Draft Chesapeake Bay TMDL Action Plan

Third MS4 Permit Cycle
100% Load Reductions

Arlington Public Schools
2770 S. Taylor Street
Arlington, VA 22206

August 2023 – Final Submittal

Prepared by:
AECOM

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Acronyms and Abbreviations

ac	acre
ACG	Arlington County Government
APS	Arlington Public Schools
B-WET	Bay Watershed Education and Training
BMP	Best Management Practice
DEQ	Virginia Department of Environmental Quality
E&SC	Erosion and Sediment Control
EOS	Edge of Stream
EPA	United States Environmental Protection Agency
GIS	Geographic Information Systems
HUC	Hydrologic Unit Code
lb	pound
LDA	Land Disturbing Activity
MCM	Minimum Control Measure
MOA	Memorandum of Agreement
MS4	Muncipal Separate Storm Sewer Systems
MS4 Permit	General Permit for Discharges of Stormwater from Small MS4s No. VAR040127
MWEE	Meaningful Watershed Education Experience
NOAA	National Oceanic and Atmospheric Administration
NMP	Nutrient Management Plan
PL24	Potomac River - Pimmit Run
PL25	Potomac River - Four Mile Run
POC	Pollutant of Concern
RLD	Registered Land Disturber
SAV	Submerged Aquatic Vegetation
SWM	Storm Water Management
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
VSMP	Virginia Stormwater Management Program
WLA	waste load allocation
yr	year

1. Introduction

Arlington Public Schools (APS) is authorized to discharge under the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) No. VAR040127 (MS4 Permit), effective November 1, 2018 through October 31, 2023, issued by the Virginia Department of Environmental Quality (DEQ). DEQ has issued a new MS4 Permit (VAR04), effective November 1, 2023 through October 31, 2028. Part II.A of the MS4 Permit (Chesapeake Bay TMDL Special Condition) requires compliance with nitrogen, phosphorus, and sediment load reductions set forth in the Chesapeake Bay total maximum daily load (TMDL)[1] through the preparation and implementation of a Chesapeake Bay TMDL Action Plan. Part II.B of the MS4 Permit (Local TMDL Special Condition) requires compliance with waste load allocations (WLAs) assigned to permittees discharging to impaired waters for which a TMDL has been developed and approved by the United States Environmental Protection Agency (EPA). As of the date of this report, APS has not been assigned a WLA in any EPA-approved TMDL, and this report focuses solely on compliance with the Chesapeake Bay TMDL.

As established by the DEQ, APS must reduce its share of Chesapeake Bay TMDL pollution by 100 percent (%) total during the third permit cycle (2023–2028). APS's overall strategy to meet the TMDL requirements includes nutrient and sediment credit purchase with the Arlington Water Pollution Control Plant and pollutant reduction from structural stormwater best management practices (BMPs) as two key strategies to meet the pollution reduction requirements. While APS does not implement standalone BMPs for the purposes of TMDL compliance, APS construction projects are subject to stringent regulation of the stormwater runoff from development/redevelopment by Arlington County Government (ACG). BMPs installed as part of development and redevelopment projects will continue to achieve incremental and cumulative reductions in stormwater pollutants.

This Chesapeake Bay TMDL Action Plan was developed to document a minimum of 100% reduction of the total Chesapeake Bay TMDL pollutant of concern (POC) required for APS's MS4 service area during the five-year MS4 Permit cycle from November 2023 through October 2028. The plan meets the requirements of the MS4 Permit and complies with the DEQ Guidance Memo No. 20-2003 Chesapeake Bay TMDL Special Condition Guidance, dated February 6, 2021.

1.1 Major Permit Changes Related to Chesapeake Bay TMDL

In its recently released MS4 Permit (VAR04), effective November 1, 2023 through October 31, 2028, DEQ has made a significant change to the previous MS4 permit's Chesapeake Bay TMDL Special Condition by eliminating the sediment reduction requirements for the Chesapeake Bay TMDL. On August 12, 2019, the EPA Chesapeake Bay Program Principals' Staff Committee approved the process, timeline, and proposed language for redeveloping sediment targets within the Chesapeake Bay. This language states in part, "research in the Chesapeake Bay has shown that the water clarity/submerged aquatic vegetation (SAV) water quality standard is generally more responsive to nutrient load reductions than it is to reduction in sediment loads….The sediment targets will not affect the BMPs called for in the WIP, and are not intended to be the driver for implementation moving forward." On November 22, 2022, the DEQ Agency Director sent a letter to the EPA Region 3 Administrator indicating that DEQ intended to revise MS4 general permit regulation to remove the previously required sediment load reductions. Based upon the above referenced Virginia Phase III WIP and November 22, 2022 letter, the proposed general permit Chesapeake Bay TMDL special condition (Part II A) has been revised, removing previously required sediment reductions under the 2018 general permit. Consequently, **sediment (TSS) reduction does not appear in this action plan, as it is not required as part of the third MS4 permit cycle.** The Chesapeake Bay TMDL Plan will continue to implement strategies to reduce TN and TP by 100% by October 31, 2028 as required by the third MS4 permit cycle.

[1] United States Environmental Protection Agency, Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus, and Sediment, December 29, 2010.

1.2 Required Action Plan Elements

Table 1-1 provides each of the requirements of APS's MS4 Permit relevant to the TMDL and the specific section where the requirement is addressed in this Chesapeake Bay TMDL Action Plan.

Table 1-1 – Action Plan and Permit Compliance Crosswalk

APS Action Plan Section	Element from DEQ TMDL Special Condition Guidance	MS4 Permit Part	MS4 Permit Requirement
2	**Existing, new, or modified legal authority**	*II.A.12.b(1)*	*Any new or modified legal authorities, such as ordinances, permits, policy, specific contract language, orders, and inter-jurisdictional agreements, implemented or needing to be implemented to meet the requirements of Part II A 3, A 4, and A 5.*
3	**The Load and Cumulative Reduction Calculations**	*II.A.12.b(2)*	*The load and cumulative reduction calculations calculated in accordance with Part II A 3, A 4, and A 5.*
4	**The total reductions achieved as of November 1, 2023, for each pollutant of concern**	*II.A.12.b(3)*	*The total reductions achieved as of November 1, 2023, for each pollutant of concern.*
5	**List of BMPs implemented prior to November 1, 2023 to achieve reductions for the Chesapeake Bay TMDL**	*II.A.12.b(4)*	*A list of BMPs implemented prior to November 1, 2023, to achieve reductions associated with the Chesapeake Bay TMDL including:* *a) The date of implementation; and* *b) The reductions achieved.*
6	**BMPs implemented by the permittee prior to the expiration of this permit to meet cumulative reductions**	*II.A.12.b(5)*	*The BMPs to be implemented by the permittee prior to the expiration of this permit to meet the cumulative reductions calculated in Part II A 3, A 4, and A 5, including as applicable:* *a) Type of BMP;* *b) Project name;* *c) Location;* *d) Percent removal efficiency for each pollutant of concern; and* *e) Calculation of the reduction expected to be achieved by the BMP calculated and reported in accordance with the methodologies established in Part II A 8 for each pollutant of concern.*
7	**Public comments on draft Chesapeake Bay TMDL Action Plan**	*II.A.12.b(6)*	*A summary of any comments received as a result of public participation required in Part II A 12, the permittee's response, identification of any public meetings to address public concerns, and any revisions made to Chesapeake Bay TMDL action plan as a result of public participation.*

2. Existing, New, or Modified Legal Authority

APS adopted an MS4 Program Plan that documents implementation of all MS4 permit requirements, including the programmatic and legal authorities required to meet the Special Condition for the Chesapeake Bay TMDL. **Table 2-1** provides a summary of elements of the six minimum control measures (MCMs) implemented by APS under the MS4 Permit that relate to controlling total nitrogen (TN) and total phosphorus (TP).

Table 2-1 – MS4 Program Plan Components Pertaining to the Chesapeake Bay TMDL

Minimum Control Measure	MS4 Program Plan Elements Related to Controlling Total Nitrogen and Total Phosphorus
MCM 1 – Public Education and Outreach	APS's MS4 Program Plan identifies the following three high-priority pollutants for the focus of APS's public education program during the permit cycle: (1) using techniques that keep water onsite and/or reduce imperviousness, (2) litter prevention, and (3) the importance of native vegetation for preventing soil erosion. Actions specific to nutrients and sediment and their impact on the Chesapeake Bay include: • Stormwater Pollution Prevention Plan (SWPPP) training of staff. • The National Oceanic and Atmospheric Administration (NOAA) Bay Watershed Education and Training (B-WET) program provides local grants to Grade 9, students, and teachers in the Bay Watershed to focus on project-based learning. • Meaningful Watershed Education Experience (MWEE) integrates field work in the Chesapeake Bay watershed with multidisciplinary classroom activities and instruction. Students then share their discoveries within their schools and communities, both orally and in writing. MWEEs have an intentional connection to the watershed as a whole. Experiences focus not only on the Chesapeake Bay, rivers, and streams, but also on terrestrial issues such as native plant species, erosion control, buffer creation, groundwater protection, and pollution prevention.
MCM 2 – Public Involvement and Participation	APS designed a program to involve the public in the decision-making process by meeting all public notice requirements and sponsoring at least four activities annually focusing on water quality. Examples include: • Outdoor Laboratory water quality field trips, • Middle school MWEE projects, and • Outdoor learning environments on local and native plant species.
MCM 3 – Illicit Discharge Detection and Elimination	APS integrated into its MS4 Program Plan an Illicit Discharge Detection and Elimination Program. This program includes preventing, identifying, and eliminating sources of pollutants, including total nitrogen and total phosphorus as well as total suspended solids.
MCM 4 – Construction Site Stormwater Runoff Control	APS's construction site stormwater runoff control program is designed to ensure that its construction projects comply with all local legal authorities. APS construction projects are subject to review, approval, and enforcement by Arlington County Government (ACG), the locality where the land-disturbing activity for APS occurs.
MCM 5 – Post-Construction Stormwater Management	APS contracts with a third party for long-term operation, inspection, and maintenance of all its stormwater management facilities. ACG maintains the electronic database of all stormwater management facilities including APS's stormwater management facilities. APS is responsible for the accuracy of this information and works closely with ACG to ensure the database remains up-to-date. APS post-construction stormwater management facilities are subject to review and approval by ACG.
MCM 6 – Pollution Prevention and Good Housekeeping for Municipal Operations	APS included in its MS4 Program Plan actions to meet the pollution prevention and good housekeeping requirements for municipal operations. APS operates one high priority municipal facility, the APS Trades Facility located at the ACG Trades Center. APS's Trades Facility is included in ACG's SWPPP for the Trades Center. APS is responsible for this facility under ACG's Trade Center SWPPP and inspects and maintains the area. ACG uses a turf management contractor to manage all necessary pesticide, herbicide and fertilizer applications for athletic fields. This contractor develops and implements the nutrient management plans (NMPs) for APS lands with a contiguous area greater than one acre.

2.1 Existing Legal Authorities

APS is a governing body with its own school board of elected officials and is a separate permitted entity from ACG. However, APS is not a governing authority on land development projects; instead, all land development on APS property is overseen by ACG. APS relies on ACG to develop and enforce legal authorities such as ordinances, permits, and orders related to all land development projects. While APS does hold construction and service contracts, property lease agreements, and inter-jurisdictional agreements, they do not include traditional legal enforcement mechanisms. **Table 2-2** provides a list and description of relevant existing legal authorities maintained by APS.

Table 2-2 – Existing Legal Authorities Maintained by APS

Type of Legal Authority	Legal Authority Description
Construction Contracts	Construction contracts are held by APS, and APS has standard contract language requiring that an onsite team member for the Contractor shall maintain the DEQ Erosion and Sediment Control (E&SC) and Storm Water Management (SWM) inspector certification. This member is also required to ensure proper record keeping of the SWPPP, conduct self-inspections of the Site at least every four days, and ensure compliance with APS's MS4 Permit as it relates to Site stormwater runoff control and proper E&SC. Lastly, the contract language requires the Contractor to provide on-site personnel certified for and designated as the Registered Land Disturber (RLD).
Interjurisdictional Agreements	There is a Memorandum of Agreement (MOA) between APS and ACG to set forth the agreed upon use of APS and ACG athletic facilities. The MOA specifies the parties responsible for trash pickup, custodial services, and field maintenance. This MOA addresses the responsible parties for some pollution prevention and good housekeeping items.
	APS issued a notice of MS4 interconnection letter to ACG on August 14, 2015.
Property Lease Agreements	APS is a tenant subject to property lease agreements for two office buildings with private owners. Those office buildings are not located within the APS MS4 area, and the lease agreements stipulate that the property owner is responsible for maintenance of the grounds. • Syphax Education Center 2100 Washington Blvd, Arlington VA 22204 Owned by Foulger-Pratt (private) • APS Employment Assistance Program and Alternative High School 2847 Wilson Blvd, Arlington VA 22201 Owned by Buck & Associates (private) • Fleet Elementary School 115 South Old Glebe Rd, Arlington VA 22204 Owned by ACG • Arlington Community High School temporary location for SY2024-SY2027 4420 Fairfax Drive, Arlington VA 22202 Owned by Aria Ballston, LLC
Service Contracts	APS holds a service contract with a third-party contractor that conducts annual inspection, maintenance, and repairs of stormwater BMPs. The contractor keeps records and submits maintenance and inspection reports for every site visited. APS reviews inspection reports and maintains a database of inspections records. APS also contracts with a third-party contractor to support its illicit discharge detection and elimination program through annual screening and inspections of outfalls.

APS also complies with relevant ACG legal authorities as all APS properties are located within Arlington County, and these ACG legal authorities are summarized in **Table 2-3**. Any additional legal authorities identified after the completion of this Chesapeake Bay TMDL Action Plan will be updated and published in the most recent version of the APS MS4 Program Plan.

Table 2-3 – ACG Legal Authorities with which APS Complies

ACG Legal Authority	Legal Authority Description	Corresponding MCM
Arlington County Code Chapter 26-5b Utilities	Arlington County Code Chapter 26-5 – Utilities prohibiting unauthorized discharges into the storm sewer system.	3
ACG Plan Review Procedures	APS is subject to ACG's written plan review process. The plan review procedures and all associated documents utilized in plan review may be found online at http://topics.arlingtonva.us/building/stormwater-management-ordinance/.	4 and 5
Chesapeake Bay Preservation Ordinance	The Chesapeake Bay Preservation Ordinance (Arlington County Code Chapter 61) was adopted to implement the requirements of § 62.1-44.15:67 et seq., of the Code of Virginia, the Chesapeake Bay Preservation Act, and the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830-10 et. seq.) Sensitive areas along streams throughout Arlington have been designated as Resource Protection Areas.	4 and 5
Compliance Inspection Procedures	ACG's compliance inspection procedures and all associated documents utilized during inspection, including the inspection schedule, may be found online at https://www.arlingtonva.us/Government/Programs/Sustainability-and-Environment/Stormwater.	4 and 5
Erosion and Sediment Control Ordinance	A land disturbing activity (LDA) permit is required for any activities that disturb equal to or greater than 2,500 square feet of land, as required by the Erosion and Sediment Control Ordinance (Arlington County Code Chapter 57) and the Virginia Erosion and Sediment Control Program.	4
Stormwater Management Ordinance	The Stormwater Management Ordinance (Arlington County Code Chapter 60) provides stormwater requirements for land disturbing activities in Arlington County in response to comprehensive new Virginia stormwater regulations which became effective in 2014.	4 and 5

2.2 New or Modified Legal Authorities

Table 2-4 provides the only legal authority that needs to be implemented to meet the requirements of Part II A 3, A 4, and A 5 of the MS4 Permit.

Table 2-4 – Future Planned Legal Authorities to be Implemented by APS

Type of Legal Authority	Legal Authority Description
Nutrient and Sediment Credit Purchase Agreement	APS implemented a Chesapeake Bay Nutrient Offset Agreement between APS and ACG's Water Pollution Control Plant for the purchase of total phosphorous and total suspended solids credits to meet the 40% POC required reductions. The agreement went into effect on **June 30, 2023** and expires on June 30, 2028.

APS does not have any plans to develop any additional new or modified legal authorities to meet the requirements of the Chesapeake Bay TMDL at this time. APS will comply with relevant new and modified ACG legal authorities as they are developed or modified in the future.

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3. Load and Cumulative Reduction Calculations

3.1 Estimated Existing Source Loads and Calculated Total Pollutant of Concern Required

The APS MS4 is comprised of approximately 356 acres of land across 38 facilities located throughout Arlington County, Virginia. All APS facilities are located within urbanized areas as defined under the 2010 US Census data: consequently, they are all included in APS's MS4 area. APS facilities are located throughout Arlington County and consequently fall into one of two hydrologic unit codes (HUCs): Potomac River - Pimmit Run (PL24) and Potomac River - Four Mile Run (PL25). However, the entirety of the MS4 and associated watersheds are located within the Potomac River Basin.

The APS MS4 service area is comprised of all lands within the property boundaries of the 38 APS facilities located in Arlington County (see **Figure 3-1**). Currently, there is a MOA between APS and ACG to differentiate which MS4 operator is responsible for which part of the interconnected MS4. In most cases, the boundary of the interconnection between the ACG MS4 boundary follows the property boundaries of the APS facilities. There are, however, some cases in which ACG has a stormwater easement to maintain storm infrastructure owned by ACG within APS's property boundaries.

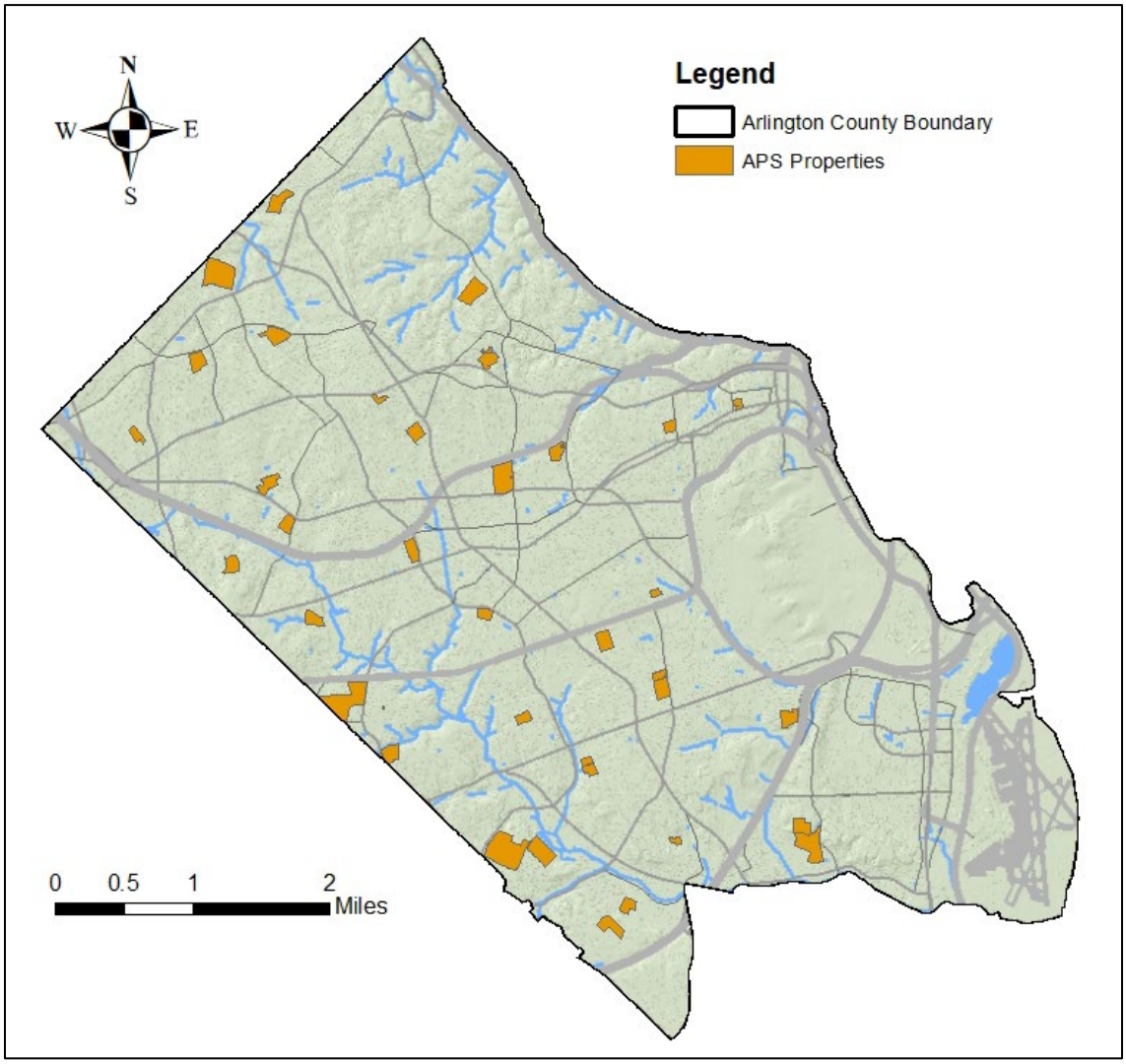

Figure 3-1 – APS MS4 Area Map

ACG develops and maintains all geographic information systems (GIS) data pertaining to APS. Impervious and pervious surfaces within APS's MS4 were determined by ACG using planimetric data developed from ortho-rectified aerial photography taken in 2009. Polygons for impervious surfaces include the following:

1. Structures
2. Bridges (roadway and pedestrian)
3. Alleys
4. Driveways
5. Parking lots
6. Paved Medians
7. Roadways
8. Sidewalks (including handicap ramps and bike/pedestrian trails)
9. Hard surface sports courts, including, but not limited to: tennis and basketball courts

To calculate the 2009 impervious regulated area, the 2009 planimetric impervious cover features were clipped using the APS MS4 boundary polygon layer. Estimated acres of forest were delineated in GIS using the 2009 ortho-rectified aerial photography. Regulated pervious acres were calculated by subtracting the regulated impervious acres and forest acres from the total MS4 acres. APS's MS4 is located entirely within urbanized areas as specified in 2010 US Census data; therefore, the clipped values from 2009 planimetric data were used. **Table 3-1** summarizes the existing source acreage for APS's MS4. Acres of forest have been included for reference; however, forest acres do not affect the total source load calculation.

Table 3-1 – APS MS4 Acreage[1]

Total APS MS4 Area (acres)	Impervious Area (acres)	Pervious Area (acres)	Forested Area (acres)
355.99	138.59	190.99	26.41

Note:

[1.] Planimetric data from 2009 was used to identify impervious and pervious acreage reflecting 2009 land cover conditions. APS's MS4 is located entirely within urbanized areas as specified in the 2010 US Census data.

APS's MS4 is located entirely within the Potomac River Basin. Consequently, MS4 Permit Table 3b[2] was used to calculate existing source loads and required reductions. Existing source loads include loads from pervious or impervious lands served by the MS4 as of June 30, 2009. Pervious cover consists of land with some type of vegetative cover, such as forested area or open space and managed turf. Impervious cover consists of material that significantly impedes or prevents natural infiltration of water into soil, which includes lands that have been previously developed. Prior developed lands include land 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. **Table 3-2** provides the calculation sheet for estimating existing source loads for the Potomac River Basin which is found by multiplying the total existing acres served by the MS4 as of June 30, 2009 and the 2009 Edge of Stream (EOS) loading rate. These values correlate with the total baseline loads that theoretically are discharged into the Potomac River Basin as a result of runoff from existing impervious and pervious acreage, prior to accounting for any installed BMPs.

[2] MS4 Permit Table 3b: Calculation Sheet for Estimating Existing Source Loads for the Potomac Basin *Based on Chesapeake Bay Program Watershed Model Phase 5.3.2.

Table 3-2 – APS MS4 Existing Source Loads (Potomac River Basin)

Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)[1]	2009 EOS Loading Rate (lbs/ac/yr)[2]	Estimated Total POC Load Based on 2009 Progress Run (lbs/yr)	Sum of Total POC Loads (lbs)
Regulated Urban Impervious	Nitrogen	138.59	16.86	2,336.70	4,259.96
Regulated Urban Pervious		190.99	10.07	1,923.26	
Regulated Urban Impervious	Phosphorus	138.59	1.62	224.52	302.83
Regulated Urban Pervious		190.99	0.41	78.31	

Notes:

[1] APS's MS4 is located entirely within urbanized areas as specified the 2010 US Census data; therefore, clipped values from 2009 planimetric data were used to calculate total existing acres served by MS4.

[2] 9VAC25-890, General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s), Table 3b: Calculation Sheet for Estimating Existing Source Loads for the Potomac River Basin, based on Chesapeake Bay Program Watershed Model Phase 5.3.2.

APS is required to plan to meet 100% of the L2 scoping run reductions for existing sources by the end of the third MS4 Permit cycle (October 31, 2028). **Table 3-3** provides the calculation sheet to determine the 100% load reduction required during the third permit cycle.

Table 3-3 – Calculation Sheet for Determining Total POC Reductions Required by the End of Third Permit Cycle for the Potomac River Basin[1] for APS

Subsource	Pollutant	Estimated Total POC Load Based on 2009 Progress Run (lbs/yr)[2]	Percentage of MS4 required Chesapeake Bay total L2 loading reduction	Percentage of L2 required reduction by 10/31/2028	100% cumulative reduction required by 10/31/2028 (lbs/yr)	Sum of 100% cumulative reduction (lb/yr)
Regulated Urban Impervious	Nitrogen	2,336.70	9%	**100%**	210.30	325.70
Regulated Urban Pervious		1,923.26	6%	**100%**	115.40	
Regulated Urban Impervious	Phosphorus	224.52	16%	**100%**	35.92	41.60
Regulated Urban Pervious		78.31	7.25%	**100%**	5.68	

Notes:

[1] **Table 3-3** calculates the total POC Reductions Required by the end of the third permit cycle based on additional information provided in MS4 Permit Table 3b: Calculation Sheet for Estimating Existing Source Loads for the Potomac Basin *Based on Chesapeake Bay Program Watershed Model Phase 5.3.2.

[2] Total POC loads calculated in **Table 3-2** of this plan.

Section 6 of this Action Plan discusses the means and methods available for implementation in order to meet the required reductions identified in **Table 3-3**.

3.2 Means and Methods to Address Discharges from New Sources

The MS4 permit requires a discussion on the means and methods that will be utilized to address discharges into the MS4 from new sources for projects where construction was initiated between July 1, 2009 through October 31, 2023. Development or redevelopment projects for which construction was initiated between July 1, 2009 and October 31, 2023, that disturb one acre or greater, and utilize an average land cover condition greater than 16% impervious cover for the design of post-development stormwater management facilities require an offset of increased loads. The following means and methods are used by APS to address discharges from these new sources:

- For all construction projects disturbing greater than 2,500 square feet, APS adheres to the Arlington County Code, Chapter 60 on Stormwater Management, which provides stormwater requirements for land disturbing activities in Arlington County and are more stringent than the Virginia Stormwater Management Program (VSMP) regulations for the implementation of post-development stormwater management facilities. This includes acquiring coverage under the General Construction Permit as well as a LDA permit and development of a stormwater plan.
- APS works with ACG to minimize impervious surfaces for all new construction and additions.

3.2.1 Construction Initiated July 1, 2009 through June 30, 2014

APS calculated new source loads associated with construction projects disturbing one acre or greater and initiating construction between July 1, 2009 through June 30, 2014 as required in the previous MS4 Permit, effective 2014-2018. Construction was initiated for the following three projects during that time period:

1. Wakefield High School renovation and expansion (36.3 acres);
2. Ashlawn Elementary School renovation and expansion (4.1 acres); and
3. Discovery Elementary School construction (14.7 acres).

Arlington County is the VSMP authority for APS and executes a rigorous plan review process and BMP certification process for all APS projects with land disturbance over 2,500 square feet, which exceeds the state requirement. APS calculated new source loads resulting from the increased impervious area for these three projects, which are reported in **Table 3-4**. These calculations confirm that none of the three projects result in an increased TP load of 0.45 lbs TP per acre per year or more, which is the minimum threshold that requires permittees to make reductions for new source loads. Therefore, APS is not required to make reductions due to new source loads.

Table 3-4 – New Source Loads Initiating Construction July 1, 2009 - June 30, 2014

Project Name	Total Disturbed Area (acres)	Pre-Dev TP Loads (lbs)	Post-Dev TP Loads (lbs)	TP Load Reduction from Post-Dev BMPs (lbs)	TOTAL TP Load Increase, minus BMP reduction (lbs)	TP Load Increase Per Acre (lbs TP/ac/yr)	Less Than 0.45 lbs TP/ac/yr[1]?
Wakefield High School	36.3	29.3	30.0	2.47	-1.73	-0.05	Yes - no additional reductions required for redevelopment.
Ashlawn Elementary School	4.08	2.8	3.4	1.10	-0.50	-0.11	Yes - no additional reductions required for redevelopment.
Discovery Elementary School	14.7	7.4	16.6	5.40	4.89	0.33	Yes - no additional reductions required for redevelopment.

Note:

[1] DEQ Memo No. GM20-2003, Chesapeake Bay TMDL Special Condition Guidance (February 6, 2021) specifies that permittees do not have to make reductions beyond the 16% average land cover condition or .45lbs TP/ac/yr. This .45lbs/TP/ac/yr should be compared to the difference between the site's pre-development TP load and post-development TP load, accounting for load reductions associated with any BMPs installed for post-development.

3.2.2 Construction Initiated July 1, 2014 through October 31, 2023

Arlington County is the VSMP authority for APS and executes a rigorous plan review process and BMP certification process for all APS projects with land disturbance over 2,500 square feet. This plan review and BMP certification process ensures that all required offsets are incorporated. Consequently, there are no new source loads from construction initiated between July 1, 2014 through October 31, 2023.

3.3 Means and Methods to Offset Increased Loads from Grandfathered Projects that Began Construction after July 1, 2014

Although APS is not a VSMP authority, it complies with the water quality requirements of Arlington County, the locality and VSMP Authority in which APS's construction occurs.

Grandfathered projects are defined as those which meet the following criteria established in the DEQ Memo No. GM20-2003, Chesapeake Bay TMDL Special Condition Guidance, Part V – Chesapeake Bay TMDL Plan Elements, Pages 17-18:

> *"…projects that have been approved or have an obligation of locality, state or federal funding prior to July 1, 2012, but have not received coverage under the General Permit for Discharges of Stormwater from Construction Activities prior to July 1, 2014. This permit requirement applies solely to new development, not redevelopment projects."*

All APS construction projects qualify as redevelopment; furthermore, projects funded prior to July 1, 2012 have received stormwater permit coverage prior to July 1, 2014. APS has no construction projects that meet the criteria of grandfathered projects.

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4. Total Reductions Achieved for Each Pollutant of Concern

The means and methods implemented to date include redevelopment-based reductions in the form of BMPs implemented between 2009 and 2023, and BMPs implemented between 2006 and 2009 that have been submitted to DEQ by the required deadline and to receive credit as historical BMPs. APS plans to purchase TN and TP credits through an agreement with the Arlington County Water Pollution Control Plant to fulfill any remaining reduction requirements through October 31, 2028.

BMPs retrofitted and installed as part of development and redevelopment projects have achieved incremental and cumulative reductions in stormwater pollutants. Projects initiating construction between July 1, 2009 and June 2023 have yielded credit toward Chesapeake Bay TMDL reduction requirements in the following cases:

1. A BMP is designed as oversized and goes above and beyond the VSMP offset requirements due to construction; or
2. A functional BMP is retrofitted, resulting in an increased pollutant reduction rate.

Credit from these BMPs is accounted for in the TMDL calculation spreadsheet, included as **Appendix A** of this action plan. **Table 4-1** provides a summary of the in-place reductions for each type/category of practice for this permit cycle through FY 2023. For BMPs that meet the Virginia Stormwater BMP Clearinghouse criteria, BMP Clearinghouse removal rates were used for TN and TP. For BMPs that do not meet the Virginia Stormwater BMP Clearinghouse criteria, removal rates were determined using either the Chesapeake Bay Program Efficiencies or Retrofit Curve equations, as specified in the DEQ Guidance Memo No. 20-2003, Appendix V.A, Appendix V.B, and Appendix V.C. The total 100% POC reduction requirements for TN and TP will be met through a revised nitrogen and phosphorus credit purchase agreement with the Arlington County Water Pollution Control Plant, which will go into effect prior to October 31, 2028.

Table 4-1 – POC Reductions from Means and Methods Implemented to Date

Means and Methods Implemented	Total TN Reduction (lbs/yr)	Total TP Reduction (lbs/yr)
100% POC Reduction Requirement by October 31, 2028	325.70	41.60
Increased Loads from Construction 2009-2023	88.13	15.70
Subtotal of Reduction Required	*413.83*	*57.30*
BMP Credit from Construction and Retrofits (2009-2023)	-277.25	-24.75
Credit from Historic BMPs (2006-2009)	-11.58	-0.92
Subtotal of BMP Credits	*-288.83*	*-25.67*
Percent of Total POC Load Reduction (100%)	61.6%	24.0%
Required Percent of Total POC Load Reduction for Third Permit Cycle	100%	100%
Additional POC Load Reduction Required to Meet Third Permit Cycle Reductions (100%)	**125.00**	**31.63**

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5. List of BMPs Implemented to Achieve Reductions for the Chesapeake Bay TMDL

A list of BMPs implemented to date is included in the provided TMDL calculation spreadsheet that has been submitted alongside this Action Plan. The spreadsheet includes a tab for BMPs that were implemented along with projects initiating construction between July 1, 2009 through June 2023 and accounts for reductions associated with BMP retrofits and design of construction BMPs above VSMP offset requirements. The spreadsheet includes a separate tab documenting historical BMPs implemented between 2006 and 2009. APS claims credit for two BMPs that meet the Virginia BMP Clearinghouse criteria for a Bioretention Level 1. These historical BMPs were submitted to the DEQ and approved for full mass removal credit for TP and TN.

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6. Methods Implemented by the Permittee Prior to the Expiration of This Permit to Meet Cumulative Reductions

The required reductions from existing sources identified in **Table 3-3** of this Action Plan must be achieved by the end of third permit cycle, which is October 31, 2028. This section identifies the strategy that APS intends to implement by the end of the third permit cycle in order to meet the 100% reduction targets. In order to meet its 100% reduction targets for TP and TN, APS intends to purchase TP and TN credits through an Agreement with the Arlington County Water Pollution Control Plant. This agreement will be executed prior to October 31, 2028.

Table 6-1 summarizes the costs associated with the annual nutrient and sediment credit purchase to meet Phase III reduction requirements by October 31, 2028. Costs are based on actual quotes received from the Arlington County Water Pollution Control Plant.

Table 6-1 – Annual Costs of Credit Purchase from Arlington County Water Pollution Control Plant

Pollutant	Cost per Pound	Total Pounds Purchased	Total Cost
TN	$20	125	$2,500 / yr
TP	$20	32	$640 / yr
		Total Annual Cost of Credit Purchase	**$3,140 / yr**

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7. Public Comments on Draft Chesapeake Bay TMDL Action Plan

The Chesapeake Bay TMDL Action Plan will be posted to the Arlington Public Schools Stormwater Management Program website[3]. To solicit comments, a notice requesting comment will be posted to the "Engage with APS" section of the APS webpage. This notice will then be included in the weekly "Engage with APS" email sent to the APS community. The opportunity to provide comments will be open for at least 15 days.

The following is a summary of the comments received during the public comment period, as well as the responses provided by APS:

APS received one comment during the public comment period.

"Fewer buses = fewer toxins on the road/polluted storm water and air."

APS takes this comment into consideration and will be cognizant of it as it continually develops its transportation management plans.

[3] https://www.apsva.us/aps-goes-green/stormwater-management-program/

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8. References

9VAC25-890, General VPDES Permit No. VAR040127 for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, Virginia Legislative Information System, Effective 2023-2028.

Arlington Public Schools 2022 Phase II (Small) Municipal Separate Storm Sewer System (MS4) Annual Report, September 2022.

Arlington Public Schools Small MS4 Program Plan, 2018-2023 Permit Cycle, Revised December 2022.

Virginia Department of Environmental Quality. Commonwealth of Virginia Department of Environmental Quality Water Division Guidance Memo No. 20-2003 (for Chesapeake Bay TMDL Special Condition requirements in the 2018-2023 General Permit for Discharges of Stormwater from Small (Phase II) MS4s), Virginia Department of Environmental Quality, Water Division, Richmond, VA, February 6, 2021.

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Appendix A Chesapeake Bay TMDL Action Plan Calculations

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