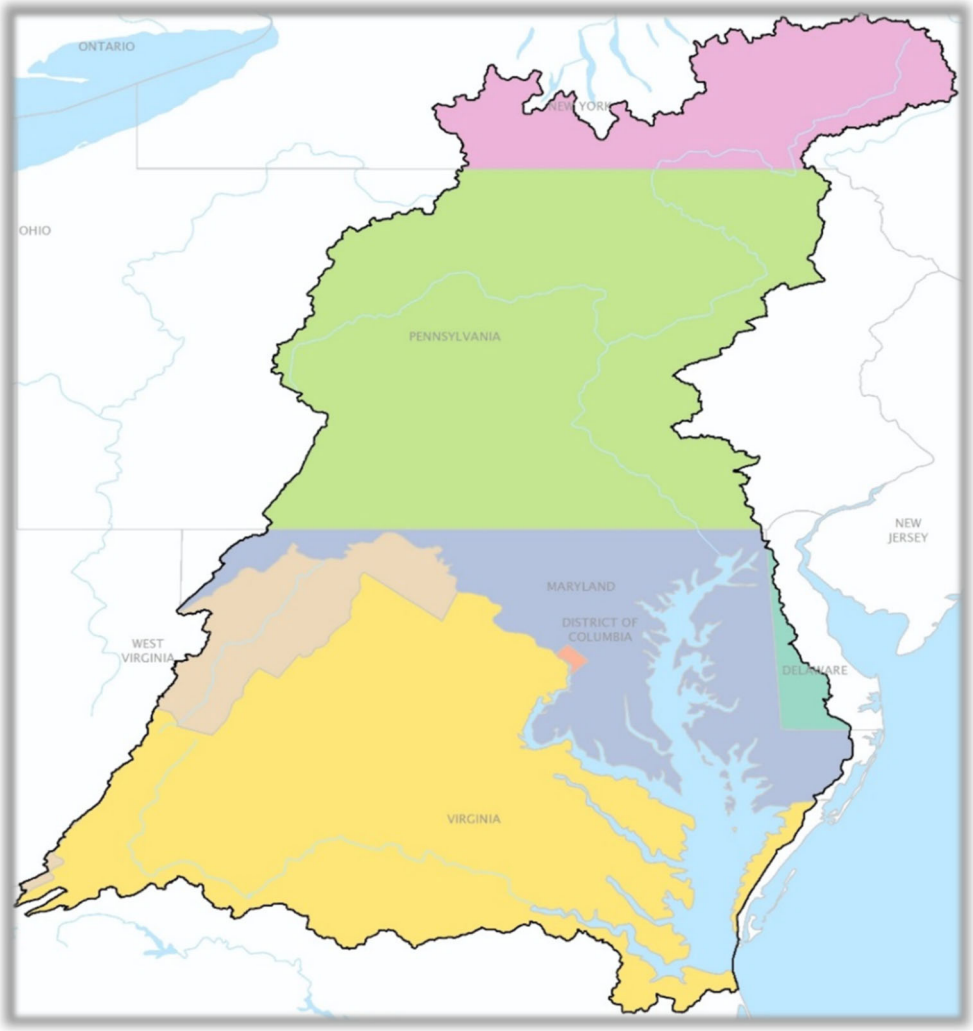
DRAFT CHESAPEAKE BAY PH III TMDL ACTION PLAN

A Plan for Achieving a 60% Reduction (100% Overall)

October 2023



This plan is consistent with the Draft Phase III Chesapeake Bay TMDL requirements

Prince William County Public Schools

PWCS
PRINCE WILLIAM COUNTY PUBLIC SCHOOLS
LAUNCHING THRIVING FUTURES

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EXECUTIVE SUMMARY

Prince William County Schools (PWCS), is authorized to discharge stormwater from its municipal separate storm sewer system (MS4) under the Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharge of Stormwater from Small MS4s (MS4 General Permit). To maintain permit compliance, PWCS implements an MS4 Program Plan that includes best management practices (BMPs) to address six minimum control measures (MCMs) and special conditions for the Total Maximum Daily Load (TMDL) in which PWCS has been assigned a wasteload allocation (WLA). The Environmental Protection Agency (EPA) describes a TMDL as a "pollution diet" that identifies the maximum amount of a pollutant the waterway can receive and still meet water quality standards. A WLA determines the required reduction in pollutant of concern loadings from the MS4s to meet water quality standards. The MS4 General Permit serves as the regulatory mechanism for addressing the load reductions described in the TMDL, predominantly through the requirement of a TMDL Action Plan.

The Chesapeake Bay TMDL was established by the EPA on December 29, 2010 and initiated WLAs for phosphorus, nitrogen and total suspended solids. In response, the Commonwealth of Virginia developed Watershed Implementation Plans (WIPs) that, in part, identify the MS4 General Permit as a mechanism for enforcing load reductions in urban areas. Subsequently, the Commonwealth included special conditions into the latest MS4 General Permit to address the reductions required by the TMDL for the pollutants of concern. The WIPs intended the reductions to be achieved over the course of three 5-year permit cycles, with the first cycle (2013 – 2018) requiring 5% of the reductions be achieved, second cycle (2018 – 2023) requiring 35% additional reduction achieved, and third cycle (2023 – 2028) requiring 100% reduction achieved.

PWCS has developed Phase I, Phase II, and now Draft Phase III Chesapeake Bay TMDL Action Plans consistent with the Virginia Department of Environmental Quality (DEQ) Guidance Memos No. 15-2005 and 20-2003. The guidance documents were used to determine the required pollutant load reductions for the previous and current permit cycles and to evaluate the means and methods for achieving the reductions. Consistent with the DEQ Guidance documents, oversized BMPs installed, land use conversion (grass to forested or grass to meadow) on multiple properties, nutrient management plans implemented on unregulated lands, and potential purchase of remaining nutrient credits. During the initial permit cycle, street sweeping was also implemented as a main method to meet 5% reductions, but has since been removed from calculations as the lane mile approach is now required based on guidance memo 20-2003. The aforementioned methods accounted for the 5% reduction requirement and partial completion of the second permit cycle 40% reduction requirement. To achieve the full 40% reduction and ultimately 100% reduction for nutrients not yet obtained, PWCS will continue to review plan sets for oversized BMP crediting as well consider purchasing nutrient credits from a nutrient bank.

Continued implementation of the PWCS MS4 Program is consistent with provisions of the iterative MS4 Program and constitutes compliance with the MS4 General Permit standard of reducing pollutants to the maximum extent practicable.

Table 1: Summary of POC Load Reductions

POC	Phase I (5% Load Reduction)	Phase II (35% Load Reduction)	Phase III (60% Additional Load Reduction)	(100 % Total Load Reduction)
Nitrogen	88.45	619.14	1061.38	1768.98
Phosphorus	9.92	69.45	119.06	198.43

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Acronyms

BMP	Best Management Practice
CGP	Construction General Permit
CUA	Census Urban Area
CWA	Clean Water Act
DEQ	Virginia Department of Environmental Quality
EOS	Edge of Stream
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
LA	Load Allocation
L2	Level 2
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
MS4 GP	General Permit for Discharge of Stormwater from Small MS4s
NMP	Nutrient Management Plan
POC	Pollutant of Concern
PWCS	Prince William County Schools
RLDA	Regulated Land Disturbing Activity
SWPPP	Stormwater Pollution Prevention Plan
SWM	Stormwater Management
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
VAC	Virginia Administrative Code
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
WIP	Watershed Implementation Plan
WLA	Wasteload Allocation

Definitions

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices, including both structural and nonstructural practices, to prevent or reduce the pollution of surface waters and groundwater systems.

Census Urbanized Area (CUA) are areas identified as urban by the United States Census Bureau (latest census). MS4 regulations only apply within CUAs.

Existing Sources are pervious and impervious urban land uses served by the MS4 as of June 30, 2009.

Impervious Cover is a surface composed of material that significantly impedes or prevents natural infiltration of water into soil.

L2 Scoping Run is a model run to determine required reductions from urban sources as of June 30, 2009. The L2 reductions are summarized in the following table:

Pollutant of Concern	Regulated Impervious (%)	Regulated Pervious (%)
Nitrogen	9	6
Phosphorus	16	7.25
Sediment	20	8.75

Municipal Separate Storm Sewer System (MS4) is a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains that are:

- Owned or operated by a federal state, city, town, county, district, association, or other public body, created by or pursuant to state law that discharges to surface waters;
- Designed or used for collecting or conveying stormwater;
- Not a combined sewer; and
- Not part of a publicly owned treatment works.

New Sources are pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009.

PWCS MS4 Program Plan is the guiding document of the PWCS's MS4 Program and includes best management practices to address conditions of the MS4 General Permit.

Pollutants of Concern (POC) are total nitrogen ("TN"), total phosphorus ("TP"), and total suspended solids ("TSS").

Prior Developed Lands are lands that has been previously utilized for residential, commercial, industrial, institutional, recreation, transportation, or utility facilities or structures, and that will have the impervious areas associated with those uses altered during a land-disturbing activity.

Transitional Sources are regulated land disturbing activities that are temporary in nature and discharge through the MS4.

1.0 INTRODUCTION AND PURPOSE

Mandated by Congress under the Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NPDES) storm water program includes the Municipal Separate Storm Sewer System (MS4), Construction, and Industrial General Permits. In Virginia the NPDES Program is administered by the Department of Environmental Quality (DEQ) through the Virginia Stormwater Management Program (VSMP) and the Virginia Pollutant Discharge Elimination System (VPDES). Price William County Schools (PWCS) is authorized to discharge stormwater from its MS4 under the VPDES General Permit for Discharge of Stormwater from Small MS4s (MS4 General Permit). As part of the MS4 General Permit authorization, PWCS developed and implements an MS4 Program Plan with best management practices (BMPs) to address the six minimum control measures (MCMs) and the special conditions for applicable total maximum daily loads (TMDLs), as outlined in the MS4 General Permit.

"PWCS' objective is to protect our local waterways by managing stormwater pollutants through implementation of best management practices."

The plan presented herein demonstrates how PWCS's MS4 Program Plan addresses required nutrients (nitrogen and phosphorus) and sediment in its MS4 regulated area consistent with the requirements of the Chesapeake Bay TMDL Phase III.

1.1 Total Maximum Daily Loads

A TMDL is the total amount of a given pollutant that a waterbody can assimilate and still meet water quality standards. Typically, TMDLs are represented numerically in three main components: Waste Load Allocations (WLAs), a Load Allocation (LA), and a Margin of Safety. A WLA is the allocated amount of pollutant from areas discharging through a pipe or other conveyance considered a point source. Point sources include sewage treatment plants, industrial facilities and storm sewer systems. In contrast, an LA is the amount of pollutant from existing non-point sources and natural background sources such as agricultural runoff and atmospheric deposition. As a point source discharge, MS4's are assigned a WLA representing the annual loading of the pollutant of concern (POC) that can be discharged from its regulated MS4 area.

1.2 MS4 General Permit Special Conditions

PWCS's MS4 General Permit includes a series of special conditions that must be addressed for permit compliance where PWCS has been assigned a WLA as part of an approved TMDL. The special conditions state that any TMDL approved by the State Water Control Board (SWCB) assigning a WLA to an MS4 must be addressed by the Permittee through the measurable goals of their MS4 Program Plan.

In 1998, large portions of Chesapeake Bay and its tidal tributaries within Virginia were identified as not meeting water quality standards and listed as impaired because of excess nitrogen, phosphorus and sediment. Due to the Chesapeake Bay waters remaining on the impaired waters list, the Environmental Protection Agency (EPA) required that a TMDL be developed, which was subsequently approved on December 29, 2010.

1.3 Watershed Implementation Plan and Strategy for MS4s

The Chesapeake Bay Watershed Implementation Plans (WIPs) are plans that detail how and when the six Chesapeake Bay states and the District of Columbia will meet pollutant allocations. In the Phase I and Phase II WIPs for the Chesapeake Bay TMDL, Virginia committed to a phased approach to reducing nutrients and suspended solids discharging from MS4s. The issuance of the 2013-2018 MS4 General Permit set forth special conditions required by all MS4 General Permit holders within the Chesapeake Bay watershed. In part, the special conditions require the permittee to achieve 5% of the required reductions identified in the Level 2 Scoping Run from existing baseline loads by July 1, 2018, 40% from baseline loads by July 1, 2023, and 100% from baseline loads by July 1, 2028. Baseline loads are defined as those occurring on June 20, 2009 and are computed using loading rates provided in the MS4 General Permit.

1.4 PWCS Chesapeake Bay Action Plan

The PWCS Chesapeake Bay Action plan presented herein provides a review of the current MS4 program, which demonstrates PWCS' ability to ensure compliance with the special conditions and includes the means and methods PWCS plans to implement to achieve 100% load reduction by July 1, 2028. This Action Plan was developed to comply with the special conditions of the MS4 General Permit (9VAC25-890) and under the advisement of DEQ's Guidance Memo No. 15-2005 (now Guidance Memo No. 20-2003), which provides background information and procedures to meet the Chesapeake Bay TMDL special condition requirements.

2.0 APPLICABLE OVERVIEW OF PWCS' MS4 PROGRAM

PWCS MS4 Permit regulates stormwater discharges from areas included within census urbanized areas (CUAs). In 2009, the PWCS MS4 included 106 schools and administrative facilities within Price William County. PWCS' collective efforts, as described in the PWCS MS4 Program Plan, result in significant reduction of pollutants that could potentially be discharged from its regulated MS4. Practices already included in the PWCS Program Plan that address the Chesapeake Bay TMDL POCs, sediment and nutrients, are described in the following sub-sections.

2.1 Current Program and Existing Legal Authority

As a non-traditional MS4, PWCS does not have the ability to create legal authorities and has not identified any necessary legal authorities necessary to meet the requirements of the special conditions. However, PWCS' MS4 Program includes Minimum Control Measures (MCMs) that include policies and procedures consistent with the goals of the Chesapeake Bay TMDL.

- *MCM 1 (Public Education and Outreach)* – PWCS MS4 Program includes a Public Education and Outreach Program (PEOP). The PEOP is described in BMP 1.2 of the PWCS MS4 Program Plan and includes the distribution of educational materials regarding methods to reduce introduction of the POCs into stormwater runoff.

- *MCM 3 (Illicit Discharge Detection and Elimination)* – PWCS' MS4 Program includes an Illicit Discharge Detection and Elimination (IDDE) Program that includes written procedures to detect, identify, and address non-stormwater discharges, including illegal dumping, to the MS4 with policies and procedures for when and how to use legal authorities. PWCS prohibits non-stormwater discharges into the storm sewer system. IDDE BMPs are described in the Minimum Control Measure 3 BMPs in the PWCS MS4 Program Plan. The IDDE Program is effective at addressing the POC through staff training, prohibition of illicit discharges, and annual outfall screening.

- *MCM 4 (Construction Site Runoff Control)* – PWCS MS4 Program utilizes Prince William County's Virginia Stormwater Management Plan review structure which ensures review of construction sites for erosion control and stormwater compliance on construction sites with local, state, and federal laws and regulations. However, PWCS does perform construction inspections and enforcement on regulated construction sites. The Construction Site Runoff Control Program is especially effective at reducing downstream conveyance of sediment from transitional sources.

- *MCM 5 (Post-Construction Stormwater Management)* – PWCS' MS4 Program includes a Post-Construction SWM Program that ensures water quality criteria in the Virginia Stormwater Management Regulations has been achieved on new developments and developments on prior developed land since July 1, 2009. Post-construction, the Program includes ensures

long-term inspections and maintenance of stormwater management BMPs. Minimum Control Measure 5 BMPs in the PWCS MS4 Program Plan describes post-construction stormwater management BMPs.

- *MCM 6 (Good Housekeeping)* – PWCS's MS4 Program includes a Pollution Prevention/Good Housekeeping Program that includes policies and procedures to ensure that day-to-day operations minimize the exposure of pollutants to rainfall on school grounds to the maximum extent practicable. The program is supported with PWCS' Pollution Prevention & Good Housekeeping Manual and annual training for applicable staff. PWCS also plans to utilize contract language to ensure staff have appropriate certifications for application of fertilizers per a Nutrient Management Plan(s), approved by Virginia Department of Conservation and Recreation. Minimum Control Measure 6 BMPs in the PWCS MS4 Program Plan describe pollution prevention and good housekeeping BMPs.

2.2 New or Modified Legal Authorities

Consistent with the MS4 General Permit, PWCS uses an iterative approach to ensure the individual schools and administrative buildings are minimizing the discharge of pollutants through its MS4 to the MEP. The iterative approach is implemented through the annual reporting process with the review of the effectiveness of each MS4 Program Plan BMP. BMPs are modified, as necessary, to increase effectiveness. If new or modified BMPs are identified as part of the annual measure of effectiveness as described for each BMP in the PWCS MS4 Program Plan annual reporting, they will be reported through the annual report process.

As a non-traditional MS4, PWCS does not have the ability to create legal authorities. No new policies and procedures or modifications to existing policies and procedures were identified as necessary to meet the requirements of the special conditions. Means and methods to meet the special conditions are described in Section 4.

3.0 POLLUTANT OF CONCERN (POC) LOADINGS

The MS4 General Permit required PWCS to estimate the annual loadings and the POC load reductions required from the L2 Scoping Run. To complete these requirements, PWCS determined the amount of pervious and impervious land cover for their regulated properties and input the data into the appropriate loading and reduction tables provided in the MS4 General Permit (Apex, 2019). The methodology to determine sediment and nutrient loadings and the required reductions are described in the following sub-sections.

3.1 Baseline Loading Characterization

Prior to estimating the POC loadings and required reductions, PWCS first evaluated the extent of their regulated MS4 area, including the regulated acres of urban pervious and impervious surface served by its MS4 as of June 30, 2009.

As of June 30, 2009, the PWCS MS4 System was comprised of approximately 2,015.49 acres of land across 106 properties located throughout Prince William County, Virginia. An additional eleven PWCS properties (290.43 acres) were located outside of the regulated 2000 or 2010 Census Urbanized Areas (CUA) and therefore are not currently considered part of the regulated PWCS MS4 System (Apex, 2019). While PWCS properties are located throughout the county and therefore fall into several separate Hydraulic Unit Codes (HUCs), all PWCS discharge water bodies are within the Potomac River Basin. All load reduction calculations for the purposes of this document have been performed utilizing the corresponding Potomac River Basin tables from this permit.

PWCS utilized base aerial imagery dated 2011, provided through the Virginia Geographic Information Network and Virginia GIS Clearinghouse to identify the ground features present to delineate impervious vs pervious area based on the below categories.

Table 2: Impervious vs. Pervious Surface Classification

Impervious	Pervious
Structures – Schools, Support Buildings, Portable Buildings	Grassed Areas – Lawns, Athletic Fields, Medians
Paved Areas – Driveways, Roads, Access Roads, Parking Lots	Mulched Areas – Playgrounds, Planting Beds
Paved Athletic Areas – Tracks, Tennis Courts, Basketball Courts	Vegetated Areas – Forests*, Medians, Planting Beds
Gravel Areas	Water Features
Sidewalks	Bare Soil Areas

* In accordance with the Bay Program Model, forested lands are permitted to be excluded from initial reduction calculations – due to the minimal forested land coverage in the MS4, PWCS has elected to include these forested lands in MS4 calculations in order to minimize time and effort in calculating regulated area totals.

A summary of baseline land cover results per school is provided in Table 3.

Table 3: Impervious vs. Pervious Surface Acreage Classification of PWCS Existing Properties – (Developed Pre-6/30/2009)

Property	Year Built	HUC/Discharge Water Body	Total Acreage	Impervious Acreage	Pervious Acreage
Alvey Elementary School	2003	PL43/Little Bull Run	20.17	5.35	14.82
Ann Ludwig Support	1975	PL49/Neabsco Creek	4.77	1.31	3.46
Antietam Elementary School	1990	PL47/Occoquan River	14.86	3.76	11.1
Ashland Elementary School	2002	PL51/Powells Creek	18.05	5.91	12.14
Battlefield High School	2004	PL43/Little Bull Run	78.34	28.59	49.75
Bel-Air Elementary School	1968	PL49/Neabsco Creek	15	3.23	11.77
Belmont Elementary School	1967	PL48/Occoquan River	14.28	2.73	11.55
Bennett Elementary School	1996	PL41/Occoquan River	15.29	4.63	10.66
Benton Middle School & Coles Elementary School	2000, 1968	PL51/Powells Creek	65.19	16.53	48.66
Beville Middle School	1991	PL49/Neabsco Creek	42.13	9.61	32.52
Bristow Run Elementary School	1998	PL34/Broad Run	21.13	5.08	16.05
Buckland Mills Elementary School	2006	PL32/Broad Run	15	5.33	9.67
Bull Run Middle School	2002	PL43/Little Bull Run	39.35	10.71	28.64
Cedar Point Elementary School	2001	PL34/Broad Run	15.48	5.29	10.19
Dale City Elementary School	1967	PL49/Neabsco Creek	14.83	4.63	10.2
Dumfries Elementary School	1918	PL52/Quantico Creek	10	2.76	7.24
Ellis Elementary School & Stonewall Jackson High School	2004, 1973	PL44/Middle Bull Run	67.08	28.14	38.94
Enterprise Elementary School	1978	PL49/Neabsco Creek	14.97	3.24	11.73
Featherstone Elementary School	1961	PL50/Potomac River	11.54	2.87	8.67

Property	Year Built	HUC/Discharge Water Body	Total Acreage	Impervious Acreage	Pervious Acreage
Fitzgerald Elementary School	2008	PL51/Powells Creek	11.53	5.25	6.28
Forest Park High School	2000	PL51/Powells Creek	79.07	27.84	51.23
Freedom High School	2004	PL49/Neabsco Creek	76.99	26.77	50.22
Gainesville Middle School	2007	PL34/Broad Run	39.41	10.84	28.57
Gar-Field High School & Gar-Field Fuel Center	1972, 2014	PL49/Neabsco Creek	91.53	23.53	68
Glenkirk Elementary School	2005	PL32/Broad Run	15.57	5.91	9.66
Godwin Middle School	1970	PL49/Neabsco Creek	28.6	8.83	19.77
Graham Park Middle School	1963	PL52/Quantico Creek	21.89	5.7	16.19
Henderson Elementary School	1985	PL51/Powells Creek	14.9	4.12	10.78
Hylton High School & Hylton Fuel Center	1991, 1990	PL49/Neabsco Creek	72.5	25.04	47.46
Kerrydale Elementary School	1973	PL49/Neabsco Creek	14.9	2.57	12.33
Kilby Elementary School	1959	PL50/Potomac River	14.13	2.48	11.65
King Elementary School	1981	PL49/Neabsco Creek	15.58	2.8	12.78
Lake Ridge Elementary School	1983	PL47/Occoquan River	15.07	4.62	10.45
Lake Ridge Middle School	1989	PL47/Occoquan River	34.1	9.37	24.73
Leesylvania Elementary School	1996	PL49/Neabsco Creek	16.29	5.44	10.85
Loch Lomond Elementary School	1962	PL44/Middle Bull Run	10.71	4.45	6.26
Lynn Middle School	1964	PL50/Potomac River	28.57	7.09	21.48
Marsteller Middle School	2002	PL34/Broad Run	36.42	10.95	25.47
Marumsco Hills Elementary School	1966	PL49/Neabsco Creek	10.45	4.13	6.32
McCuin Bus Center	2002	PL34/Broad Run	11.5	7.07	4.43

Property	Year Built	HUC/Discharge Water Body	Total Acreage	Impervious Acreage	Pervious Acreage
McAuliffe Elementary School	1989	PL49/Neabsco Creek	15.05	3.32	11.73
Minnieville Elementary School	1972	PL49/Neabsco Creek	15.24	5.22	10.02
Montclair Elementary School	1991	PL51/Powells Creek	16.1	4.26	11.84
Mountain View Elementary School	1995	PL43/Little Bull Run	28.35	5.13	23.22
Mullen Elementary School	1990	PL34/Broad Run	15	5.46	9.54
Neabsco Elementary School	1969	PL49/Neabsco Creek	12.79	3.87	8.92
New Dominion Alternative	1975	PL46/Lower Bull Run	9.45	2.27	7.18
Old Bridge Elementary School, Woodbridge High School, & Woodbridge Fuel Center	1995, 1974, 1996	PL47/Occoquan River	70.54	23.74	46.8
Osbourn Park High School	1975	PL46/Lower Bull Run	51.38	20.6	30.78
Parks (Rosa) Elementary School	2006	PL49/Neabsco Creek	15.58	5.32	10.26
Parkside Middle School	1963	PL44/Middle Bull Run	30	10.77	19.23
Pattie Elementary School	1978	PL52/Quantico Creek	15	3.47	11.53
Penn Elementary School	1998	PL49/Neabsco Creek	15.03	4.74	10.29
Pennington Traditional	1969	PL44/Middle Bull Run	15	2.83	12.17
Porter Traditional	2004	PL49/Neabsco Creek	14.48	5.73	8.75
Potomac Bus Center	1988	PL51/Powells Creek	16.76	9.24	7.52
Potomac View Elementary School	1964	PL50/Potomac River	12.37	3.88	8.49
Rippon Middle School	1967	PL49/Neabsco Creek	30	9.63	20.37
River Oaks Elementary School	1990	PL51/Powells Creek	15.18	4.35	10.83
Rockledge Elementary School	1972	PL48/Occoquan River	16.15	3.06	13.09

Property	Year Built	HUC/Discharge Water Body	Total Acreage	Impervious Acreage	Pervious Acreage
Saunders Middle School	1988	PL49/Neabsco Creek	29.46	9.14	20.32
Signal Hill Elementary School	2000	PL46/Lower Bull Run	24.46	5.06	19.4
Sinclair Elementary School	1968	PL44/Middle Bull Run	25.4	4.18	21.22
Springwoods Elementary School	1985	PL47/Occoquan River	15.11	4.22	10.89
Sudley Elementary School	1972	PL44/Middle Bull Run	13.72	4.67	9.05
Swans Creek Elementary School	2001	PL52/Quantico Creek	18.49	4.85	13.64
Tyler Elementary School	1968	PL43/Little Bull Run	24.63	4.55	20.08
Unity Braxton Middle School	1964	PL44/Middle Bull Run	48.03	11.27	36.76
Vaughan Elementary School	1964	PL50/Potomac River	13.55	3.53	10.02
Victory Elementary School	2005	PL34/Broad Run	21.23	5.69	15.54
Washington-Reid Annex	1951	PL52/Quantico Creek	9.19	3.32	5.87
West Gate Elementary School	1964	PL44/Middle Bull Run	12.11	4.22	7.89
Westridge Elementary School	1989	PL47/Occoquan River	15	4.19	10.81
Woodbridge Middle School	1963	PL49/Neabsco Creek	37.36	6.86	30.5
Williams (Mary) Elementary School, Potomac Middle School, & Potomac High School	2004, 2006, 1981	PL51/Powells Creek	121.13	36.48	84.65
TOTAL			**2,015.49**	**603.62**	**1,411.87**

(Apex, 2019)

3.2 Annual Loadings from Existing Sources & 100% Load Reduction Requirements

The data summarized in Table 3 was used to estimate pollutant loads from existing sources as of June 30, 2009, using the Potomac River Basin calculation sheet for estimating existing source loads provided in the MS4 General Permit. Table 4 below shows the 100% cumulative reduction requirement.

Table 4: Calculation Sheet for Estimating 100% Existing Source Loads and Reductions Requirements for the Potomac River Basin (Based on II.A.3 Table 3b)

Pollutant	Subsource	Loading Rate (lbs/ac/yr)	Existing Developed lands as of 6/30/2009 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 6/30/2029 (lbs/yr)	Sum of 100% cumulative reduction (lbs/yr)
Nitrogen	Regulated urban impervious	16.86	603.62	10,177.03	9%	915.93	1768.98
	Regulated urban pervious	10.07	1,411.87	14,217.53	6%	853.05	
Phosphorus	Regulated urban impervious	1.62	603.62	977.86	16%	156.46	198.43
	Regulated urban pervious	0.41	1,411.87	578.87	7.25%	41.97	
Total Suspended Solids	Regulated urban impervious	1171.32	603.62	707,032.18	20%	141,406.44	163,124.53
	Regulated urban pervious	175.8	1,411.87	248,206.75	8.75%	21,718.09	

3.3 Annual Loadings from New Sources and Grandfathered Projects

In addition to computing baseline loadings from existing conditions as of June 30, 2009, the special conditions require the determination of offsets for increased loads from development occurring on or after July 1, 2009, including grandfathered projects. No offsets are necessary for new sources since:

- Loadings from new sources are addressed with the water quality criteria in the stormwater management regulations. Water quality criteria for new sources from regulated development between July 1, 2009 and June 30, 2014 was based on an average land cover condition of 16% and therefore appropriate offsets were incorporated within the development project's stormwater management plan.
- No grandfathered projects occurred on or after July 1, 2009.

3.4 Remaining 40% Load Reductions

The 40% L2 Scoping run requirements were partially met through the use of implemented oversized BMPs, nutrient management plans, and land conversion. PWCS is working to secure the funding to purchase the remaining required credits or evaluate additional BMPs to meet the 40% requirement. Table 5 depicts the 40% POC reductions estimated to be achieved by PWCS annually based on the selected best management practices. For a complete analysis of the

reductions shown in Table 5 below, refer to document titled "*Prince William County Schools Chesapeake Bay TMDL Action Plan - A Plan for Achieving a 35% Reduction (40% Overall)* ".

Table 5: Summary of BMPs Showing Progress Towards 40% POC Reductions (Prior to October 1, 2023)

POC	40% Required Reduction (lbs/yr)	Land Use Conversions (lbs/yr)	Unregulated Nutrient Management Plans (lbs/yr)	Oversized BMPs in CUA (lbs/yr)	40% Reduction Achieved (lbs/yr)	Additional 40% Reduction Required (lbs/yr)
TN	707.59	102.75	10.8	19.88	133.43	574.16
TP	79.37	24.66	0.22	3.21	28.09	51.28
TSS	65,249.81	5,202.38	0	0	5,202.38	60,047.4

3.5 100% Load Reductions After Crediting Existing Practices

The 2023 – 2028 MS4 General Permit will require PWCS to reduce an additional 60% of the L2 Scoping Run POC reductions for existing sources as of June 30, 2009 (for a total of 100% reductions). The required load reductions were calculated using the calculation sheet in the MS4 General Permit for determining POC reductions for the Potomac River basin. The required load reductions are detailed above in Table 4. Due to the 40% loading reduction not yet being achieved, the actual cumulative 100% reductions needed to be obtained are summarized below in Table 6 (i.e. remaining Phase II required load reductions plus Phase III required load reductions).

Table 6: Phase III Total Load Reduction Required

POC	1. Remaining Phase II Reductions	2. Phase III (60% Load Reduction)	Total load reduction required (sum of columns 1 and 2)
Nitrogen	574.16	1061.39	1635.55
Phosphorus	51.28	119.06	170.34

4.0 MEANS TO ACHIEVE 100% POC REDUCTIONS

DEQ's Guidance Memo No 20-2003 was used to identify appropriate means and methods for achieving the required reductions computed in Section 3.5. A review of PWCS' existing stormwater management facilities determined that the required reductions are not achieved for the MS4 General Permit cycle II (40% reduction) or III (100%) as described in the following sub-sections, but progress towards achievement and a timeline for achievement are established. Reduction credits described in this section demonstrate progress towards compliance with the reduction requirements for the 2023 - 2028 MS4 General Permit cycle.

4.1.a Land Use Change

During Phase II PWCS utilized Land Use Change for 10 properties. For Phase III permit cycle Prince William County Schools will review properties to determine if any additional land is available for

land use conversion through reforestation or no-mow zones in accordance with Table V.H.1 of the Department-provided document.

4.1.b Oversized BMPs within CUA

Per the VDEQ Guidance Memo 20-2003, oversized BMPs which reduce more nutrients than is needed for development may utilize the excess credits to offset POC reductions required under the Chesapeake Bay TMDL. During Phase II oversized credit was available at 5 sites reviewed. PWCS will continue to review the already in-place BMPs to determine if oversized credit is available to confirm all oversized nutrient credits are accounted for.

4.1.c Nutrient Bank Purchase

PWCS will continue evaluating the purchase of nutrient credits to meet the required Phase III nutrient reduction requirement. If selected, nutrient bank credits will be purchased from a certified mitigation bank in the Potomac Watershed.

5.0 IMPLEMENTATION SCHEDULE (100% LOAD REDUCTIONS)

The 100% implementation schedule is detailed below in Table 7.

Table 7: Schedule for 100% Overall POC Reductions from MS4 Program

Step	General Description	Measurable Goal	Completion Date
1	5% reduction requirement complete. Evaluate means and methods to meet 40% and make progress towards the 100% reductions. Evaluate and credit existing BMPs, no mow zones and nutrient credits.	Documentation & Calculations	January 2024
2	If nutrient purchase are selected, develop RFP to obtain nutrient credits.	Potential RFP for nutrient credit purchase.	June 2024
3	Complete 40% reduction and demonstrate progress towards 100% reduction requirement through nutrient credit purchase or evaluate additional BMPs and revise Action Plan.	Obtain certificate of nutrient credit purchase or revise Action Plan to include additional BMPs	August 2024
4	Annually evaluate additional BMPs in accordance with Section 4.0 to demonstrate progress towards the 100% load reduction requirement.	Annually	July 2025 – July 2028
5	Achieve 100% load reduction requirement.	Annual Report	July 2028

5.1 Supplemental Means and Methods for 100% POC Reductions

In addition, the remaining Minimum Control Measure BMPs described in Section 2.1 will be implemented by PWCS as part of the PWCS MS4 Program Plan. Continued implementation of these BMPs demonstrates implementation of the PWCS Chesapeake Bay Action Plan to the maximum extent practicable.

5.2 Public Comment Period for 100% POC Reductions

PWCS will solicit public comment on the Plan and consider all comments that are provided for potential plan modifications. Public comment will be provided through the following means:

- A draft of the Chesapeake Bay TMDL Action plan will be posted on PWCS' website for a minimum of 15 total days.
- An email will be sent to the target audience identified in Minimum Control Measure 1 of the PWCS MS4 Program Plan with a link where the public may comment on the Action Plan.

5.3 Annual Reporting for 100% POC Reductions

The effectiveness of the Action Plan will be measured through achieving the required reductions which will be report through the MS4 General Permit annual reporting requirements.