

**VPDES MUNICIPAL SEPARATE STORM SEWER
SYSTEM (MS4)
PERMIT: VAR040128**

**Draft Third Phase Chesapeake Bay
TMDL Action Plan**

DEPARTMENT OF JUVENILE JUSTICE (DJJ)

AGENCY 777

BON AIR FACILITY



SEPTEMBER 30, 2023

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1.0 INTRODUCTION

The Virginia Department of Juvenile Justice (DJJ) was originally issued an MS4 general permit in 2014 by the Commonwealth of Virginia for Bon Air Facility. This permit outlines minimum requirements for the operation of the university's storm sewer system, including storm water treatment systems (BMPs), and it is reissued every five years. The College's current permit number is VAR040128, and the permit cycle duration is from November 1, 2018, to October 31, 2023. As a MS4 community, the College is required to complete a draft Chesapeake Bay TMDL Action Plan by October 1, 2023, as part of the 2023 to 2028 (3rd cycle) phase II general permit. The draft CB TMDL Action Plan will be a critical planning tool used to provide permit compliance in a fiscally responsible manner. This draft 3rd cycle Chesapeake Bay TMDL action plan is provided to meet reporting requirements per permit section II, part A12 (b). The draft will outline the DJJ's compliance path for the third permit cycle (2023-2028) of the Chesapeake Bay TMDL. This draft Chesapeake Bay TMDL action plan will be updated for reductions required in Part II A3, A4, and A5 of permit no later than 12 months after the 3rd phase permit's effective date, including changes in land cover.

2.0 LEGAL AUTHORITIES

No new or modified legal authorities, such as ordinances, permits, policy, specific contract language, orders, and interjurisdictional agreements have been implemented and no additional authorities are required at this time.

3.0 REQUIRED LOAD REDUCTIONS

The Virginia Department of Environmental Quality requires that existing MS4 communities provide Pollutant of Concern (POC) reductions based on the 2009 service area during the current permit cycle (November 1, 2023-October 31, 2028). Permit cycle reductions have been determined using expanded MS4 areas as determined by the 2010 census data. Chesapeake Bay TMDL load and cumulative reduction calculations for James River basin calculated below in accordance with Part II A3, A4, and A5.

Table 3 a: Calculation Sheet for Estimating Existing Source Loads and Reduction Requirements for the James River, Lynnhaven, and Creek Basins							
		A	B	C	D	E	F
Pollutant	Subsource	Loading rate (lbs/ac/yr)	Existing Developed Lands as of 6/30/09 served by the MS4 within the 2010 CUA (acres)	Load (lbs/yr)	Percentage of MS4 required Chesapeake Bay total L2 loading reduction	100% cumulative reduction required by 10/31/2028	Sum of 100% cumulative reduction (lb/yr)
Nitrogen	Regulated Urban Impervious	9.39	17.21	162	9%	15	28
	Regulated Urban Pervious	6.99	32.68	228	6%	14	
Phosphorus	Regulated Urban Impervious	1.76	17.21	30	16%	4.85	6.03
	Regulated Urban Pervious	0.5	32.68	16	7.25%	1.18	

4.0 TOTAL REDUCTIONS ACHIEVED AS OF NOVEMBER 1, 2023

The total reductions achieved as of November 1, 2023 for each pollutant of concern (POC) in James River basin are:

Pollutant	Cumulative Reduction (lb/yr)
Nitrogen	35
Phosphorus	2.90

5.0 LIST OF BMPS IMPLEMENTED PRIOR TO NOVEMBER 1, 2023

DJJ has implemented the following projects for removal compliance prior to November 1, 2023. See appendix A for complete Cumulative Reduction achieved Calculations.

Current Implemented BMPS (prior to 11/01/2023)

BMP	Date Implemented	Nitrogen Removal Reduction (lb/yr)	Phosphorus Removal Reduction (lb/yr)
Land Conversion to Forest	2018	11	1.08
Manufactured Treatment Manhole	2020	24	1.82
	Total	35	2.90

6.0 BMPS TO BE IMPLEMENTED WITHIN 60 MONTHS OF EFFECTIVE DATE OF PHASE III PERMIT (BY NOVEMBER 1, 2028)

DJJ already achieved compliance with the third cycle Nitrogen removal. DJJ has a phosphorus deficit of **3.13 lbs/yr** (6.03-2.90). This CB Action Plan will be revised within one year of third cycle permit’s effective date to consider redevelopment projects. Please note that in the third permit cycle, no TSS removal is required.

7.0 PUBLIC PARTICIPATION

The College will consider the public comments during revising and finalizing the CB TMDL Action Plan next year, this section will be updated with any public feedback that is received.

APPENDIX B – CUMULATIVE REDUCTION ACHIEVED CALCULATION

Appendix B
WLA & Compliance Calculations

First, Second, and Third Permit Cycle - Compliance Projects

Proposed Projects	Type	Area Treated (Ac)		Efficiencies			N (lbs)	P (lbs)	Calculation Methodology	Remarks
		Imp.	Perv.	N	P	TSS				
Land Conversion	Pervious to Forest	0	2.25	N/A	N/A	N/A	11	1.08		
Treatment Manhole	Manufactured	3.56	5.66	33	20	66	24	1.82	Ches Bay Program (Adjustor Curves)	Inline CDS from BMP Clearinghouse, Assume RD=1.0 st for TSS Curve
CUMULATIVE TOTALS Achieved							35	2.90		

Cumulative Required							28	6.03
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