

City of Waynesboro Virginia
Draft Chesapeake Bay TMDL
2023 – 2028 Action Plan
September 30, 2023

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1.0 - Introduction

The City of Waynesboro is an independent City located in Augusta County, Virginia. The city was designated as regulated Small Municipal Separate Storm Sewer System (MS4) in August 2013. Waynesboro developed a stormwater management program that addresses the six minimum control measures established by the United States Environmental Protection Agency to comply with the General Permit. The Development of a Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan is an additional requirement of the Small MS4 general permit. As a MS4 community, Waynesboro is required to complete the Draft TMDL action plan by October 1, 2023, as part of the 2023 to 2028 phase II general permit. The TMDL Action Plan will be a critical planning tool used to provide permit compliance in a fiscally responsible manner. The following was developed to characterize the City's watershed. The characterization reviews the existing program authorities, estimates existing source loads, identifies potential reduction means and methods, and reviews potential compliance costs.

2.0 - Current Program and Legal Authority

The City of Waynesboro implemented a MS4 stormwater management program in February of 2014. The program was developed to address the six minimum controls and the special conditions for the Chesapeake Bay TMDL. The MS4 program has been established with the appropriate legal authority to administer the requirements of the TMDL action plan. No additional authorities are required at this time.

3.0 - Means and Methods to Address Discharges from New Sources

The City of Waynesboro is required to provide means and methods to address discharges from new sources after July 1, 2009. Land disturbing activities more than one acre with an average impervious land cover greater than 16% are required to provide additional offsets. The City employed an average land cover condition of 16% for all land disturbing activities between July 1, 2009, and June 30, 2014. No additional reductions will be required to offset new sources during this time period.

Waynesboro developed and adopted a stormwater management ordinance that became effective July 1, 2014. The ordinance meets or exceeds the minimum requirements set forth by the Virginia Stormwater Management Act (62.1-44.15:24 et seq, Code of Virginia) and the Erosion and Sediment Control Act (62.1-44.15:51 et seq, Code of Virginia). All new land-disturbing activities that exceed one acre will be required to adhere to the stormwater management ordinance. No additional reduction will be required to offset new sources constructed after July 1, 2014.

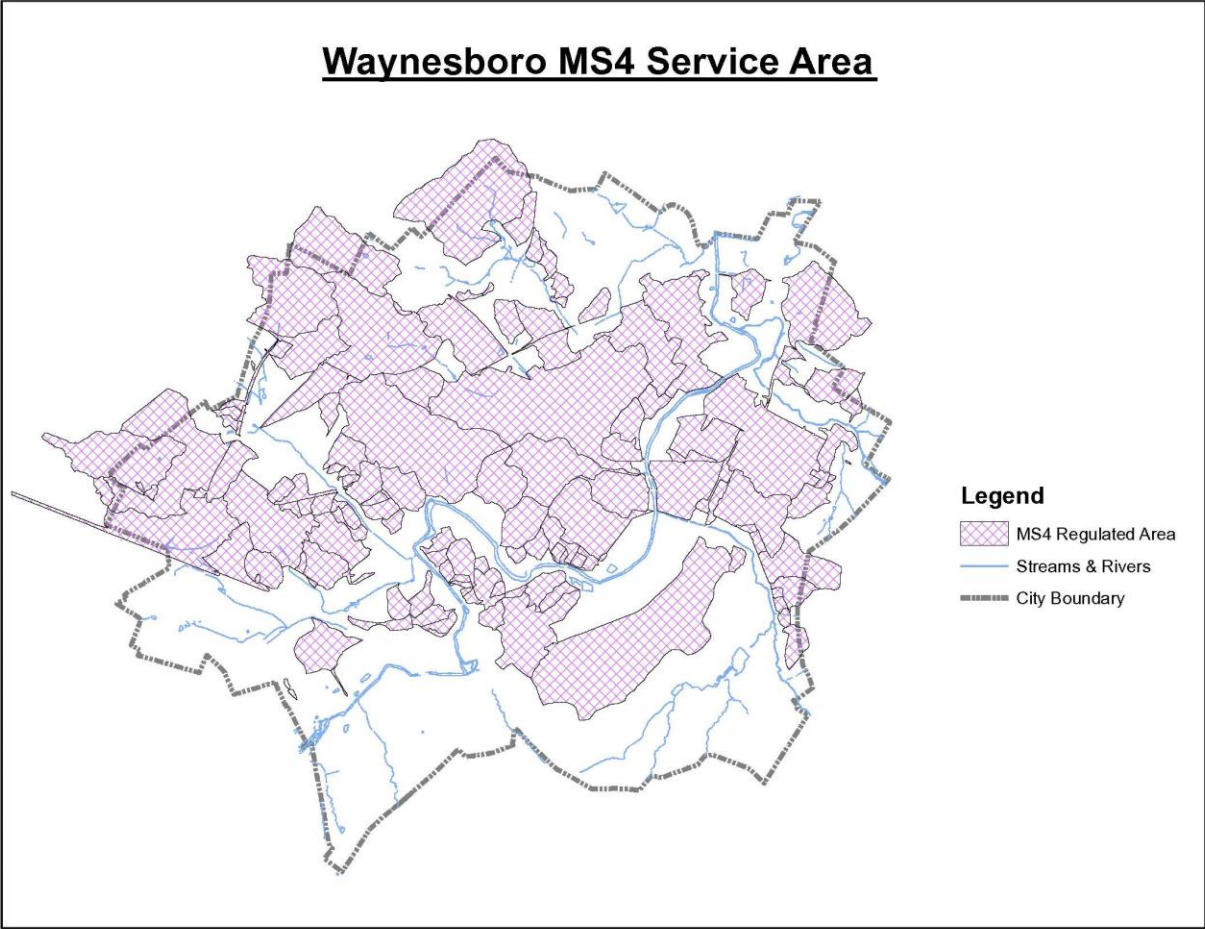
4.0 - Estimated Existing Source Loads and Calculated Total Pollutant of Concern Reductions

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. The following sections describe the methodologies used to determine the potential load reduction requirements.

4.1 – MS4 Service Area Delineation Methodology

Existing stormwater mapping, high-resolution aerial photographs (VGIN “Most Recent Imagery”), U.S. Census 2010 urbanized area boundaries, City of Waynesboro boundaries, and available topographic mapping were utilized to delineate the City’s MS4 area. Each of these data sets was integrated into a GIS Environment and delineation determinations were developed utilizing best professional judgement. Field investigations were performed in areas where digital data was insufficient to make reasonable determinations. Areas of sheet flow into the city boundary and out from the city boundary were considered. The evaluation identified minimal interactions between VDOT and Augusta County. In accordance with DEQ TMDL guidance, some areas were eliminated from the MS4 regulated area. These include areas already covered by a general VPDES permit, areas which drain to surface waters without connection to MS4 infrastructure, and stream corridors. It is anticipated that further MS4 area refinement will be performed as additional information becomes available. The total MS4 service area was determined to be 5,518 acres.

Figure 1 – MS4 Service area map



4.2 – Pervious and Impervious Surface Calculations

The City of Waynesboro has developed extensive impervious area data sets as part of the implementation and operation of their stormwater utility fee. This data was generated by utilizing a combination of the best available aerial imagery and field verifications. The areas were digitized into GIS mapping. These mapping layers were then integrated into the MS4 service area delineation to determine the total regulated pervious and impervious area. Table 1 provides the acreage of each.

Table 1 – Regulated Pervious and Impervious Area

Subsource	Total Existing Acres Served by MS4
Regulated Urban Impervious	1,791
Regulated Urban pervious	3,727

4.3 – Estimating Existing Loads

The regulated urban pervious and impervious acreage was used to estimate the total existing source loads for each POC. The City is located within the Potomac River watershed, thus loading rates provided in Table 2b of the February 26, 2021 Chesapeake Bay TMDL guidance document were used. Table 2 provides a summary of the estimated existing source loads.

Table 2 - Calculation Sheet for Estimating Existing Source Loads for the Potomac River Basin (Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)

Subsource	Pollutant	Total Existing Acres Served by MS4	2009 EOS Loading Rate (lbs/acre)	Estimated total POC Load Based on 2009 Progress Run
Regulated Urban Impervious	Nitrogen	1,791	16.86	30,196
Regulated Urban pervious		3,727	10.07	37,531
Regulated Urban Impervious	Phosphorus	1,791	1.62	2,901
Regulated Urban pervious		3,727	0.41	1,528

4.4 – Required Reductions from Existing Loads

The City of Waynesboro is required to achieve 60 percent reductions of the Level 2 scoping runs of the Chesapeake Bay Watershed Model during the third permit cycle (November 1, 2023-October 31, 2028). The reduction requirement estimates are based on the February 26, 2021, guidance document and model runs. These estimated loadings are likely to be modified as future guidance is developed by DEQ.

The load reductions required for the third permit cycle has not been defined in the current TMDL guidance document. Loading rates have been provided for the 40% reductions required by existing MS4 communities. These rates were then extrapolated to develop reduction rates for the third (60%) permit cycles. Tables 3 provides the worksheet for determining Third cycle reduction requirements.

Table 3 - Calculation Sheet for Determining Total POC Reductions Required During the 3rd Permit Cycle for Waynesboro Virginia (Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)

		A	B	C	D	E	F	G
Pollutant	Subsource	Loading Rate (ls/ac/yr)	Existing developed lands as of 6/30/09 served by the MS4 within the 2010 CUA (acres) ²	Loading (lbs/ac./yr)	MS4 required Chesapeake Bay total L2 Loading rate reduction	Percentage of L2 required loading rate reduction by 10/31/2028	100% reduction required by 10/31/2028 (lbs/yr)	Sum of 100% reduction (lb/yr)
Nitrogen	Regulated urban impervious	16.86	1,791	30,196	9%	100%	2,718	4,970
	Regulated urban pervious	10.07	3,727	37,531	6%	100%	2,252	
Phosphorus	Regulated urban impervious	1.62	1,791	2,901	16%	100%	464	575
	Regulated urban pervious	0.41	3,727	1,528	7.25%	100%	111	

5.0 - Means and Methods to Meet Required Reductions

5.1 – Introduction

The City of Waynesboro is required to identify means and methods that may be employed to achieve the required third cycle pollutant reductions identified in section 4. The following sections describe how the City anticipates achieving the reductions required by the special condition. These strategies were developed using the TMDL Guidance Document published by the Department of Environmental Quality dated November 26, 2021.

5.2 – Existing Credits

The City of Waynesboro will use credits for existing projects and programs that have been previously implemented in accordance with DEQ’s TMDL guidance. The City will take credit for BMP’s that were installed between January 1, 2006 and June 30, 2009 that have not been previously reported to DEQ. The City will also receive credit for any structural BMP’s installed after July 1, 2009 providing treatment in accordance with TMDL guidance. The chart below identifies existing project crediting for each POC.

Table 4 - Existing Load Reductions

Site	BMP Type	Pollutant Reductions (lbs/ac/yr)	
		TN	TP
Street Sweeping	Street Sweeping	24	9
Jefferson Park	Constructed Wetland	1529	291
Pelham East	Constructed Wetland	190	53
Ridgeview Park Bio-retention	Bio-Retention	4	1
Fir Street	Land Use Change	1	1
City Wide	Storm Drain Cleaning	43	97
WWTP	Credits	197	0
Total		1988	452

5.3 – New Projects Reductions

The City of Waynesboro continues to develop additional capital improvement projects that will have a positive impact on the water quality. The City reserves the right to move forward with additional projects as they are developed, and funding is available. Constituent reductions will be reported in the annual MS4 report. Credits will be applied to the City’s TMDL reductions requirements as needed to comply with the L2 load reduction requirements. The following new load reductions are being included in this action plan.

Table 5 - New Load Reductions

Site	BMP Type	Pollutant Reductions (lbs/ac/yr)	
		TN	TP
Hopeman Pond	Pond Conversion	416	43
WWTP Credits or Future Projects to be identified	TBD	2,566	80
	New	2,982	43
	Existing	1,988	452
	Total	4,970	575
	Total Required	4,970	575

5.4 – Alternative Strategies

The City of Waynesboro reserves the right to modify this TMDL action plan to use strategies and/or methodologies that have not been included in this document. Those alternative strategies may be used to replace and/or enhance pollutant reduction strategies presented in the TMDL Action Plan. Alternative strategies may include, but are not limited to:

- Emerging BMP technologies
- Redevelopment credits
- Land use conversions
- Public private partnerships
- Trading

6.0 - Means and Methods to Offset Increased Loads from New Sources Initiating Construction between July 1, 2009 and June 30, 2014

Land disturbing activities more than one acre utilizing an average impervious land cover greater than 16% are required to provide additional offsets. The City employed an average land cover condition of 16% for all land disturbing activities between July 1, 2009, and June 30, 2014. It is not anticipated that additional reductions will be required to offset new sources during this time. The city will continue to evaluate potential grandfathered projects prior to completion of the Chesapeake Bay action plan.

7.0 - Means and Methods to Offset Increased Loads from Grandfathered Projects Beginning Construction after July 1, 2014

The City of Waynesboro does not have any projects that qualify as grandfathered projects in accordance with Virginia code 9VAC25-870-48. It is not anticipated that any offset reductions will be required at this time. The city will continue to evaluate potential grandfathered projects prior to completion of the Chesapeake Bay action plan.

8.0 –Cost of Compliance and Funding

The City of Waynesboro has obtained compliance with the Commonwealth of Virginia’s 2018-2023 requirements of the Chesapeake Bay TMDL. Continuing compliance with the Chesapeake Bay TMDL will be a costly endeavor for the City of Waynesboro. The city is continuing to evaluate the anticipated costs of full compliance as well as operation and maintenance of current best management practices. Waynesboro has developed a stormwater utility fee to aid in the funding of the TMDL program. The city will also continue to seek additional grant funding opportunities to advance the program.

9.0 – Public Comment on Draft Action Plan

This section to be included upon completion of public comment period.