

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”



SIGNATURE

8/31/2023

DATE

JAMES RANDALL WHEELER

PRINTED NAME

City Manager

TITLE

## DEFINITIONS & ACRONYMS

The following definitions and acronyms are used in this Chesapeake Bay TMDL Action Plan:

**Action Plan** – unless specifically stated otherwise, the Chesapeake Bay TMDL Action Plan

**City** – unless specifically stated otherwise, the City of Poquoson

**DEQ** – Virginia Department of Environmental Quality

**EOS** – Edge of Stream

**EPA** – The U.S. Environmental Protection Agency

**HRSD** – The Hampton Roads Sanitation District Commission

**L2** – Level 2 (scoping run of Chesapeake Bay Watershed Model)

**MS4** – Municipal Separate Storm Sewer System

**MTD** – Manufactured Treatment Devices

**NASA** – National Aeronautics and Space Administration

**NAVD88** – North American Vertical Datum of 1988

**Permit** – unless specifically stated otherwise, the City's current MS4 permit valid from 2018 to 2023

**POCs** – Pollutants of Concern (Specifically Nitrogen, Phosphorus, and Total Suspended Solids)

**RMA** – Resource Management Area

**SLAF** – Stormwater Local Assistance Fund (administered by DEQ)

**SWIFT** – Sustainable Water Initiative for Tomorrow

**TMDL** – Total Maximum Daily Load

**TN** – Total Nitrogen

**TP** – Total Phosphorous

**TSS** – Total Suspended Solids

**RPA** – Resource Protection Area

**VAMSA** – Virginia Municipal Stormwater Association

**VSMP** – Virginia Stormwater Management Program

**WIP** – Watershed Implementation Plan

## **Executive Summary**

In accordance with requirements of the Virginia General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 permit), the City of Poquoson, Virginia (the City) has prepared this Chesapeake Bay TMDL Action Plan for the next MS4 permit cycle.

This action plan covers the time period of November 1, 2023 – October 31, 2028. The City has currently met the 40% reduction required by the end of the second permit cycle and plans to meet 100% of the reductions required by the end of the third permit cycle.

## **Review of the Current MS4 Program**

Poquoson currently has coverage under 9VAC25-890-40 through October 31, 2023. The draft Phase II reissuance of 9VAC25-890 is currently under review. The effective date of the reissuance is planned to be November 1, 2023. This state general permit provides authorization to discharge stormwater from the City's municipal separate storm sewer system (MS4) into state waters. This general permit is consistent with the Chesapeake Bay TMDL and the Virginia Phase I, II, III Watershed Implementation Plans.

The City maintains an MS4 program plan that is updated in accordance with the permit schedule and submits an annual report to DEQ prior to October 1<sup>st</sup> of each year. This draft action plan was prepared in accordance with the permit requirements and the Chesapeake Bay TMDL Special Condition guidance.

## **Identification of New or Modified Legal Authorities**

All legal authorities needed to implement this action plan are in place. These include the Virginia law on nutrient trading and the attached Memorandum of Agreement between the City of Poquoson and the Hampton Roads Sanitation District. Should the City opt to construct or modify additional BMPs in furtherance of future Bay

TMDL requirements, the only additional legal authorities that would be needed are project-specific permits for construction. These might include land disturbance permits, VPDES stormwater permits for construction activities, or various wetlands or other state and federal permits. These permits would depend on specific project requirements and conditions.

The legal authorities used to implement its MS4 program are located in Chapter 34 of the City Code. Articles III, IV, and V are the primary legal authorities governing land disturbance, water quality, and environmental protection in the City. The City plans to modify the existing ordinances to reflect the changes in the new combined Stormwater Management and Erosion & Sediment Control regulations once they are finalized.

### **Means and Methods to Address Discharges into the MS4 from New Sources**

Stormwater discharges from new development within Poquoson must comply with the VSMP regulations and laws for both quantity and quality. Post-development BMPs must meet Virginia BMP Clearinghouse standards and specifications. Plans and calculations for these structures are reviewed by state certified staff members as part of the Poquoson development review process. All construction activities must follow the minimum standards and requirements of Virginia's Erosion and Sediment Control Law. Development work must adhere to the Poquoson City Code, including Stormwater, Erosion and Sediment Control, and Chesapeake Bay Preservation ordinances. Poquoson restricts development in the Bay Resource Preservation Area. In an effort to protect water quality, all areas within Poquoson located upland of the Resource Protection Areas were designated Resource Management Areas. This exceeded Chesapeake Bay Preservation Act minimum requirements.

Applicable City ordinances, staffing, and other aspects of the Poquoson VSMP program were reviewed by DEQ and approved by the State Water Control Board at VSMP implementation.

### **Offsets for Existing Development**

There have been no changes to the City's MS4 service area since its delineation in the first permit cycle. Existing development loads were calculated at that time. The total offset required for the Bay TMDL has not changed, as the City's MS4 service and urbanized areas have remained the same.

### **Determination of Total Pollutant Load Reductions**

The total pollutant load reduction required by the Bay TMDL was calculated during the previous permit cycle and included in the approved Action Plan for 2013-2018, as well as the approved Action Plan for 2018-2023. Given that there has been no change to the City's MS4 service and urbanized area, the amount of load reduction required has not changed. During the upcoming 2023-2028 permit cycle, there will be an expansion of the City's MS4 service area due to a development that is being built in an area currently outside the City's service area. The development will contain public infrastructure that will collect drainage and outfall into state waters. This will not result in an increase in the City's total pollutant load reduction as the development was built to VSMP standards.

**Table 1: Total Pollutant Load Reductions**

<u>Pollutant</u>	<u>Subsource</u>	<u>Loading Rate (lbs/ac/yr)</u>	<u>Existing developed lands as of 6/30/09 served by the MS4 within the 2010 CUA (acres)</u>	<u>Loading (lbs/yr)</u>	<u>MS4 required Chesapeake Bay total L2 loading rate reduction (decimal numbers)</u>	<u>Total reduction required at the end of the third permit cycle (6/30/28)</u>	<u>Total reduction required at the end of the third cycle (6/30/28)</u>
<b><u>Nitrogen</u></b>	Regulated urban impervious	7.31	636.28	4651.2068	0.09	418.608612	<b><u>1167.25597</u></b>
	Regulated urban pervious	7.65	1631.04	12477.456	0.06	748.64736	
<b><u>Phosphorus</u></b>	Regulated urban impervious	1.51	636.28	960.7828	0.16	153.725248	<b><u>214.032952</u></b>
	Regulated urban pervious	0.51	1631.04	831.8304	0.0725	60.307704	
<b><u>Total Suspended Solids</u></b>	Regulated urban impervious	456.68	636.28	290576.3504	0.2	58115.27008	<b><u>68502.1406</u></b>
	Regulated urban pervious	72.78	1631.04	118707.0912	0.0875	10386.87048	

**Means and Methods Used to Meet the Required Reductions for First Permit Cycle**

The City completed its 5% required reduction for the first permit cycle from 2013-2018. The City met these goals by constructing two new BMPs, a wet pond and constructed wetlands. Four existing BMPs were identified which qualified for credit, along with an existing land use conversion. The City also claimed nitrogen reduction credit for disconnections from private septic tanks and the connection of these lots to the City’s public sanitary sewer system. These actions exceeded the 5%

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required reduction. A detailed chart showing the BMPs used to meet the required reductions, as well as their reduction efficiency, is included in the Appendix.

Table 2 summarizes the achieved load reductions through the means and methods described in the first action plan. It also includes additional work accomplished in the first permit cycle.

**Table 2: Load Reductions Achieved through June 30, 2018**

<u>Pollutant</u>	<u>Load Reductions Achieved by Stormwater BMPs and other methods outlined in approved first cycle Action Plan (achieved prior to June 30, 2018)</u>	<u>Load Reductions Achieved by Additional Septic Tank Disconnection/Connection to Sewer occurring between first action plan approval and June 30, 2018, lb/yr*</u>	<u>Total Load Reductions Achieved through 6/30/2018 (end of first permit cycle), lb/yr</u>
<u>Nitrogen</u>	162.76	18.86	181.62
<u>Phosphorus</u>	18.57	0	18.57
<u>Total Suspended Solids</u>	5597.7	0	5597.7
<u>Notes</u>		*2 tanks disconnected: 205 Hunts Neck connected to sewer in PY4; 209 Odd Road connected to sewer in PYS. Per DEQ guidance, each is credited with 9.432 lbs./yr TN reduction. These septic tanks are in addition to those credited in the first Action Plan.	

**Means and Methods Used to Meet the Required Reductions for the Second Permit Cycle**

The City completed its 40% required reduction for the second permit cycle from 2018-2023. The City entered into a nutrient and sediment trading agreement with the Hampton Roads Sanitation District to meet the required reduction. A copy of this agreement, along with the signed credit transfer form, is included in the appendix. The City also continued to claim credit for septic tank disconnection and the subsequent connection to City sewer. The following table summarizes the achieved load reductions through the Second Permit Cycle.

**Table 3: Load Reductions Achieved through June 30, 2023**

<u>Pollutant</u>	<u>Load Reductions Achieved by Stormwater BMPs and other methods in first permit cycle (2013-2018)</u>	<u>Load Reductions Achieved by Septic Tank Disconnection/Connection to Sewer occurring during second permit cycle (2018-2023)</u>	<u>HRSD Credits Received in the second permit cycle (2018-2023)</u>	<u>Total Load Reductions Achieved through 6/30/2023 (end of second permit cycle), lb/yr</u>
<u>Nitrogen</u>	181.62	66.024	238.116	<b>485.76</b>
<u>Phosphorus</u>	18.57	0	67.04	<b>85.61</b>
<u>Total Suspended Solids</u>	5597.7	0	21803.16	<b>27400.86</b>

**Determination of Remaining Total Pollutant Load Reductions Required by June 30, 2028**

The City of Poquoson is required to have reached 100% of the total pollutant load reductions by the end of the third permit cycle in June 2028. These load reductions include both reductions made to date and those that will be accomplished in the final permit cycle. The following table shows the remaining reductions the City is required to achieve by the end of the third permit cycle.



**Table 4: Load Reductions Required by June 30, 2028**

<u>Pollutant</u>	<u>Total Load reductions required by the end of the third cycle (6/30/28), lb/yr</u>	<u>Total Load Reductions Achieved through end of second permit cycle (6/30/2023), lb/yr</u>	<u>Total Remaining Required Load Reduction, lb/yr</u>
<b>Nitrogen</b>	1167.26	485.76	<b>681.50</b>
<b>Phosphorus</b>	214.03	85.61	<b>128.42</b>
<b>Total Suspended Solids</b>	68502.14	27400.16	<b>41101.98</b>

**Means and Methods to Meet the Required Reductions for Upcoming Permit Cycle from July 1, 2023-June 30, 2028**

The City of Poquoson has entered into a nutrient and sediment trading agreement with the Hampton Roads Sanitation District to meet the upcoming load reduction requirements. This agreement, the Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration, is provided in the appendix. The following table shows the credits reserved through the agreement and those needed to accomplish the load reductions.

**Table 5: HRSD Credits vs. Required Reductions**

<b><u>Pollutant</u></b>	<b><u>Additional Load Reductions Required by June 30, 2028, lb/yr</u></b>	<b><u>Remaining HRSD Credits Reserved by the City of Poquoson by the MOA (lb/yr)</u></b>
<b><u>Nitrogen</u></b>	<b><u>681.5</u></b>	870.724
<b><u>Phosphorus</u></b>	<b><u>128.42</u></b>	136.26
<b><u>Total Suspended Solids</u></b>	<b><u>41101.98</u></b>	43,274.04

In addition, Poquoson will continue to

- maintain its BMPs;
- Track stormwater credits created on new City projects that exceed stormwater regulation-required pollution removal; and
- Promote septic tank to sewer connection conversions.

Septic tank conversions and other possible in-ground pollutant credits are not calculated herein or included in this plan’s tables.

The City may take additional actions in furtherance of the Bay TMDL goals. This may include upgrades to existing City-owned ponds or new BMPs. These measures are not reported herein because pollutant load reductions achieved will exceed MS4 permit requirements. Additional pollutant removals will be reported in accordance with MS4 permit requirements and in the yearly TMDL status updates.

### **Means and Methods to Offset increased Loads from Construction Between July 1, 2009 to June 30, 2014**

Local governments must offset increased loads from projects initiating construction between July 1, 2009 and June 30, 2014 that disturbed one acre or greater and used an average land cover condition greater than 16% impervious cover. There are no such projects in the City of Poquoson and therefore no additional loads were created. Poquoson consistently used an average land cover of 16% impervious throughout this period. No projects were constructed that used an average impervious land cover condition greater than 16%.

### **Means and Methods to Offset Increased Loads from Grandfathered Projects**

Local governments must offset increased loads from projects that are grandfathered in accordance with 4VAC50-68-48 that disturbed one acre or greater, began construction after July 1, 2014, and used an average land cover condition greater than 16% in the design of post-development stormwater management facilities. Poquoson does not have any grandfathered projects that meet this condition. Therefore, there are no required means and methods to offset increased loads from grandfathered projects.

### **Modifications to the TMDL or Watershed Implementation Plan**

The City of Poquoson reserves the right to substitute other means and methods, BMPs, and types of treatment practices. Modifications to the TMDL plan shall be addressed during the permit re-application. Actions taken during the permit cycle will be reported in the MS4 permit annual reports.

## **Future Projects and Associated Acreage That Qualify as Grandfathered**

There are no future projects and associated acreage within the City that qualify as grandfathered in accordance with 4VAC50-60-48.

## **Estimate of Expected Costs**

The credits generated by HRSD and being used for nutrient and sediment trading are being funded by HRSD ratepayers. More than 95% of the households in Poquoson are connected to sewer and are therefore HRSD ratepayers. Per the attached MOA, there is no direct cost to the City of Poquoson because its citizens are already funding these credits. Funding for the City's Bay TMDL work will come directly from citizens to HRSD without passing through City coffers.

Any additional work completed by the City in furtherance of the Bay TMDL goals will be funded through General Fund monies. The Bay TMDL is part of the City's Capital Improvement Plan.

## **Public Comment**

The TMDL Action Plan will be made available for public comment after DEQ reviews the first draft.