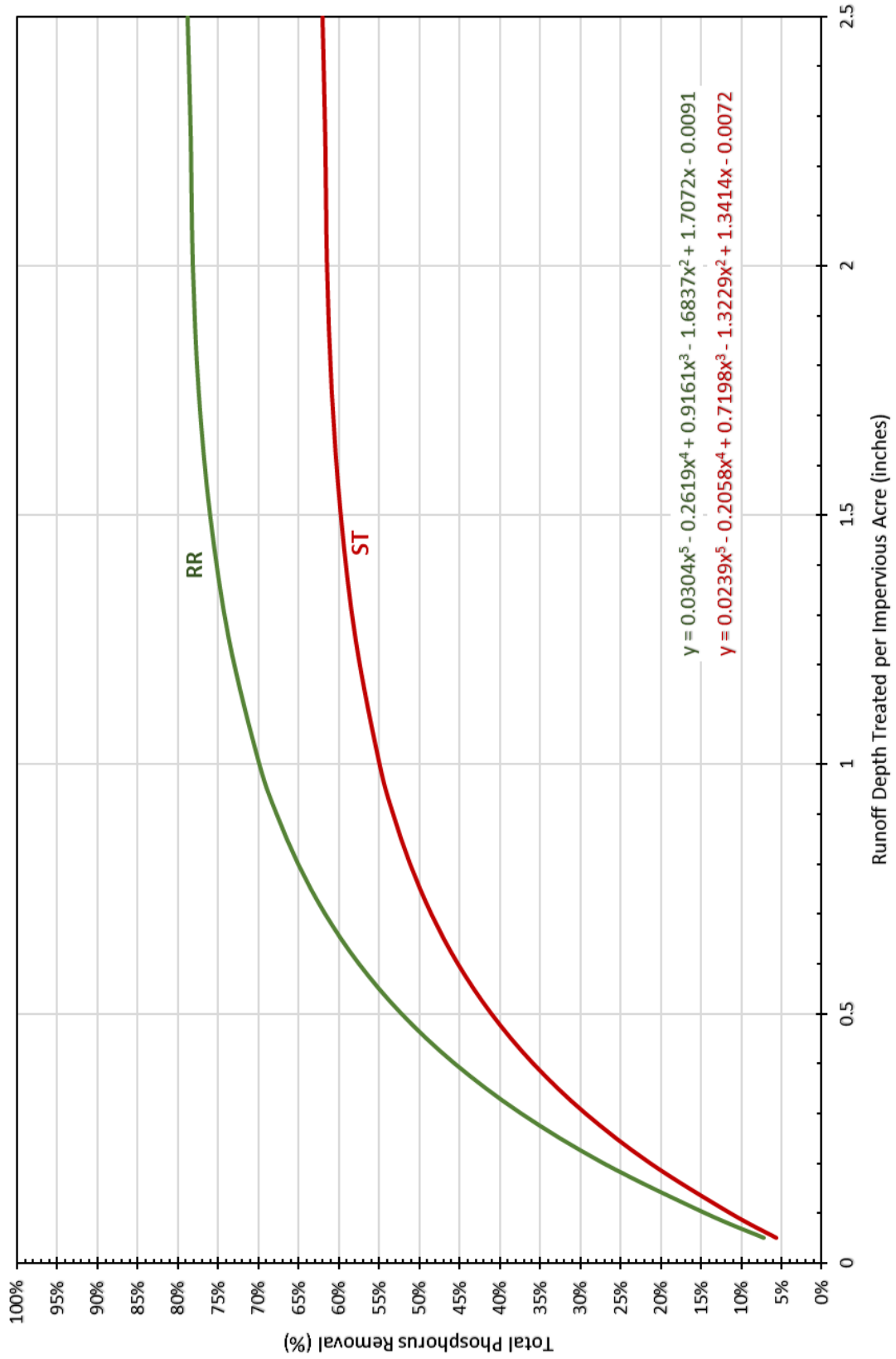
Total Suspended Sediment (TSS) Removal for RR and ST Stormwater Practices



Total Nitrogen Removal for RR and ST Stormwater Practices



Total Phosphorus Removal for RR and ST Stormwater Practices



Alternative BMPs - Programmatic

- Provide the load reductions and equivalent impervious acres treated for each project. Use Table 4 and Table 5 below to determine equivalent impervious acres and load reductions for each programmatic alternative BMP. The table is based on planning rates and is subject to change.

Table 4: Load Reductions and Equivalent Impervious Acres for Programmatic Alternative BMPs

Efficiency BMP	Load Reduced			Equivalent Impervious Acres	Units
	TN (lbs/acre/yr)	TP (lbs/acre/yr)	TSS (lbs/acre/yr)		
IDDE Programmatic	0.03	0.00	0.00	0.001	Per acre treated
Advanced Sweeping - 1 pass/12 weeks	0.00	0.07	356.62	0.025	Per acre/mile swept
Advanced Sweeping - 1 pass/2 weeks	0.73	0.34	1961.41	0.146	
Advanced Sweeping - 1 pass/4 weeks	0.36	0.21	1069.86	0.082	
Advanced Sweeping - 1 pass/8 weeks	0.25	0.14	713.24	0.055	
Advanced Sweeping - 1 pass/week	1.09	0.55	2852.95	0.221	
Advanced Sweeping - 2 pass/week	1.46	0.69	3744.50	0.285	
Advanced Sweeping - fall 1 pass/1-2 weeks else monthly	0.73	0.34	1,783.10	0.139	
Advanced Sweeping - spring 1 pass/1-2 weeks else monthly	0.36	0.28	1,248.17	0.100	
Mechanical Broom - 1 pass/4 weeks	0.00	0.00	17.83	0.001	
Mechanical Broom - 1 pass/week	0.00	0.00	89.15	0.004	
Mechanical Broom - 2 pass/week	0.00	0.00	178.31	0.007	

Table 5: Alternative Septic BMPs

	Notes	Load Reduced			Impervious Acre Equivalent
		TN (lbs/acre/yr)	TP (lbs/acre/yr)	TSS (lbs/acre/yr)	
Septic Pumping	Pumping system is maintained and verified for annual credit	0.69	0	0	0.03
Septic Denitrification	Permanent credit for installing enhanced septic denitrification	6.0	0	0	0.26
Septic Connections to WWTP	Permanent credit for septic system connected to a WWTP	0 ¹	0	0	0.39

¹Actual load reductions shall be reported through local health department. Septic system credits only apply to impervious acre requirements.

Alternative BMPs – Prevented Sediment

- For stream restoration, shoreline stabilization, or outfall stabilization, provide the estimated linear feet in the Length Restored column.
- Load reductions and impervious acre credits for stream restoration, shoreline stabilization, and outfall stabilization use linear feet as the unit measure. Use Table 6 below to determine equivalent impervious acres and load reductions for each practice. This table is based on planning rates and is subject to change.

Table 6: Load Reduction and Equivalent Impervious Acres for Prevented Sediment Practices

Efficiency BMP	Load Reduced			Equivalent Impervious Acres	Units
	TN (lbs/acre/yr)	TP (lbs/acre/yr)	TSS (lbs/acre/yr)		
Floating Treatment Wetland – 10% Coverage	0.10	0.02	73.89	0.008	Per acre treated
Floating Treatment Wetland – 20% Coverage	0.22	0.05	150.99	0.017	
Floating Treatment Wetland – 30% Coverage	0.32	0.07	224.88	0.026	
Floating Treatment Wetland – 40% Coverage	0.43	0.09	295.55	0.034	
Floating Treatment Wetland – 50% Coverage	0.53	0.11	369.44	0.042	
Stream Restoration (LF) (Planning Rate)	.075	.068	248	0.02	Per linear ft
Shoreline Management (Planning Rate)	.086	.061	164	0.03	

Alternative BMPs – Land-use Conversion

- Provide the load reductions and estimated impervious acres treated for each project. Use Table 7 below to determine equivalent impervious acres and load reductions for each practice. The table is based on planning rates and is subject to change.

Table 7: Load Reduction and Equivalent Impervious Acres for Land-use Conversion BMPs

Land Use Conversion BMP	Load Reduced			Equivalent Impervious Acres	Units
	TN (lbs/acre/yr)	TP (lbs/acre/yr)	TSS (lbs/acre/yr)		
Forest Planting (<i>Turf</i> → <i>Forest</i>)	11.12	1.78	2,806	1.1	Per acre
Riparian Forest Planting	13.90	2.23	3,280	1.4	Per acre
Conservation Landscaping (<i>Turf</i> → <i>Mixed Open</i>)	5.24	0.53	0.00 ¹	0.4	Per acre
Riparian Conservation Landscaping	6.55	0.66	0.00 ¹	0.5	Per acre
Forest Conservation	10.57	1.10	2,465.63	0.46	Per acre
Impervious Surface Reduction (<i>Impervious</i> → <i>Turf</i>)	6.96	0.44	5,239	0.7	Per acre
Street Trees (<i>Roads</i> → <i>Tree Canopy over Impervious</i>)	3.09	0.76	1,248	0.4	Per acre
Urban Tree Canopy Planting (<i>Turf</i> → <i>Tree Canopy Over Turf</i>)	3.20	0.50	206	0.3	Per acre

¹if the credit was <0, the credit was set to 0. MDE will not be taking a negative credit.

Updated Instructions for Completing Restoration Project Portfolios

As part of the new MS4 Phase I permit development process, the Maryland Department of the Environment (Department) requests each MS4 permittee to submit an updated Restoration Project Portfolio, detailing restoration projects to be planned, designed, and/or constructed during the next permit term. Updates to this portfolio will allow the MS4 permittee to report equivalent impervious acres and TN, TP, and TSS load reductions for all proposed restoration projects. This Updated Restoration Project Portfolio shall be completed using the updated Excel workbook, “Restoration Project Portfolio_10-04-19.xlsx”. Changes to this workbook include the addition of six columns to report TP load reductions, rainfall depth (P_E) treated, green infrastructure credit achieved, watershed management credit achieved, updated total impervious acre credits achieved, length of stream restored and street lane miles swept. Most of the requirements for completing the previous version of the spreadsheet remain and are repeated here. However there are a few revisions and additions to note. Requirements for completing this workbook are summarized below.

DESCRIPTION OF REQUIREMENTS

Complete the provided spreadsheet for restoration projects to be planned, designed, and/or under construction from the end of the 4th generation permit through 2025. These projects can be annual BMPs (including water quality trading credits) and capital projects. Additional years 2026 and 2027 are optional to show those projects that require more than five years to complete due to their size or complexity.

The updated restoration portfolio acts as an extension of the recent FAP submittal; thus, proposed activities for the next five years can include those practices reported in the 2018 Financial Assurance Plan. However, the Department requests that the portfolio identify nutrient and sediment reductions as well as the local concerns that would be addressed. This information should be more specific for the first reporting year but may be more generalized for the remaining reporting years.

HOW TO SUBMIT INFORMATION

Below, each section of the spreadsheet is outlined along with guidance on providing data. General instructions for calculating impervious surface restoration and pollutant load reductions in accordance with the Restoration Project Portfolio Accounting Principles are provided in a separate document. These principles are based on the DRAFT 2019 *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* currently under development. Please submit all files electronically via compact disc, email, or ftp and as a hard copy. Also, please ensure that the following actions are taken:

- **Remaining Unmet Restoration Obligation from Previous Permit (Impervious Acres)**
 - Please enter the number of acres remaining that must be treated to meet your previous permit restoration requirement. This value would be zero if you completed restoration of the full impervious acres required under your previous permit.

- **Remaining Unmet Restoration Obligations from Previous Permit**

- In this section you should report any unmet impervious surface restoration obligation remaining from the previous permit. The BMPs listed in this section are those proposed to be implemented in the next five-year permit term to address this unmet restoration obligation.
- All stormwater management BMPs, programmatic initiatives, and perennial alternative control practices and water quality trades used to address unmet restoration obligations shall be reported in terms of impervious acres treated or equivalent impervious acres as well as TN, TP, and TSS reductions. Projects should be credited using the Restoration Project Portfolio Accounting Principles and any additional guidance updates found on the Department's webpage, e.g., stream restoration, outfall stabilization, CMAC (continuous monitoring and adaptive control).
- The projected implementation year should be from the end of the 4th generation permit through 2025.
- For additional guidance, refer to the section below titled "Reporting Specific Projects".

- **Obligations from Previous Permit That Must Be Continued**

In this section you should report any obligations from the previous permit that must be continued through the next five-year permit term and/or replaced with a stormwater management BMP, programmatic initiative, or alternative control practices in accordance with the Restoration Project Portfolio Accounting Principles.

Water Quality Trades

- Water quality trades must continue annually and be replaced prior to the end of the permit term.
- These practices and the associated data should be reported in the section titled "Other (Proposed to Replace Annual Obligations)".
- Equivalent impervious acres treated by water quality trades must be continued yearly or replaced at a one to one impervious acre ratio. In addition, please report the TN, TP and TSS reductions expected from these water quality trades.

Annual Alternative Practices

- For annual alternative control practices implemented during the previous permit, impervious acre equivalencies were computed using the 2014 Accounting Guidance. The portfolio shall include annual alternative control practices that are continued each year or replaced in accordance with the Restoration Project Portfolio Accounting Principles. Impervious acres treated by each annual alternative control practices must be continued yearly or replaced at a one to one impervious acre ratio. In addition, please report the TN, TP and TSS reductions expected from these annual alternative BMPs.
- These practices and the associated data should be reported under the section titled "Annual Operational Programs Required to be Maintained from Previous Permit".
- If annual septic pumping was utilized in the previous permit and is required to be maintained, it should be reported in this section.

Replacement BMPs

- When these water quality trades or annual practices are converted to new stormwater management BMPs, programmatic initiatives, or permanent alternative control practices, the impervious acres managed and the TN, TP and TSS load reductions shall be reported using the Restoration Project Portfolio Accounting Principles.
 - When replacing water quality trades, the projected implementation year should be from the end of the 4th generation permit through 2025. When replacing annual practices, the projected implementation year should be from the end of the current permit through 2027. It is acceptable if a project will not be completed by 2027.
 - For additional guidance, refer to the section below titled “Reporting Specific Projects”.
- **Proposed Restoration for the Next Permit**
 - In this section you should report proposed BMPs to implement as part of the next permit restoration requirement.
 - All stormwater management BMPs, programmatic initiatives, and perennial alternative control practices and water quality trades proposed as new restoration for the next permit shall be reported in terms of impervious acres treated or equivalent impervious acres as well as TN, TP, and TSS reductions. Projects should be credited using the Restoration Project Portfolio Accounting Principles and any additional guidance updates found on the Department’s webpage, e.g., stream restoration, outfall stabilization, CMAC (continuous monitoring and adaptive control).
 - The projected implementation year should be from the end of the current permit through 2025. Additional projects may be planned up through 2027.
 - Provide line items for annual operations and maintenance costs. Also include annual capital improvement project information, if possible, on stormwater/flood control BMPs that are being repaired for safety but do not achieve any additional water quality credit, e.g., a dam repair or enhanced emergency spillway project. In the comment field note “watershed management”.
 - For additional guidance, refer to the section below titled “Reporting Specific Projects”.

REPORTING SPECIFIC PROJECTS

General

- Use BMP types and classes from the MDE Geodatabase. Additional BMP types (e.g., IDDE) from the Restoration Project Portfolio Accounting Principles may also be used.
- If a project has multiple types of a single BMP, identify the amount in the Number of BMPs column. If using septic pumping or denitrification, report the number of affected septic systems in this column.
- For upland BMPs, provide the total drainage area for the project. If there is no drainage area for specific programmatic initiatives or alternative control practices, leave this field blank.
- Impervious Acres and Reductions for TN, TP, and TSS for proposed projects shall be reported using the Restoration Project Portfolio Accounting Principles.
- Provide the estimated cost for the entire project. If needed, identify additional planning or design costs as a separate line item in the spreadsheet.
- Implementation status should be: Planning, Design, or Under Construction.

- Identify any total maximum daily load (TMDL) parameters, local water quality objectives (e.g., sediment, phosphorus, trash), and local concerns (e.g., watershed management) that will be addressed. Please use the comments column to describe in detail the co-benefits of a BMP.
- If green stormwater infrastructure (GSI) or watershed management (WM) credits are claimed for stormwater ponds or wetlands, include an example calculation.
- Please ensure that all formulas for subtotals and totals are updated to reflect the applicable time periods.

BMPs for Upland Applications

- Provide the P_E for the project. When the P_E is unknown for a planned project or initiative, use a default of 1 inch to be conservative.
- For stormwater BMPs eligible for the GSI credit, report in the GSI Credit column the value of the impervious acres treated multiplied by 0.35. In the WM Credit column, report the value of the additional acres. Provide the total impervious acres treated in the column labeled Total Impervious Acres (w/ GSI and WM Credits). If a practice is not eligible for GSI credit, the Total Impervious Acres column equals the Impervious Acres column. Note: the GSI and WM credits are applied only to the impervious acres; TN, TP, and TSS calculations are not affected.

Alternative BMPS

- For alternative practices, provide the equivalent impervious acres treated for each project in the Impervious Acres column. Refer to the 2019 Restoration Project Portfolio Accounting Principles for further guidance on how to determine equivalent impervious acres for alternative practices.
- For stream restoration, shoreline stabilization, or outfall stabilization (or “prevented sediment practices”), provide the estimated linear feet in the Length Restored column.
- Street lane miles and/or mass loading reductions may be noted in the comments column.
- For land-use conversion BMPs or programmatic initiatives, identify if the BMP is an annual or permanent practice.
- For street sweeping and inlet cleaning, report lane miles/frequency or mass loading reductions in the comments column.

Restoration Projects To Be Planned, Designed, and/or Constructed From The End Of 4th Generation Permit Through CY 2027

Remaining Unmet Restoration Obligation from Previous Permit (Impervious Acres):

REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	PERMA-NENT OR ANNUAL BMP	NUM BMP	DRAIN -AGE 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 INFRASTRUC-TURE (GSI) CREDIT (IA X 0.35)	WATERSHED MANAGE-MENT (WM) CREDIT	TOTAL IMP ACRES (W/ GSI AND WM CREDITS)	IMPLEMEN-TATION COST	IMPLEMEN-TATION STATUS ⁵	PROJECTED IMPLEMEN-TATION 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)^{2, 4}																			
Street Sweeping*		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
Catch Basin		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
Septic Sytem Pumping		A												0					
		A												0					
		A												0					
		A												0					
		A												0					
Subtotal Operations ³				0				0	0	0	0			0	\$0				
Capital Projects (Unmet Obligations from Previous Permit Term)																			
														0					
														0					
														0					
														0					
Subtotal Capital				0				0	0	0	0	0	0	0	\$0				
Other (Unmet Obligations from Previous Permit Term)																			
														0					
														0					
Subtotal Other				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				
Obligations from Previous Permit That Must Be Continued																			
Annual																			
Street Sweeping		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
Catch Basin Cleaning		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
		A	ANNUAL											0					
Septic Sytem Pumping		A												0					

		A											0					
		A											0					
		A											0					
		A											0					
Subtotal Operations ³				0			0	0	0	0	0	0	0	\$0				
Capital Projects (Proposed to Replace Annual Obligations)																		
													0					
													0					
													0					
													0					
Subtotal Capital				0			0	0	0	0	0	0	0	\$0				
Other (Proposed to Replace Annual Obligations)																		
													0					
													0					
Subtotal Other				0			0	0	0	0	0	0	0	\$0				
Obligations from Previous Permit				0			0.0	0.0	0	0	0.0	0.0	0.0	\$0				
Proposed Restoration for the Next Permit																		
Operational																		
Street Sweeping		A	ANNUAL															
		A	ANNUAL															
		A	ANNUAL															
		A	ANNUAL															
		A	ANNUAL															
Catch Basin Cleaning		A	ANNUAL															
		A	ANNUAL															
		A	ANNUAL															
		A	ANNUAL															
Septic Sytem Pumping		A																
		A																
		A																
		A																
Subtotal Operations (up to 2025) ⁵				0			0	0	0	0	0	0	0	\$0				
Capital Projects																		
													0					
													0					
													0					
													0					
Subtotal Capital (up to 2025)				0			0	0	0	0	0	0	0	\$0				
Other																		
													0					
													0					
Subtotal Other (up to 2025)				0			0	0	0	0	0	0	0	\$0				
Permit (up to 2025)				0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0				
Total for Next Permit and Projected Years				0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0				
Total for Remaining Obligations from The Previous Permit, Continued Obligations, and Proposed Activities for The Next Permit (up to 2025)				0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0				
Total for Remaining Obligations from The Previous Permit, Continued Obligations, and Proposed Activities for The Next Permit (up to 2027)				0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0				

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
A	IMPP	Impervious Surface Elimination (to pervious)
A	IMPF	Impervious Surface Elimination (to forest)
A	FPU	Planting Trees or Forestation on Pervious Urban
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	SHST	Shoreline Management
A	SEPP	Septic Pumping
A	SEPD	Septic Denitrification
A	SEPC	Septic Connections to WWTP
A	FTW	Floating Treatment Wetland
A	FTC	Forest Conservation
A	CLS	Conservation Landscaping
A	RCL	Riparian Conservation Landscaping
A	IDDE	Illicit Discharge Detection & Elimination
A	OTH	Other