



Second Phase Chesapeake Bay Action Plan
Prepared by York County Public Works
August 29, 2018

MS4 Service Area Update

In accordance with the DEQ Guidance Memo No. 15-2005 for the Chesapeake Bay TMDL Special Conditions, the County is updating their MS4 service area utilizing the Urban 2010 Census area to develop the next phase TMDL action plans. The updated MS4 service area delineations follow the same process as discussed in the guidance memo and the County's Chesapeake Bay TMDL Action Plan but instead utilizes the 2010 census area.

MS4 Boundary and Exclusion Areas

The MS4 was initially defined as the urban areas, based on the 2010 Census data, within the York County boundary. Land areas covered by other MS4 permits or VPDES permits, forested lands, and open water areas were then excluded from the MS4 area. Land areas that drain by surface flow onto lands currently served by the County MS4 were accounted for, because they contribute to the County's pollutant removal requirement. Similarly, areas that drain by surface flow to other MS4s were excluded.

Table 1-1 (below) includes both the numbers for the previous MS4 service area as calculated utilizing the urban 2000 census area and the updated MS4 service area as calculated with the urban 2010 census area. It was assumed that the VPDES permits and other MS4s, VDOT roads, forested areas, agricultural areas, and open waters data files that were utilized in the previous MS4 service area were the most up to date datasets and were utilized in the development of the updated MS4 service area. The surface inflow and outflow files were updated as part of this effort based on the 2010 urban census polygon.

After evaluating the 2010 urbanized census area and the initial exclusion area files (forest, open water, VDOT, and other permittees), it was noted that there were significant land areas that appeared to be wetlands that were within the preliminary MS4 service area. The DEQ Guidance Memorandum GM-162006, TMDL Action Planning for Local TMDLs as Required in the Small MS4 General Permit (VAR04) Effective July 1, 2013 indicates that wetlands can be excluded from the MS4 service area. To determine total wetland exclusion area, the most recent National Wetlands Inventory (NWI) dataset was downloaded from the U.S. Fish and Wildlife Service on March 30, 2018. Areas associated with the wetland exclusion dataset are presented in the table below.

Table 1-1

Areas of Inclusion and Exclusion from the MS4 Service Area		
	MS4 Service Area Utilizing Urban 2000 Census Area (ac)	MS4 Service Area Utilizing Urban 2010 Census Area (ac)
York County Boundary	68,355	68,355
Census Urbanized Areas within County	23,601	25,302
Exclusion Areas		
VPDES Permits and Other MS4s (Excluding VDOT)	1,395	2,619
VDOT Roads	2,172	2,329
Forested Areas	8,483	8,499
Agricultural Areas	N/A	N/A
Open Water	595	717
Wetlands	N/A	2,421
Surface Outflow	1,637	1,294
Total Exclusion Area (Non-Overlapping) ^a	12,436	13,931
Inclusion Areas		
Surface Inflow	346	195
Total Inclusion Area	346	195
Total MS4 Service Area for Pollutant Load Calculations	11,511	11,566

a. The total exclusion area is less than the sum of the individual exclusion areas because some of the individual exclusion areas overlap.

The MS4 Service Area for pollutant load calculations is virtually the same utilizing the 2010 census area as the 2000 census area. Therefore, the pollutant removal requirements from the Phase 1 Action Plan remain unchanged.

Based on the first phase action plan, York County has the following removal requirements for the Second Phase:

Basin	Nitrogen	Phosphorus	Total Suspended Solids (TSS)
James River	91.6	14.72	5,800
York River	2220	366	112,400

York County has completed the following projects in the James River Basin from our Phase 1 Chesapeake Bay Action Plan:

Project	Nitrogen Removed	Phosphorus Removed	TSS Removed
Cook/Falcon Phase I	42.1	8.60	3,460



Project: Cook/Falcon Phase I (Before)



Project: Cook/Falcon Phase 1 (After)

York County has completed the following projects in the York River Basin from our Phase 1 Chesapeake Bay Action Plan:

Project	Nitrogen Removed	Phosphorus Removed	TSS Removed
H-1 Pond	171.0	45.6	12,330
Dare Stream Restoration	191.6	93.4	24,300
Edgehill Stream Restoration	150.0	136.0	30,200
Cook/Falcon Phase I	13.8	2.50	693
Septic to Sewer Conversions	7,514	0	0
Totals	8,040.4	277.5	67,523



H1 Pond Project



Dare Stream Restoration (Before)



Dare Stream Restoration (After)



Edgehill Stream Restoration (After)

Second Phase Removal Requirements remaining after completed projects:

Basin	Nitrogen	Phosphorus	TSS
James River	49.5	6.12	2340
York River	-5820	88.5	44,877

Projects Planned for the James River:

Currently we have two projects under design in the James River Basin which are expected to be completed by 2023. They are Siege Lane Stormwater Treatment Facility and the Charles Brown Park Stream Restoration Project.

The Siege Lane Stormwater Treatment Facility is a level 2 stormwater retention pond proposed for the corner of Siege Land and RT 17. The site has approximately 50 acres draining to it with moderate development and no water quality treatment.

The Charles Brown Park Stream Restoration Project entails approximately 875 linear feet of derogated stream with a total drainage area of around 63 acres.

We anticipate the following pollutant removal rates from these projects:

Project	Nitrogen	Phosphorus	TSS
Siege Lane	75.9	19.1	5,567
Charles Brown Park Stream Restoration	64.9	59.5	13,223
Total	140.8	78.6	18,790

Second Phase Removal after planned projects for the James River:

	Nitrogen	Phosphorus	TSS
Remaining Requirement after completed projects	49.5	6.12	2340
Anticipated Removal from Projects under Design	140.8	78.6	18,790
Anticipated Surplus Removed	91.3	72.48	16,450

Projects Planned for the York River:

We currently have six projects under construction or design. Cook/Falcon Phase II Pond and Stream Restoration, as well as the Greensprings Stream Restoration were included as future projects in our first phase action plan. Cook/Falcon Phase II is currently under construction and Greensprings Stream Restoration is nearing final design. We also have four new projects under design; Poquoson Headwaters Pond and Stream Restoration, Country Lane Pond, Goodwin Neck Complex Stream Restoration, and Bypass Road Stream Restoration.

Poquoson Headwaters Pond and Stream Restoration is a restoration of 1,650 linear feet of the Poquoson River between Ft. Eustis Blvd and Country Lane.

Country Lane Pond is a level 2 stormwater retention pond between Rt. 17 and Country Lane, just upstream from the Poquoson Headwaters project.

Goodwin Neck Complex Stream Restoration includes a stormwater pond for the York County facilities on Service Drive as well as downstream improvements.

Bypass Road Stream Restoration includes over 2,000 linear feet of stream restoration.

We anticipate the following pollutant removal rates from these projects:

Project	Nitrogen Removed	Phosphorus Removed	TSS Removed
Cook/Falcon Phase II and Wormley Creek Stream Restoration	85.0	35.0	12,900
Poquoson River Headwaters Stream Restoration	179.5	82.5	316,000
Greensprings Stream Restoration	105.0	95.2	21,200
Country Lane Stream Restoration	60	15	10,000
Goodwin Neck Road Stream Restoration	85.0	35.0	12,000
Bypass Road Stream Restoration	280.0	130.0	22,000
Totals	795	393	394,000



Cook/Falcon Phase II (Before)



Cook/Falcon Phase II (After)

Second Phase Reduction after planned projects for York River:

	Nitrogen	Phosphorus	TSS
Remaining Requirement after completed projects	-5820	88.5	44,877
Anticipated Removal from Projects under Design	795	393	394,000
Anticipated Surplus Removed	6620	304	349,000

Conclusion

As demonstrated above, York County has met our Phase I goals and has sufficient projects completed or under design to meet the Phase II Chesapeake Bay TMDL Action Plan requirements.

It is important to note, York County has also partnered with HRSD in their SWIFT initiative and will be able to acquire any required pollutant removal credits from them if our plan falls short of the required reductions.