


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 1st 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>
<u>Nitrogen</u>	Regulated urban impervious	7.31	636.28	4651.2068	0.09	418.608612	<u>1167.25597</u>
	Regulated urban pervious	7.65	1631.04	12477.456	0.06	748.64736	
<u>Phosphorus</u>	Regulated urban impervious	1.51	636.28	960.7828	0.16	153.725248	<u>214.032952</u>
	Regulated urban pervious	0.51	1631.04	831.8304	0.0725	60.307704	
<u>Total Suspended Solids</u>	Regulated urban impervious	456.68	636.28	290576.3504	0.2	58115.27008	<u>68502.1406</u>
	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 PY5. 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	485.76
<u>Phosphorus</u>	18.57	0	67.04	85.61
<u>Total Suspended Solids</u>	5597.7	0	21803.16	27400.86

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>
<u>Nitrogen</u>	1167.26	485.76	681.50
<u>Phosphorus</u>	214.03	85.61	128.42
<u>Total Suspended Solids</u>	68502.14	27400.16	41101.98

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

<u>Pollutant</u>	<u>Additional Load Reductions Required by June 30, 2028 , lb/yr</u>	<u>Remaining HRSD Credits Reserved by the City of Poquoson by the MOA (lb/yr)</u>
<u>Nitrogen</u>	<u>681.5</u>	870.724
<u>Phosphorus</u>	<u>128.42</u>	136.26
<u>Total Suspended Solids</u>	<u>41101.98</u>	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 was made available for public comment from October 2nd, 2024 to October 25th, 2024. No comments were received.

Appendix

Table 4. Computation of Proposed Credits for First Permit Cycle (5% of the Level 2 Scoping Run)

SUMMARY — Reductions Required for First Permit Cycle, 5% of the Level 2 Scoping Run			
	TN	TP	TSS
5% Required Annual Reductions - (1st Permit Cycle)	58.36	10.70	3,425.11
Total Annual Reductions (lbs/yr) from BMPs	162.76	18.57	5,597.70
Pounds in Excess of Requirements: (carried forward to 2nd permit cycle)	✓ 104.40	✓ 7.87	✓ 2,172.59

1-1. Proposed Created Wetland (In Progress)

Land Use	Acres	Loading Rates (lbs/ac/yr)			Pollutant Loads (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Forest	7.42	2.13	0.07	27.61	15.80	0.52	204.87
Reg. Pervious	4.14	7.65	0.51	72.78	31.67	2.11	301.31
Reg. Impervious	8.88	7.31	1.51	456.68	64.91	13.41	4,055.32
Total (lbs/yr)		112.39	16.04	4,561.49			
Removal Efficiency*		15%	24%	30%			
Annual Reduction (lbs/yr)		16.86	3.85	1,368.45			

*Efficiencies taken from the Bay Program Retrofit Curves for a treatment depth of 0.23 inches.

1-2. Proposed Wet Pond (In Progress)

Land Use	Acres	Loading Rates (lbs/ac/yr)			Pollutant Loads (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Forest	1.86	2.13	0.07	27.61	3.96	0.13	51.35
Reg. Pervious	1.84	7.65	0.51	72.78	14.08	0.94	133.92
Reg. Impervious	3.41	7.31	1.51	456.68	24.93	5.15	1,557.28
Total (lbs/yr)		42.96	6.22	1742.55			
Removal Efficiency*		20%	45%	60%			
Annual Reduction (lbs/yr)		8.59	2.80	1045.53			

*Chesapeake Bay Program established efficiencies for wet ponds.

1-3. Land Use Change - 127 Ridge Rd. (Completed)

Area Converted	Acres	Load Reductions (lbs/ac/yr)			Total Reductions (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Impervious to Grass	0.08	6.06	1.17	430.00	0.48	0.09	34.40
Pervious to Grass*	0.21	4.41	0.08	-	0.93	0.02	-
Total Reduction for Land Conversion (lbs/yr)		1.41	0.11	34.40			

*Pervious land converted was managed turf. See Figure 4 for photos.

Table 4. Computation of Proposed Credits for First Permit Cycle (5% of the Level 2 Scoping Run)

1-4. Hunts Neck Estates Wet Pond (Online 2/2/2006)

Land Use	Acres	Loading Rates (lbs/ac/yr)			Pollutant Loads (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Forest	1.09	2.13	0.07	27.61	2.32	0.08	30.09
Reg. Pervious	12.86	7.65	0.51	72.78	98.38	6.56	935.95
Reg. Impervious	2.51	7.31	1.51	456.68	18.35	3.79	1,146.27
Total (lbs/yr)		119.05	10.43	2,112.31			
Removal Efficiency*		20%	45%	60%			
Annual Reduction (lbs/yr)		23.81	4.69	1,267.39			

*Chesapeake Bay Program established efficiencies for wet ponds.

1-5. Island Cove Wet Pond (Online 6/21/2007)

Land Use	Acres	Loading Rates (lbs/ac/yr)			Pollutant Loads (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Forest	0.14	2.13	0.07	27.61	0.30	0.01	3.87
Reg. Pervious	4.28	7.65	0.51	72.78	32.74	2.18	311.50
Reg. Impervious	1.28	7.31	1.51	456.68	9.36	1.93	584.55
Total (lbs/yr)		42.40	4.13	899.91			
Removal Efficiency*		20%	45%	60%			
Annual Reduction (lbs/yr)		8.48	1.86	539.95			

*Chesapeake Bay Program established efficiencies for wet ponds.

1-6. River's Edge Wet Pond (Online 12/3/2007)

Land Use	Acres	Loading Rates (lbs/ac/yr)			Pollutant Loads (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Forest	1.76	2.13	0.07	27.61	3.75	0.12	48.59
Reg. Pervious	8.77	7.65	0.51	72.78	67.09	4.47	638.28
Reg. Impervious	1.17	7.31	1.51	456.68	8.55	1.77	534.32
Total (lbs/yr)		79.39	6.36	1,221.19			
Removal Efficiency*		20%	45%	60%			
Annual Reduction (lbs/yr)		15.88	2.86	732.71			

*Chesapeake Bay Program established efficiencies for wet ponds.

Table 4. Computation of Proposed Credits for First Permit Cycle (5% of the Level 2 Scoping Run)

1-7. Villas Phase 2 Infiltration Basin (Online 7/1/2008)

Land Use	Acres	Loading Rates (lbs/ac/yr)			Pollutant Loads (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Forest	-	2.13	0.07	27.61	-	-	-
Reg. Pervious	2.60	7.65	0.51	72.78	19.89	1.33	189.23
Reg. Impervious	0.99	7.31	1.51	456.68	7.24	1.49	452.11
Total (lbs/yr)					27.13	2.82	641.34
Removal Efficiency*					80%	85%	95%
Annual Reduction (lbs/yr)					21.70	2.40	609.27

*Chesapeake Bay Program established efficiencies for infiltration practices w/o sand, veg.

1-8. Septic Tank Disconnects/Connections to Sanitary Sewer

Conversion	Number of Households Connected to Sewer	Load Reductions (lbs/Household/yr)*			Total Reductions (lbs/yr)		
		TN	TP	TSS	TN	TP	TSS
Septic to Sanitary Sewer	7.0	9.432	-	-	66.02	-	-
Total Reduction for Land Conversion (lbs/yr)					66.02	-	-

*Per email from DEQ to City on June 29, 2015 based on a stream loading value of 3.6 lb TN/year/person and an average number of people per household of 2.62 based on Poquoson's 2009-2013 Census data.

See the summary at the beginning of this table for cumulative totals.

Table 5. Projects for First Permit Cycle (5% of the Level 2 Scoping Run)

Project	Location(s)	2015 Estimated Cost ¹	Notes
1-1. Proposed Created Wetland (In Progress)	Adjacent to Oxford Run Ditch just south of Victory Boulevard	-	Project funded previously (SLAF grant)
1-2. Proposed Wet Pond (In Progress)	Adjacent to Oxford Run Ditch, west of the City Hall parking lot	-	Project funded previously (SLAF grant)
1-3. Land Use Change - 127 Ridge Road (Completed)	127 Ridge Road	-	Project completed previously
1-4. Hunts Neck Estates Wet Pond	South of Volunteer Trail, in the Hunts Neck Estates Subdivision	-	Pond online 2/2/2006
1-5. Island Cove Wet Pond	North of Elm Street in the Island Cove subdivision	-	Pond online 6/21/2007
1-6. Rivers Edge Wet Pond	Adjacent to Hollingsworth Way	-	Pond online 12/3/2007
1-7. Villas Phase 2 Infiltration Basin	Between Ambrosia Place and Government Ditch	-	Basin online 7/1/2008
1-8. Septic Tank Disconnects/Connections to Sanitary Sewer	(See notes)	\$ -	Completed after July 1, 2009
Total Cost:		\$ -	

Notes:

1. These projects have been fully funded or completed prior to December 30, 2015. There will be no additional cost to construct them.
2. See Figure 3 for specified locations.
3. See Table 4 for computation and tabulation of Chesapeake Bay TMDL pollutant removal credits.
4. The following parcels were connected to sanitary sewer: 220 Browns Neck Rd., 2 Lyons Creek Dr., 3 Lyons Creek Dr., 4 Lyons Creek Dr., 5 Lyons Creek Dr., 6 Lyons Creek Dr., 201-A Odd Rd. Nitrogen reductions were based on a stream loading value of 3.6 lb TN/year/person, and an average of 2.62 people per household in Poquoson according to the City's 2009-2013 Census data. The stream loading value of 3.6 lb TN/year/person and Poquoson's average number of people per household of 2.62 were confirmed in a DEQ email to the City dated June 29, 2015.

Table 6. Schedule for First Permit Cycle (5% of the Level 2 Scoping Run)

Project	DATES ²			Notes
	BMP Initiated ¹	BMP Construction to Begin	BMP Installation Completed	
1-1. Proposed Created Wetland (In Progress)	n/a	1/22/2016	6/20/2016	SLAF grant. Design completed in 2015.
1-2. Proposed Wet Pond (In Progress)	n/a	1/22/2016	6/20/2016	SLAF grant. Design completed in 2015.
1-3. Land Use Change - 127 Ridge Rd. (Completed)	n/a	-	6/1/2013	Completed.
1-4. Hunts Neck Estates Wet Pond	n/a	-	2/2/2006	Completed.
1-5. Island Cove Wet Pond	n/a	-	6/21/2007	Completed.
1-6. Rivers Edge Wet Pond	n/a	-	12/3/2007	Completed.
1-7. Villas Phase 2 Infiltration Basin	n/a	-	7/1/2008	Completed.
1-8. Septic Tank Disconnects/Connections to Sanitary Sewer	After 6/30/2009	-	2023	Completed.

Notes:

1. This column is for non-structural BMPs.
2. This information is formatted as requested in DEQ Guidance Memo No. 15-2005 (Finalized 5/18/2015).
3. This schedule can be used as the annual benchmarks required by the Phase II General Permit.

**HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION**

THIS HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT FOR CHESAPEAKE BAY RESTORATION (this "Agreement") is made this 5TH day of JULY, 2017, by and between the Hampton Roads Sanitation District ("HRSD") and the City of Poquoson (the "City") (each a "Party" and jointly the "Parties").

BACKGROUND

A. The HRSD Plants. HRSD owns and operates various wastewater treatment plants that are authorized to discharge the nutrients total nitrogen ("TN") and total phosphorus ("TP") as well as sediment as total suspended solids ("TSS") to the Chesapeake Bay watershed (the "HRSD Plants"). The HRSD Plants have TN, TP and TSS waste load allocations assigned by the State Water Control Board and the Virginia Department of Environmental Quality (jointly, "DEQ") pursuant to the Water Quality Management Planning Regulation, 9 VAC 25-720, and by the U.S. Environmental Protection Agency ("EPA") pursuant to the Chesapeake Bay Total Maximum Daily Load ("TMDL") and related Virginia Watershed Implementation Plan ("WIP"). The HRSD Plants are subject to the General Virginia Pollutant Discharge Elimination System ("VPDES") Watershed Permit Regulation for TN and TP Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia, 9 VAC 25-820, most recently reissued by DEQ effective February 8, 2017, as hereafter modified or reissued from time to time (the "Watershed General Permit"). Due to exceptional performance and current operating conditions, the HRSD Plants currently discharge less TN, TP and TSS than they are authorized to discharge under the Watershed General Permit while protecting Chesapeake Bay water quality and, therefore, HRSD has the ability to provide TN, TP and TSS credits on at least a temporary basis.

B. The Locality MS4. The City owns and operates a municipal separate stormwater sewer system ("MS4") authorized to discharge TN, TP and TSS to the Chesapeake Bay watershed. Like the HRSD Plants, the MS4 is subject to the Chesapeake Bay TMDL as derived from the Virginia WIP and to a VPDES Permit issued to the City by DEQ. Pursuant to the TMDL, WIP and VPDES Permit for the MS4, it is anticipated that the City will reduce MS4-related TN, TP and TSS discharges pursuant to City-developed and DEQ-approved TMDL Action Plans for each of three, five-year permit cycles, which are referred to as the First Bay TMDL Permit Cycle (5% Progress), Second Bay TMDL Permit Cycle (40% Progress), and Third Bay TMDL Permit Cycle (100% Progress). During 2017, the City is in its First Bay TMDL Permit Cycle.

C. The SWIFT Project. HRSD's Sustainable Water Initiative For Tomorrow ("SWIFT") Project was conceived with multiple benefits in mind for the Hampton Roads region. Aside from TMDL benefits, this innovative water purification project is designed to enhance the sustainability of the long-term groundwater supply and help address other environmental pressures such as sea level rise and saltwater intrusion. The SWIFT Project is intended to achieve these benefits by taking already-treated wastewater that would otherwise be discharged into the Chesapeake Bay watershed, purifying it through additional rounds of advanced water treatment to meet drinking water standards, and injecting the resulting drinking quality water into the Potomac aquifer deep underground. With respect to TMDL benefits, SWIFT will result in a

significant reduction in the total volume of HRSD discharge to the Chesapeake Bay watershed, to achieve greater environmental benefits with corresponding significant reductions of TN, TP and TSS discharges to the Chesapeake Bay watershed.

D. Legal Authority. Pursuant to Virginia Code § 62.1-44.19:21, the City may acquire and use TN and TP credits for purposes of compliance with the Chesapeake Bay TMDL loading reductions of its MS4 VPDES Permit, including credits generated by the HRSD Plants by discharging less TN or TP than permitted under the Watershed General Permit. Pursuant to Virginia Code § 62.1-44.19:21.1, the City may also acquire and use TSS credits for purposes of compliance with the Chesapeake Bay TMDL loading reductions of its MS4 VPDES Permit, including credits generated by the HRSD Plants by discharging less TSS than allocated under the Chesapeake Bay TMDL. With respect to all three parameters, it is recognized that this authority does not limit or otherwise affect the authority of DEQ to establish and enforce more stringent water quality-based effluent limitations in permits where such limitations are necessary to protect local water quality and, further, that the use of water quality credits does not relieve an MS4 permit holder of any requirement to comply with applicable local water quality-based limitations.

E. Redevelopment-Based MS4 TMDL Action Plan. The City expects to achieve its Chesapeake Bay TMDL reduction goals more cost-effectively by utilizing HRSD-generated TN, TP and TSS credits before and during operation of the SWIFT Project in lieu of stormwater retrofit projects on a condensed 10-year schedule (*i.e.*, Second and Third Bay TMDL Permit Cycles) coupled with ongoing stormwater quality improvements from redevelopment projects, which are subject to TP reduction criteria (and associated TN and TSS reductions) under the applicable water quality design requirements of DEQ's Virginia Stormwater Management Program Regulation, 9VAC25-870-63.A.2. By aligning with the normal redevelopment cycle rather than scheduling retrofits prior to redevelopment activity, the City's Chesapeake Bay TMDL Action Plan will also conserve scarce state and local resources for other important water quality projects.

F. Credit Trading Premise of SWIFT. For all of the above reasons and others, the ability to generate TN, TP, and TSS credits through the SWIFT Project and apply those credits as progress under the Hampton Roads localities' MS4 Permits and associated TMDL Action Plans is a fundamental premise for the SWIFT Project. HRSD is proceeding with the SWIFT Project, and the City is supporting it, in large part in reliance on these critical water quality trading-based benefits.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing premises (hereby incorporated as if fully set forth herein), the mutual covenants and conditions herein, and other good and valuable consideration, the receipt and sufficiency of which HRSD and the City acknowledge, the Parties hereby agree as follows.

1. Annual Credit Transfers Prior to SWIFT Feasibility Determination. Prior to HRSD's determination of SWIFT Project feasibility as provided below, HRSD shall annually generate and transfer to the City the quantity of water quality credits needed to meet the City's

compliance requirements under its DEQ-Approved Chesapeake Bay TMDL Action Plan for its MS4, as provided below. This annual transfer shall be made by HRSD's execution and delivery to the City of the Annual Water Quality Credit Transfer Form (Attachment B hereto) on or before May 20 immediately following each calendar year of HRSD's credit generation.

a. Determination of Total Reductions Needed. The City shall determine the total TN, TP and TSS reductions required for its full MS4 implementation of the Chesapeake Bay TMDL and WIP as issued in December 2010, in accordance with the procedures established in its VPDES Permit and DEQ Guidance Memorandum 15-2005, Chesapeake Bay TMDL Special Condition Guidance (May 18, 2015).

b. Credit Demand Minimization Elements. The City shall minimize its calculated reductions by (i) accurately mapping and delineating its existing MS4 service area, (ii) taking full credit for reductions achieved by stormwater projects and regulated redevelopment projects occurring prior to the effective date of the City's VPDES Permit in effect as of the effective date of this Agreement, and (iii) other procedures or accounting measures reasonably available to the City.

c. Credit Transfer Ceilings. HRSD's annual credit transfer obligations to the City shall not exceed the lesser of (i) the City's initial estimate of credit needs, or (ii) 95 percent of the City's total calculated reductions determined in accordance with Subparagraphs 1.a. and 1.b. and set forth in a DEQ-approved Chesapeake Bay TMDL Action Plan, or (iii) the quantity of credits actually needed to meet such total calculated reductions. The City's initial estimate of credit needs as of the effective date of this Agreement is set forth in Section 1 of Attachment A hereto. Following DEQ's approval of the City's Chesapeake Bay TMDL Action Plan and subsequent acceptance of the credit needs by HRSD as consistent with the requirements of this Subparagraph 1.c., HRSD shall issue an update to Attachment A setting forth in Section 2 thereof HRSD's actual annual credit transfer obligation determined in accordance with this Subparagraph 1.c.

d. Term & Termination of Initial Credit Transfers. HRSD's annual credit transfer obligations to the City under this Paragraph 1 shall expire upon (i) conversion to a permanent transfer of wasteload allocations as provided in Paragraph 2, (ii) termination as specifically authorized by any other provision of this Agreement, or (iii) December 31, 2036, whichever occurs first.

2. Permanent Transfer After SWIFT Feasibility Determination. Upon HRSD's determination that full-scale implementation of the SWIFT Project is feasible, HRSD shall permanently transfer to the City the quantity of TN, TP and TSS waste load allocations set forth for its MS4 on Attachment A hereto, as updated and issued by HRSD in accordance with Paragraph 1 c.

a. Factors for Feasibility Determination. Feasibility shall be determined in HRSD's sole discretion taking into account (i) whether all required permits and approvals have been acquired in final, non-appealable form acceptable to HRSD including the federal Safe Drinking Water Act Underground Injection Control Permit, (ii) whether the first full-scale

HRSD plant upgrade is online and performing as desired, (iii) whether full-scale implementation of the SWIFT Project is technically and financially feasible, and (iv) other material factors.

b. Timing for Feasibility Determination. Without limiting HRSD's discretion to determine whether full-scale SWIFT Project implementation is feasible or when to make such determination, it is the mutual goal of the Parties for HRSD to make such determination as soon as reasonably possible and not later than December 31, 2025, so as to preserve the maximum amount of time prior to the termination date for the City to implement stormwater retrofit projects or other permit compliance measures that might be necessary should it be determined that the SWIFT Project is not feasible.

3. Regulatory Plans & Approvals. In furtherance of the annual credit transfer and, when applicable, the permanent transfer contemplated by this Agreement, the Parties shall collaborate on appropriate submittals to and requests of DEQ, as follows; however, HRSD shall have no responsibility for the failure or refusal of DEQ or other governmental authority to approve such transfers.

a. City's TMDL Action Plan. For purposes of annual and, when applicable, permanent transfers, the City shall each include in its Chesapeake Bay TMDL Action Plan a provision for the receipt and use of TN, TP and TSS credits from the HRSD Plants in the form set forth in Attachment C hereto (or such other form as may be mutually agreeable to the City and HRSD).

b. HRSD Watershed General Permit Registration. For purposes of permanent wasteload allocation transfers, when applicable, HRSD shall modify its Watershed General Permit Registration and, if necessary, individual VPDES permits to reflect such transfers.

c. Virginia Chesapeake Bay TMDL Phase III WIP. HRSD and the City shall collaborate to seek inclusion in the Phase III WIP of recognition of the SWIFT Project and the annual and, when applicable, permanent transfers contemplated by this Agreement.

4. Authorized Use of Credits. The City agrees that its sole and limited use of the TN, TP, and TSS credits transferred under this Agreement shall be for the purpose of MS4 Permit compliance and Chesapeake Bay TMDL implementation and that it shall not transfer any portion of HRSD-generated credits (or waste load allocations, if applicable) to any other person or entity. In the event that the City no longer requires some or all of the credits (or waste load allocations) for such use, they shall revert to HRSD and HRSD shall update and reissue Attachment A accordingly.

5. Mutual Cooperation. The Parties shall continue to cooperate with each other as reasonably necessary to confirm or bring about the transfers contemplated by this Agreement.

6. Permits & Approvals. If for any reason any federal, state, regional or local government or agency fails to issue any necessary permit, approval or other authorization for the SWIFT Project or the transfers contemplated by this Agreement, HRSD shall be excused from its performance hereunder.

7. Force Majeure. The obligations of HRSD, including its annual or permanent transfer obligations, shall be suspended while and as long as performance is prevented or impeded by strikes, disturbances, riots, fire, severe weather, acts of war, acts of terrorism, acts of God, government action (other than by HRSD), major technical, engineering or construction related delays, or any other cause similar or dissimilar to the foregoing that is beyond the reasonable control of and not due to the gross negligence of HRSD.

8. Change in Law. In the event of any material change in applicable laws or regulations, the Parties shall work together to attempt to amend this Agreement to conform to such change, while maintaining as closely as practical the provisions and intent of this Agreement. If in any such event HRSD is unable to perform its transfer obligations as provided herein, the City shall be solely responsible for otherwise meeting its TMDL and MS4 Permit obligations.

9. Significant Financial & Budgetary Constraints. Notwithstanding any other provision of this Agreement or any prior determination of feasibility of the SWIFT Project, HRSD reserves the right to terminate or renegotiate this Agreement in the event HRSD experiences significant financial or budgetary challenges which, in HRSD's opinion, would significantly impair its ability to perform its obligations hereunder. In such event, the Parties shall work together to attempt to amend this Agreement to accommodate such challenges, with the goal of providing annual credits to the City (and to other Hampton Roads localities with similar water quality credit agreements) as practical.

10. Credit Supply Constraints. Notwithstanding any other provision of this Agreement, to the extent that HRSD determines in its sole discretion that its available quantity of water quality credits (or allocations) is insufficient to meet the total MS4 Chesapeake Bay TMDL Action Plan compliance requirements of the City and of all other Hampton Roads localities that are party or become party to a similar water quality credit agreement, HRSD's obligations hereunder shall be limited to transferring to the City its pro rata share of HRSD's available credits based on pollutant-specific total credit needs of all Hampton Roads localities. HRSD agrees to provide the City with notice of its ability only to transfer a pro rata share of HRSD's available credits as promptly as possible but no later than 90 days after becoming aware of the event limiting HRSD's ability to meet the total credit needs of all Hampton Roads Localities. For clarity, HRSD shall assume no obligation under this Agreement to install, upgrade, improve, or significantly alter the operation of any portion of its sewerage system or treatment works for purposes of providing water quality credits (or allocations).

11. No Third-Party Beneficiaries. This Agreement is solely for the benefit of the Parties hereto and their permitted successors and assigns and shall not confer any rights or benefits on any other person or entity.

12. No Assignment. This Agreement, and the rights and obligations established hereunder, shall be binding upon and inure to the benefit of any successors of the Parties. However, no Party may transfer or assign this Agreement, or its rights or obligations hereunder, without the prior written consent of the other Party, which consent shall not be unreasonably withheld.

13. Expenses; Commissions. Except as provided herein, each Party shall pay its own fees and expenses, including its own counsel fees, incurred in connection with this Agreement or any transaction contemplated hereby. The Parties represent and warrant to each other that they have not dealt with any business broker or agent who would be entitled to a brokerage commission or finders fee as a result of this Agreement or any related transactions. .

14. Governing Law; Venue; Severability. This Agreement shall be construed in accordance with and governed for all purposes by the laws of the Commonwealth of Virginia. This Agreement is a Virginia contract deemed executed and accepted in the City of Virginia Beach; and all questions with respect to any of its provisions shall be instituted, maintained, and contested in a court of competent jurisdiction in the City of Virginia Beach, Virginia or the U.S. District Court for the Eastern District of Virginia. If any word or provision of this Agreement as applied to any Party or to any circumstance is adjudged by a court to be invalid or unenforceable, the same shall in no way affect any other circumstance or the validity or enforceability of any other word or provision.

15. No Waiver. Neither any failure to exercise or any delay in exercising any right, power or privilege under this Agreement by either Party shall operate as a waiver, nor shall any single or partial exercise of any right, power or privilege hereunder preclude the exercise of any other right, power or privilege. No waiver of any breach of any provision shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision, nor shall any waiver be implied from any course of dealing.

16. Entire Agreement; Amendments. This Agreement contains the entire agreement between the Parties as to the subject matter hereof and supersedes all previous written and oral negotiations, commitments, proposals and writings. No amendments may be made to this Agreement except by a writing signed by both Parties.

17. Counterparts; Signatures; Copies. This Agreement may be executed in counterparts, both of which shall be deemed an original, but all of which together shall constitute one and the same instrument. A facsimile or scanned signature may substitute for and have the same legal effect as an original signature. Any copy of this executed Agreement made by photocopy, facsimile or scanner shall be considered the original for all purposes.

18. Authorization. Each Party represents that its execution, delivery and performance under this Agreement have been duly authorized by all necessary action on its behalf, and do not and will not violate any provision of its charter or enabling legislation or result in a material breach of or constitute a material default under any agreement, indenture, or instrument of which it is a party or by which it or its properties may be bound or affected.

IN WITNESS WHEREOF, the Parties hereto have caused the execution of this Agreement as of the date first written above.

[SIGNATURES BEGIN ON NEXT PAGE]

**SIGNATURE PAGE OF HAMPTON ROADS WATER QUALITY CREDIT
AGREEMENT FOR CHESAPEAKE BAY RESTORATION BY AND BETWEEN
HRSD AND CITY OF POQUOSON**

**HAMPTON ROADS SANITATION
DISTRICT**

By: _____



Edward G. Henifin
General Manager

**SIGNATURE PAGE OF HAMPTON ROADS WATER QUALITY CREDIT
AGREEMENT FOR CHESAPEAKE BAY RESTORATION BY AND BETWEEN
HRSD AND CITY OF POQUOSON**

CITY OF POQUOSON

By: _____


J. Randall Wheeler
City Manager

ATTEST:

City Clerk

APPROVED AS TO FORM:


City Attorney

**HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT A**

Water Quality Credit Needs for Second & Third Bay TMDL Permit Cycles

***Section 1: Initial Estimate of Credit Needs (lbs/yr)
[As Estimated by City as of Effective Date of this Agreement]***

Parameter	James River Basin			York River Basin		
	2 nd Permit Cycle	3 rd Permit Cycle	Total Both Cycles	2 nd Permit Cycle	3 rd Permit Cycle	Total Both Cycles
TN	0.0	0.0	0.0	408.52	700.32	1108.84
TP	0.0	0.0	0.0	74.90	128.40	203.30
TSS	0.0	0.0	0.0	23,975.8	41,101.4	65,077.2

***Section 2: City-Calculated and HRSD-Accepted Credit Needs (lbs/yr)
Under DEQ-Approved TMDL Action Plan and Subparagraph 1.c. of this Agreement
[As Accepted by HRSD After DEQ Approval of City's TMDL Action Plan]***

Parameter	James River Basin			York River Basin		
	2 nd Permit Cycle	3 rd Permit Cycle	Total Both Cycles	2 nd Permit Cycle	3 rd Permit Cycle	Total Both Cycles
TN	0.0	0.0	0.0	408.52	700.32	1108.84
TP	0.0	0.0	0.0	74.90	128.40	203.30
TSS	0.0	0.0	0.0	23,975.8	41,101.4	65,077.2

* DEQ approved the City's TMDL Action Plan prior to the effective date of this Agreement. Section 2 is complete.

**HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT B**

Annual Water Quality Credit Transfer Form

Instructions: To be completed and executed by HRSD and delivered to the City on or before each May 20 immediately following the calendar year of credit generation by HRSD.

By execution and delivery of this Annual Credit Transfer Form, HRSD transfers the following water quality credits in the amounts specified to the City in accordance with, and for the specific and limited purposes of, the Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration.

Transferor: Hampton Roads Sanitation District

Transferee (MS4): City of Poquoson, Virginia

Year Credits Generated: _____

Date Credits Transfer: _____

River Basin	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
James			
York			

Signed (for HRSD): _____

Name (Print): _____

Title: _____

**HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT C**

MS4 TMDL Action Plan Provision for Use of HRSD-Generated Water Quality Credits

The intent of this plan is the generation and use of TN, TP and TSS credits before and during operation of the SWIFT Project in collaboration with HRSD pursuant to the Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration to which the City and HRSD are signatories. This compliance method is in lieu of more traditional stormwater retrofit projects, which may not be feasible to execute on a condensed 10-year schedule (i.e., Second and Third Bay TMDL Permit Cycles). Not only does this method have the advantage of more reliably meeting the MS4 Permit's short deadlines, but it is also beneficial to the public in that it will meet the City's Chesapeake Bay TMDL reduction goals more cost-effectively than otherwise possible. This component of the plan is fully in accordance with Virginia Code §62.1-44.19:21 (TN and TP) and §62.1-44.19:21.1 (TSS). The quantity of reduction credits from the SWIFT Project that are allocated to this TMDL Action Plan for the James River Basin are 0.0 lbs/yr TN, 0.0 lbs/yr TP, and 0.0 lbs/yr TSS and for the York River Basin are 1108.84 lbs/yr TN, 203.30 lbs/yr TP, and 65,077.2 lbs/yr TSS.

**HAMPTON ROADS WATER QUALITY CREDIT
AGREEMENT FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT B**

Annual Water Quality Credit Transfer Form

***Instructions: To be completed and executed by HRSD and delivered to the County on or
before
each May 20 immediately following the calendar year of credit generation by HRSD.***

By execution and delivery of this Annual Credit Transfer Form, HRSD transfers the following water quality credits in the amounts specified to the County in accordance with, and for the specific and limited purposes of, the Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration.

Transferor: Hampton Roads Sanitation District

Transferee (MS4): City of Poquoson

Year Credits Generated: 2022

Date Credits Transfer: June 1, 2023

River Basin	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
James			
York	238.116	67.04	21,803.16

Signed (for HRSD): 

Name (Print): Jamie S. Heisig-Mitchell

Title: Director of Water Quality