YORK COUNTY REGIONAL CHESAPEAKE BAY POLLUTANT REDUCTION PLAN

JUNE 2014 DRAFT

(Prepared by the York County Planning Commission and Center for Watershed Protection in cooperation with the Regional CBPRP Steering Committee)

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) TMDL PLAN / CHESAPEAKE BAY POLLUTANT REDUCTION PLAN

This form is designed to assist permittees in meeting the requirements of MS4 NPDES permits for TMDL Plans and Chesapeake Bay Pollutant Reduction Plans. Complete this form if (1) there are any stormwater discharges to receiving waters that are covered by an EPA-approved TMDL and wasteload allocation(s) (WLA(s)) have been assigned to the MS4 in the TMDL, and/or (2) any portion of the urbanized area (UA) is in the Chesapeake Bay Watershed. Complete Section A if (1) applies, Section B if (2) applies, and both Sections if (1) and (2) apply. Please review the instructions and attached Frequently Asked Questions (FAQ) document carefully before completing this form.

Check all that apply:

☐ TMDL Plan / TMDL Design Details (Section A) Complete

☒ Chesapeake Bay Pollutant Reduction Plan (Section B) Completed

CBPRP GENERAL INFORMATION	
Permittee Name: York County	NPDES Permit No.: **PAG 133650**
Mailing Address: 28 East Market Street	Effective Date: May 1, 2014
City, State, Zip: York, PA 17401	Expiration Date: April 30, 2019
MS4 Contact Person: Felicia Dell	Renewal Due Date: November 1, 2018
Title: Director, York County Planning Commission	Municipality: York County
Phone: (717) 771-9870	County: York County
Email: fdell@ycpc.org	Consultant Name: N/A
Co-Permittees (if applicable):	

(General Information for other participating municipalities is provided in Appendix A)

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Section B. 1. Provide a narrative description of the drainage area of the MS4 within the UA that discharges to the Chesapeake Bay Watershed. The description should discuss pervious and impervious cover.

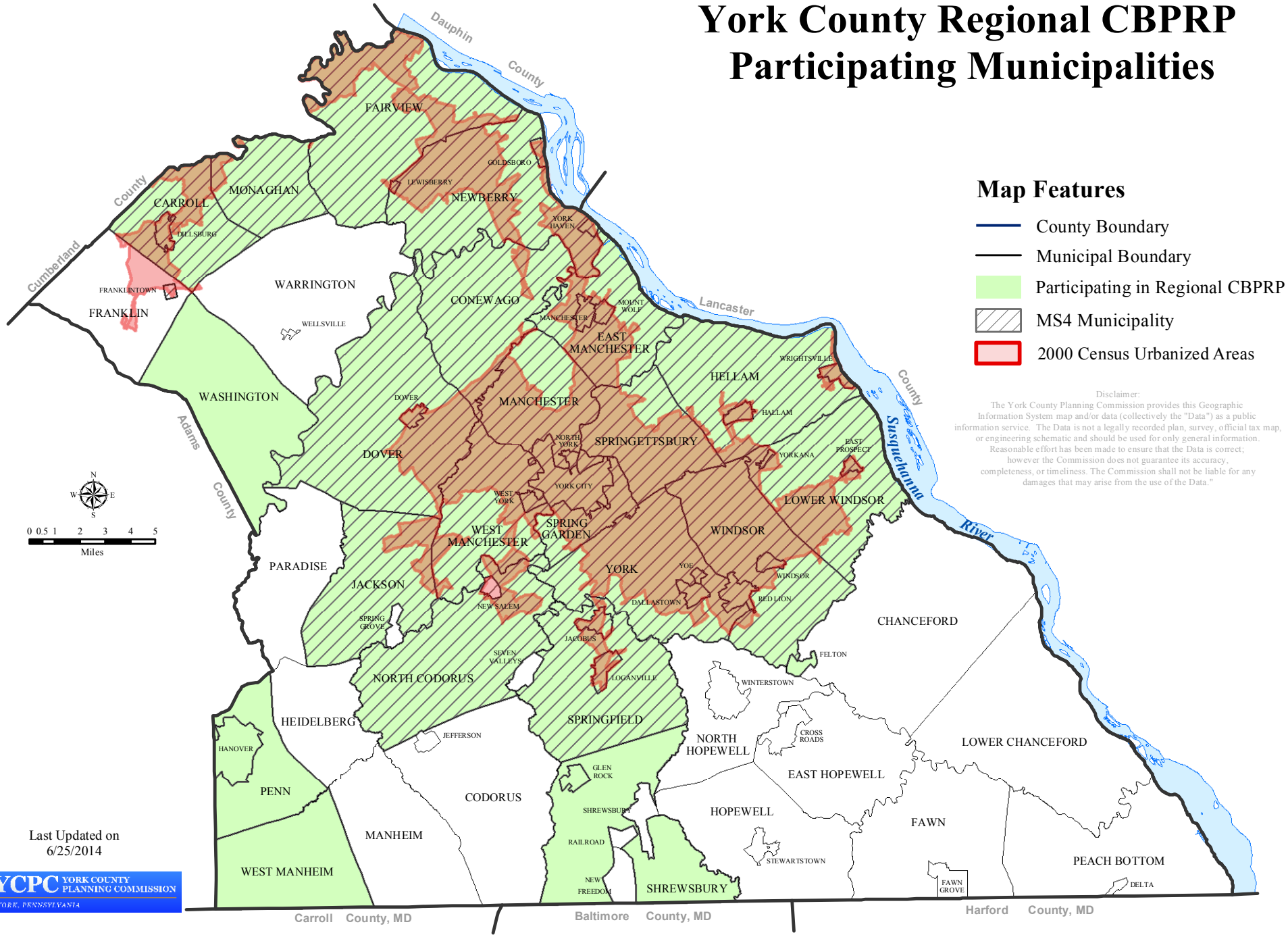
York County, located in south central Pennsylvania, is bordered to the east by the Susquehanna River and Maryland to the south. It covers a total of 911 square miles (583,040 acres), all of which drain to the Chesapeake Bay. This Regional Chesapeake Bay Pollution Reduction Plan (CBPRP) includes the County of York and 45 of the County's 72 municipalities, hereinafter referred to as the participants. Among the participants are 34 regulated MS4 municipalities, including the County of York, and 12 non-regulated municipalities, totaling 372,335 acres (see Map 1).

Of the total acreage, 93,567 acres lie within the Urbanized Area (UA) of the participating regulated MS4 municipalities, based on the US Census 2000 Urbanized Area GIS data layer. The total impervious cover within the UA totals 16,114 acres or 17.2%, based on the Chesapeake Bay Program's 2000 impervious cover GIS data layer. The remaining 82.8% of the UA is comprised of 77,453 acres of pervious cover.

According to York County Tax Assessment Data, farming utilizes the most municipal acreage (55%) in the entire Region covered by the Plan, while residential uses, including apartments, account for the most acreage (43%) within the UA. Next, in terms of land use in the UA is farming (33%), followed by commercial/industrial uses (15%).

Table 1 displays the UA drainage area, impervious cover, pervious cover, existing land uses, and impaired stream information for the participants. Please be advised that the UA acreages noted above, as well as on Table 1, reflect an adjustment that was made for Fairview Township. The Township's UA was modified to delete the portion that is located within the "permitted" boundaries of the Federal Defense Logistics Agency (DLA). The DLA has its own MS4 Permit and Industrial Stormwater Permit. The eight (8) stormwater outlets on this land drain directly to the Susquehanna River and are monitored and reported on by the DLA.

MAP 1
York County Regional CBPRP Participating Municipalities



Map Features

- County Boundary
- Municipal Boundary
- Participating in Regional CBPRP
- MS4 Municipality
- 2000 Census Urbanized Areas

Disclaimer:
The York County Planning Commission provides this Geographic Information System map and/or data (collectively the "Data") as a public information service. The Data is not a legally recorded plan, survey, official tax map, or engineering schematic and should be used for only general information. Reasonable effort has been made to ensure that the Data is correct; however the Commission does not guarantee its accuracy, completeness, or timeliness. The Commission shall not be liable for any damages that may arise from the use of the Data."

Last Updated on 6/25/2014

YCPC YORK COUNTY PLANNING COMMISSION
YORK, PENNSYLVANIA

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TABLE 1: YORK COUNTY REGIONAL CBPRP - Section B.1. Narrative Description of the Drainage Area

		2000 Census UA Calculations					2000 UA Land Use (Acres)[2]									2000 Census UA Calculations		
Municipality Participating in Regional CBPRP	MS4 Permit	UA (Acres)	Impervious Cover (Acres)1	% Impervious Cover1	Pervious Cover (Acres)1	% Pervious Cover1	Apt	Comm	Exempt	Farm	Ind	Resid	Utility	Not Defined	Total Land Use (Acres)	Stream Length (Miles)	Impaired Stream (Miles)	% Impaired Streams
Carroll Twp	Yes	3071.88	170.86	5.56%	2901.02	94.44%	14.07	207.86	141.75	1393.79	8.21	1076.26	0.00	2.36	2844.30	11.97	3.61	30.17%
Conewago Twp	Yes	1382.34	168.95	12.22%	1213.39	87.78%	15.18	116.81	26.35	596.64	51.13	460.09	0.00	3.44	1269.64	9.99	1.29	12.92%
Dallastown Boro	Yes	503.70	227.49	45.16%	276.21	54.84%	28.33	33.21	26.20	45.25	26.70	258.38	0.00	1.28	419.34	0.40	0.00	0.00%
Dillsburg Boro	Yes	478.56	154.67	32.32%	323.90	67.68%	8.51	57.76	36.64	38.66	15.35	238.27	0.00	5.22	400.41	0.42	0.00	0.00%
Dover Boro	Yes	331.73	103.85	31.31%	227.88	68.69%	13.12	17.14	73.30	0.89	1.54	175.11	0.00	1.60	282.70	1.22	0.00	0.00%
Dover Twp	Yes	5040.30	636.52	12.63%	4403.78	87.37%	53.63	512.27	196.35	1526.63	10.80	2238.19	0.00	12.26	4550.12	17.17	7.61	44.29%
East Manchester Twp	Yes	4140.54	335.26	8.10%	3805.28	91.90%	28.37	109.85	261.78	2309.48	265.23	910.50	0.00	11.07	3896.29	10.31	3.21	31.08%
East Prospect Boro	Waiver	201.16	38.08	18.93%	163.08	81.07%	0.77	3.34	11.85	35.52	6.13	110.34	0.22	8.95	177.12	0.00	0.00	0.00%
Fairview Twp[3]	Yes	6244.51	904.90	14.49%	5339.61	85.51%	13.23	363.25	655.73	2164.50	67.96	2396.04	3.89	147.18	5811.78	24.89	5.49	22.06%
Felton Boro	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Glen Rock Boro	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Goldsboro Boro	Waiver	164.16	35.82	21.82%	128.35	78.18%	0.96	1.88	4.72	41.41	0.01	88.29	0.00	0.00	137.27	0.10	0.00	0.00%
Hallam Boro	Yes	404.26	93.18	23.05%	311.08	76.95%	35.57	28.10	46.41	21.95	21.32	202.88	0.00	0.77	357.01	2.07	0.00	0.00%
Hanover Boro	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Hellam Twp	Yes	1143.24	112.22	9.82%	1031.02	90.18%	8.88	41.19	40.17	444.63	14.73	453.72	0.00	35.30	1038.63	3.40	0.00	0.00%
Jackson Twp	Yes	1662.27	198.21	11.92%	1464.06	88.08%	1.33	354.52	32.30	461.96	305.80	368.51	10.30	1.31	1536.03	1.17	1.17	100.00%
Jacobus Boro	Waiver	380.33	66.76	17.55%	313.57	82.45%	0.00	11.92	28.60	23.67	17.84	243.01	0.00	1.30	326.35	0.95	0.00	0.00%
Lewisberry Boro	Waiver	87.58	20.76	23.70%	66.83	76.30%	0.37	2.34	4.59	0.25	0.34	59.84	0.00	0.00	67.73	0.19	0.19	100.00%
Loganville Boro	Yes	471.77	41.84	8.87%	429.93	91.13%	0.18	17.34	35.16	129.08	6.33	237.36	0.00	2.98	428.44	0.35	0.00	0.00%
Lower Windsor Twp	Yes	3926.64	95.74	2.44%	3830.90	97.56%	8.63	116.63	24.26	2539.19	133.41	945.29	4.80	4.24	3776.46	14.64	0.21	1.46%
Manchester Boro	Yes	493.96	149.85	30.34%	344.11	69.66%	17.75	30.70	136.56	30.45	4.94	202.27	0.23	1.00	423.90	0.84	0.29	34.28%
Manchester Twp	Yes	6793.89	1192.19	17.55%	5601.70	82.45%	32.13	618.06	478.25	1404.61	495.46	2935.25	39.89	112.58	6116.25	24.54	13.58	55.35%
Monaghan Twp	Yes	540.09	18.87	3.49%	521.22	96.51%	0.00	0.00	57.60	189.49	0.00	247.44	0.00	0.00	494.53	2.63	0.52	19.71%
Mount Wolf Boro	Yes	325.66	101.53	31.18%	224.13	68.82%	2.83	9.57	21.52	104.48	9.87	127.15	0.00	0.00	275.41	1.64	0.00	0.00%
Newberry Twp	Yes	9211.30	625.85	6.79%	8585.45	93.21%	27.08	717.41	216.81	4000.92	73.98	3518.61	2.55	21.04	8578.39	29.52	3.69	12.51%
North Codorus Twp	Yes	1521.59	72.03	4.73%	1449.56	95.27%	7.41	69.37	223.84	608.37	0.99	515.68	0.00	26.33	1452.00	3.43	2.27	66.11%

		2000 Census UA Calculations					2000 UA Land Use (Acres)[2]									2000 Census UA Calculations		
Municipality Participating in Regional CBPRP	MS4 Permit	UA (Acres)	Impervious Cover (Acres)[1]	% Impervious Cover[1]	Pervious Cover (Acres)[1]	% Pervious Cover[1]	Apt	Comm	Exempt	Farm	Ind	Resid	Utility	Not Defined	Total Land Use (Acres)	Stream Length (Miles)	Impaired Stream (Miles)	% Impaired Streams
North York Boro	Yes	202.55	123.98	61.21%	78.57	38.79%	11.50	23.49	35.80	0.00	15.85	51.02	0.00	15.81	153.47	0.90	0.90	100.00%
Penn Twp	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Red Lion Boro	Yes	838.65	379.46	45.25%	459.19	54.75%	23.62	42.67	134.75	5.90	118.95	367.01	0.00	0.75	693.64	0.28	0.12	44.14%
Shrewsbury Twp	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Spring Garden Twp	Yes	3190.79	1155.96	36.23%	2034.83	63.77%	2.90	310.77	471.34	133.53	306.08	1512.37	0.00	52.50	2789.50	10.39	9.57	92.15%
Springettsbury Twp	Yes	8472.84	2348.46	27.72%	6124.38	72.28%	137.99	1042.27	1061.54	797.11	893.73	3454.51	3.71	125.46	7516.30	24.78	21.27	85.83%
Springfield Twp	Yes	495.92	26.19	5.28%	469.72	94.72%	13.56	3.85	50.46	173.15	0.00	215.00	0.00	0.72	456.74	1.40	0.07	5.18%
Washington Twp	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
West Manchester Twp	Yes	6358.46	1814.81	28.54%	4543.66	71.46%	153.29	1014.75	441.11	695.32	948.04	2451.69	3.83	10.27	5718.31	15.96	14.41	90.25%
West Manheim Twp	No	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
West York Boro	Yes	335.85	254.82	75.87%	81.03	24.13%	22.50	31.41	26.94	0.00	38.47	149.43	0.00	0.70	269.45	0.00	0.00	0.00%
Windsor Boro	Yes	339.21	49.74	14.66%	289.48	85.34%	3.63	3.68	11.26	127.94	5.57	153.53	0.00	0.06	305.66	1.16	1.16	100.00%
Windsor Twp	Yes	10084.46	459.04	4.55%	9625.42	95.45%	61.89	273.22	443.77	4905.70	300.53	3487.01	6.33	9.52	9487.97	21.74	2.55	11.72%
Wrightsville Boro	Yes	394.69	155.47	39.39%	239.22	60.61%	2.26	19.80	60.42	31.45	33.75	156.46	0.00	23.57	327.71	0.40	0.00	0.00%
Yoe Boro	Yes	139.96	40.64	29.04%	99.32	70.96%	8.17	7.33	12.87	3.61	2.65	78.12	0.00	1.42	114.16	0.52	0.00	0.00%
York City	Yes	3410.89	2249.13	65.94%	1161.76	34.06%	54.47	390.00	674.15	1.36	465.47	959.26	1.17	107.36	2653.22	7.24	7.24	100.00%
York County[4]	Yes	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
York Haven Boro	Yes	172.76	38.03	22.01%	134.74	77.99%	8.19	17.26	9.51	43.20	1.85	66.38	0.00	0.11	146.51	1.00	0.00	0.00%
York Twp	Yes	10846.26	1441.90	13.29%	9404.36	86.71%	204.45	1524.52	518.46	2713.66	144.68	4714.42	0.07	56.01	9876.27	27.87	7.63	27.37%
Yorkana Boro	Yes	108.84	10.69	9.82%	98.15	90.18%	0.57	1.24	4.69	22.98	0.00	70.53	0.00	0.00	100.01	0.36	0.00	0.00%

[1] Calculations were made using the Chesapeake Bay 2000 Impervious Cover GIS data layer.

[2] Calculations were made using the York County, PA, GIS land use layer, based on County Tax Assessment data. Note that the layer doesn't include roads.

[3] Calculations for Fairview Township exclude the portion of the UA within the Federal Defense Logistics Agency property.

[4] Calculations for York County are listed as 0.00 values because the County's UA is accounted for in the UA of other municipalities with an MS4 Permit.

Section B.2. Identify areas where municipal infrastructure upgrades are planned and include an evaluation of the suitability of green infrastructure, low impact development (LID) or Environmental Site Design (ESD) BMPs.

Eight (8) participating municipalities identified planned municipal infrastructure upgrades and evaluated the projects for the potential to incorporate green infrastructure (GI), environmental sight design (ESD), and/or low impact development (LID) best management practices (BMPs). This included two (2) infrastructure upgrade projects in one (1) municipality and one (1) project in each of the other seven (7) municipalities. The projects range from stream restoration and road improvements to curb and sidewalk improvements.

Table 2 on the following page provides a summary of the nine (9) infrastructure upgrades planned by the participating municipalities. The Table also includes a summary of the site evaluation process and any actions being taken.

For many projects, integrating GI/ESD/LID was not feasible at this time due to the stage of project completion (e.g. permits and construction contracts in place) and level of activity (e.g. repaving, maintenance activities). All of the participating municipalities have agreed to continue to evaluate public infrastructure upgrades as they occur for the potential to incorporate GI/ESD/LID practices. These evaluations will be documented and reported upon as addendums to the CBPRP Annual Report by each participating municipality.

Table 2: Summary of Planned Municipal Infrastructure Upgrades (April 2014)

Name of Municipality	Infrastructure Upgrade Project	Estimated Date of Upgrade	GI/ESD/LID Considerations			Estimated Impervious Area	Actions
			Non-Structural BMPs	Structural BMP	Considerations		
Hellam Township	Streambank Restoration (80 ft. south side of Dark Hollow Rd.& unnamed trib. to Susquehanna River.)	Spring 2014	Protect sensitive/special features, protect/enhance riparian area, minimize disturbance, protect/utilize natural flow paths	Stream restoration	Cost (~$15,000), estimated nutrient load reduction benefits		Project pending GP-11 permit
	Enhance existing swale along roadway and replace road drainage (between Ore Bank & Spring Road)	January 2014-July 2014	None	Enhance the existing swale	Cost, permitting, project timeline, adjacent landowners		Install 2 weirs
Fairview Township	Highway Restoration	Summer 2014	None	None	Cost, feasibility, timeline		None- Project involved repaving and sealing only, limited opportunities to integrate LID.
Manchester Borough	Replace 1,000 ft of stormwater pipe	Summer 2014	None	Vegetated swale, impervious removal, landscape restoration, infiltration trench	Cost ($400,000), adjacent landowners, project timeline (1 yr)		Replace pipe and direct stormwater to detention basin
Manchester Township	York County Solid Waste and Refuse Authority	Summer 2014	None	Cistern captures and reuses stormwater from 22 acres (90%)impervious reuses water in cooling towers	Cost		Cistern is being installed as part of site expansion
North York Borough	Curb and sidewalk replacement (7^{th} Ave., 8^{th} Ave., Queen St.)	Summer 2014	reduce street imperviousness	Impervious removal, vegetated curb extension	Cost, feasibility		None- Parking and limited space make LID impractical.
West Manchester Township	Replacement of pond spillway	Summer 2014	None	Wet pond, constructed wetland	Cost ($25,000), adjacent landowners		None- This is a maintenance activity. However, the Township is evaluating opportunities to integrate LID practices into pond maintenance activities.
Windsor Borough	Stream Restoration (Gable Ave. to Baseball Alley)	Summer 2014	Protect/enhance riparian area	Riparian buffer, impervious removal, stream restoration	Cost, feasibility, permitting		Planning for stream restoration in progress
York Haven Borough	Susquehanna St. and Fallsview St. improvements	Summer 2014 or 2015	None	Water quality filter/hydrodynamic device	Cost, feasibility		Borough is exploring using water quality inlets. However, cost will play a significant factor. Limited tax base.

Section B.3. Optional – Provide estimates of the current loads (lbs/year) of Nitrogen (N), Phosphorus (P) and Sediment being discharged annually to receiving waters in the Chesapeake Bay Watershed. Explain how the estimates were made.

The Chesapeake Assessment and Scenario Tool (CAST) was used to estimate current Nitrogen (N), Phosphorus (P) and Suspended Solids (Sediment) loads (latest version March 17, 2014). This version estimates pollutant loads using 2010 land use and accounting for BMPs installed as of 2010 (2010 BMP progress data as provided by PA DEP). As shown in Table 3, urban land uses in York County include non-regulated impervious developed, non-regulated pervious developed, regulated construction, regulated impervious developed, and regulated pervious developed.

TABLE 3: CAST ESTIMATE OF 2010 POLLUTANT LOADS FOR URBAN LAND IN YORK COUNTY[1]

Urban Land use	Total Nitrogen		Total Phosphorus		Total Suspended Solids	
	Edge of Stream	Delivered	Edge of Stream	Delivered	Edge of Stream	Delivered
Non-regulated impervious developed	297,005	162,859	11,480	6,078	15,429,564	8,003,518
Non-regulated pervious developed	732,108	401,073	11,051	5,945	8,342,105	4,362,327
Regulated construction	74,589	46,567	3,829	1,666	8,129,198	3,455,877
Regulated impervious developed	788,704	554,656	27,820	10,808	40,318,020	15,896,413
Regulated pervious developed	1,516,297	1,036,417	16,907	6,592	15,874,536	6,282,125
Total	**3,408,703**	**2,201,608**	**71,087**	**31,090**	**88,093,424**	**38,000,260**

[1] *CAST model run in March 2014; 2010 land use; Pennsylvania DEP 2010 reported BMP progress.*

The 2014 pollutant load for York County was calculated by gathering information on BMPs installed between 2007 and 2014 by participating municipalities as part of voluntary stormwater management projects. 2007 was established as the base year based on the CAST documentation. Redevelopment BMPs were also included in order to capture new BMPs treating existing impervious areas that are reflected in the Bay Model (i.e. new BMPs treating existing land uses). BMPs associated with new development, or development with a corresponding change in land use, were not included.

In order to estimate load reductions for each BMP, municipalities provided drainage area data and, where possible, estimates of the impervious cover in the drainage area. For projects that provided the drainage area impervious cover, it was assumed the remaining drainage area was pervious. If imperviousness estimates were not provided, then the drainage area was classified as urban acres in the CAST, which is defined as including the categories of regulated impervious and pervious urban in the CAST documentation. Table 4 on the following page provides a summary of the stormwater BMPs installed between 2007 and 2014, as reported by the participating municipalities.

TABLE 4: SUMMARY OF REPORTED BMPs INSTALLED 2007 - 2014					
BMP Type	Impervious Drainage Area (Acres)	Pervious Drainage Area (Acres)	Acres	Ln Ft	Urban Acres
Stream Restoration	0.00	0.00	0.00	6,730.00	0.00
Forest Buffer	0.00	0.00	4.10	0.00	0.00
Wet Pond/Wetland	44.45	58.16	0.00	0.00	0.00
Dry Detention Hydrodynamic	11.35	4.13	0.00	0.00	17.22
Extended Detention	45.59	39.65	0.00	0.00	4.72
Infiltration w/sand	64.40	211.43	0.00	0.00	14.66
Filtering	0.40	0.00	0.00	0.00	3.32
Bioretention	13.09	9.57	0.00	0.00	6.05
Vegetated Channel	3.06	15.95	0.00	0.00	0.00
Perm Pavement	2.02	1.13	0.00	0.00	0.36
Dry Well	0.30	0.45	0.00	0.00	0.00
Street Sweeping	NA	NA	NA	NA	2,015,280.00 lbs

NA = Not Applicable

The BMP information in Table 4 was imported into the CAST and run as a scenario with no additional BMPs to calculate a total edge of stream load reduction from voluntary and redevelopment BMPs. Table 5 shows the resulting Nitrogen (N), Phosphorus (P) and Suspended Solids (Sediment) load reductions. These reductions were then compared to the existing pollutant loads for York County based on 2010 land use and BMPs installed as of 2010 (Table 3) to calculate the percent pollutant load reduction achieved through the 2007-2014 projects as shown in Table 5 below.

TABLE 5: SUMMARY OF POLLUTANT LOAD REDUCTION FROM BMPs INSTALLED 2007-2014			
	Total Nitrogen Edge of Stream (lbs)	Total Phosphorus Edge of Stream (lbs)	Total Suspended Solids Edge of Stream (lbs)
Pollutant load reduced (lbs)	7,807.1	608.9	2,635,808.0
Percent reduction	0.04%	0.13%	0.45%

Since some double counting of BMPs could occur between Table 3 (State's 2010 BMP Progress Scenario -BMPs installed as of 2010) and Table 4 (Municipal reported BMPs installed between 2007 and 2014) the load reductions from the 2007-2014 BMPs were not subtracted from the 2010 loads to prevent double counting. Nevertheless, it is noted that pollutant load reductions associated with the 2007-2014 projects, as reported in Table 5, are relatively small and do not significantly improve progress to the load reduction goals.

Section B.4. In the space provided, identify the control measures from Section II F of the NOI Instructions (3800-PM-BPNPSM0100c), or others, which will be implemented in the MS4 to reduce pollutant load to the Chesapeake Bay Watershed. Attach additional sheets if necessary. Identify a name or number of each BMP and indicate (1) the location(s) of the BMP (latitude/longitude, street name(s) or other locational information), (2) a timeline for implementation with interim milestones as appropriate, (3) how each BMP is expected to reduce N, P and /or Sediment in the receiving waters, (4) the rationale for selecting the BMP, and (5) a description of the planned inspection, operation and maintenance for the BMP. Optionally, for each BMP you may provide an estimate of the reduction (in lbs/year or %) of N, P and Sediment that are expected and how the estimate(s) were derived.

Introduction: The TMDL control measures that will be implemented to reduce pollutant loads to the Chesapeake Bay from the MS4 urbanized area covered by this Plan are shown on Map 2 and listed in Table 6. The 72 control measures, all of which are located in an impaired watershed, include a mix of stream bank restoration, riparian forest buffer, bioretention, bioswale, stormwater basin retrofit, step pool stormwater conveyance and porous pavement BMP projects. These control measures were among the pollutant reducing BMPs identified in the York County Watershed Implementation Plan (WIP) as being most appropriately suited for York County. More specifically, this list of BMPs identifies actions that will assist the County in achieving its Draft Pollutant Reduction Targets established in the State WIP.

With regard to an Implementation Schedule, Table 6 identifies the time frame to implement each of the BMP projects in terms of being a short, mid- or long term project. It is expected that Short term projects will take up to two (2) years to implement, mid- term projects will take two (2) to four (4) years, and long term projects will take more than four (4) years. Annual Action Plans will be prepared, which will essentially identify the starting point for implementation of the various projects.

Table 7 presents the Action Plan for 2014-2015. It identifies nine (9) BMP projects from Table 6 that will be the focus of the Regional CBPRP implementation efforts during that time period.

Rationale for Selecting the BMPs: Participating municipalities submitted stormwater BMP projects in their jurisdictions that could be implemented to reduce pollutant loads to the Chesapeake Bay. These projects were then evaluated with regard to the following criteria:

- Nitrogen, Phosphorus, and Sediment reductions,
- Planning level Nitrogen and total pollutant efficiency (cost/lb of reduction),
- Ownership (public vs private land),
- Status of project design,
- Funding availability,
- Community benefit (site accessibility, visibility to the public, and ability of public to experience the benefits),
- Connectivity (a project that is beneficial to a completed or proposed stormwater BMP project, projects located in the same impaired watershed), and
- Time frame to implement.

YCPC YORK COUNTY PLANNING COMMISSION
YORK, PENNSYLVANIA

MAP 2
York County Regional CBPRP
BMP Project Locations

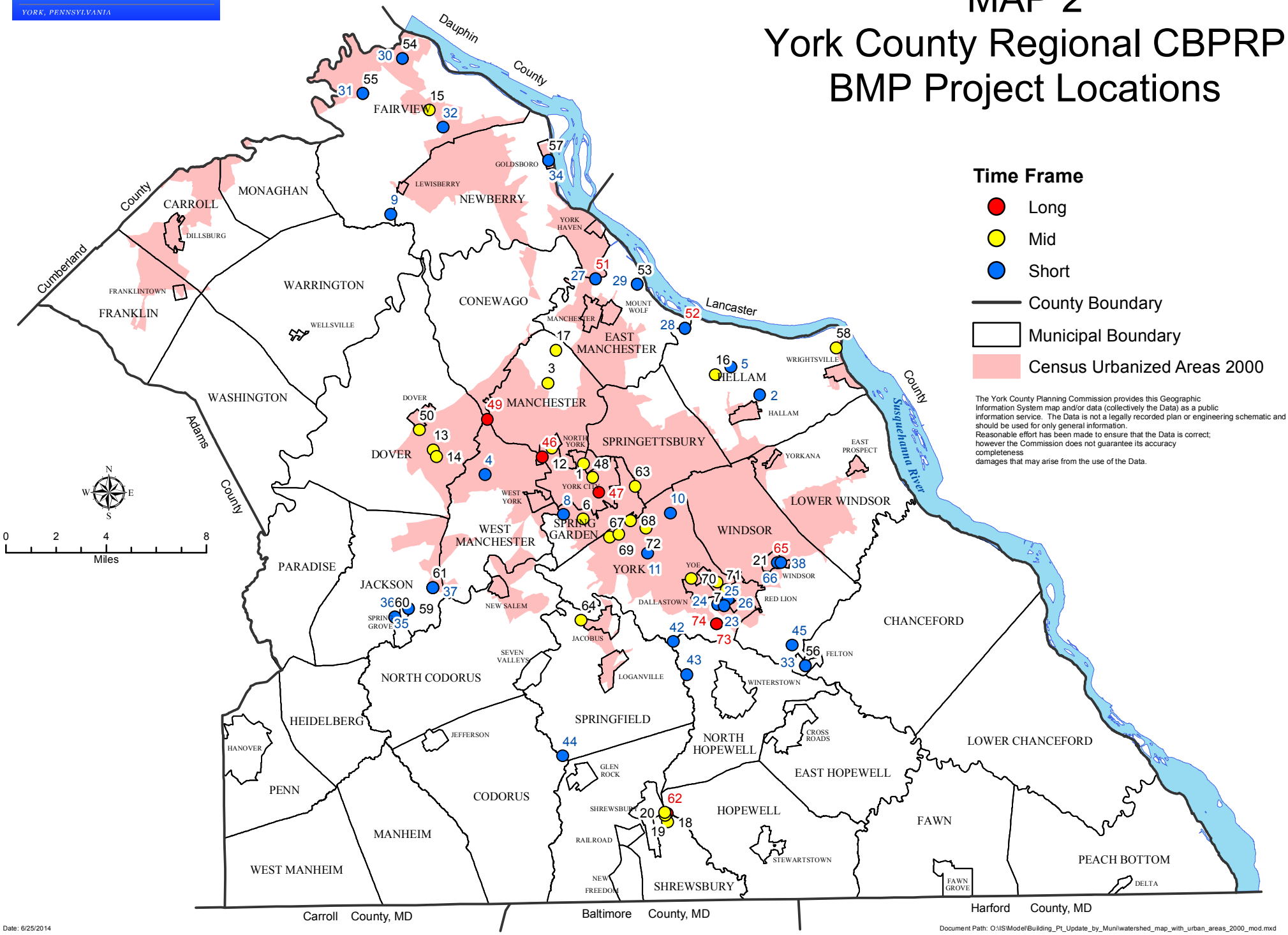

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Table 6: York County Regional CBPRP - BMP Projects List

(projects are listed in order of efficiency; many projects have the same efficiency)

Time Line	Proj ID	Jurisdiction/Party	Project Name	Project Type	Latitude	Longitude	Measure	Unit	TN (lbs)	TP (lbs)	TSS (lbs)	Total Pollutant	*MUNI* / CWP Cost	$/lb. Total Pollutant
Short	44	Codorus/Springfield (ARRC)	Cwiklinski Phase II and Glen Rock Upstream Extension	Stream Restoration	39.805452	-76.745026	1,800	feet	360	122	3,500,790	3,501,272	***$219,480***	$0.06
Short	42	York Township/ North Hopewell (ARRC)	Barshinger Run-Innerest	Stream Restoration	39.870833	-76.661111	2,000	feet	400	136	3,000,000	3,000,536	***$296,000***	$0.10
Short	43	North Hopewell (ARRC)	Zeigler Horse Farm	Stream Restoration	39.851667	-76.651111	2,100	feet	420	143	3,500,000	3,500,563	***$441,846***	$0.13
Short	45	Chanceford/Windsor Township (ARRC)	Pine Run	Stream Restoration	39.867778	-76.571667	1,350	feet	270	92	860,000	860,000	***$348,088***	$0.40
Mid	63	Spring Garden Township	Mill Creek near Mt. Rose Ave	Stream Restoration	39.960966	-76.688120	2,450	feet	490	167	132,913	133,569	$78,396	$0.59
Long	73	York Township	Barshinger Watershed Ren.	Stream Restoration-GP1 & 3	39.880789	-76.628200	63,000	feet	12,600	4,284	3,417,750	3,434,634	***$3,150,000***	$0.92
Mid	61	Jackson Township	BMP #3	Stream Restoration	39.903666	-76.841213	3,500	feet	700	238	189,875	190,813	$182,924	$0.96
Mid	59	Jackson Township	BMP #1	Stream Restoration	39.891780	-76.859460	2,000	feet	400	136	108,500	109,036	$104,528	$0.96
Long	65	Windsor Borough	Fishing Creek Study	Stream Rest./ Park Improv.	39.915646	-76.579213	6,700	feet	1,340	456	363,475	365,271	$350,169	$0.96
Short	66	Windsor Borough	Fishing Creek Study-Subset of Proj ID 65	Stream Restoration	39.915699	-76.582016	500	feet	100	34	27,125	27,259	$26,132	$0.96
Mid	67	York Township	Tyler Run Impoundment	Stream Restoration	39.931928	-76.708007	1,795	feet	359	122	97,379	97,860	$93,814	$0.96
Mid	68	York Township	Queenswood Improvements	Stream Restoration	39.941253	-76.691979	4,858	feet	972	330	263,547	264,848	***$253,899***	$0.96
Mid	69	York Township	Snyder Park	Stream Restoration	39.933387	-76.700970	1,056	feet	211	72	57,288	57,571	$55,191	$0.96
Mid	70	York Township	North Walnut Street	Stream Restoration	39.907280	-76.646950	3,854	feet	771	262	209,101	210,134	$201,446	$0.96
Mid	71	York Township	Mill Creek @ Red Lion	Stream Restoration	39.900500	-76.620680	1,531	feet	306	104	83,067	83,477	$80,026	$0.96
Mid	72	York Township	Orrens Park	Stream Restoration	39.936736	-76.680460	5,016	feet	1,003	341	272,118	273,462	$262,156	$0.96
Long	46	City of York	UNT Willis Run	Stream Restoration	39.978700	-76.757900	2,860	feet	572	194	155,155	155,921	$149,475	$0.96
Long	47	City of York	Poor House Run	Stream Restoration	39.957600	-76.715500	4,320	feet	864	294	234,360	235,518	$225,780	$0.96
Mid	48	City of York	Willis Run- Memorial Park	Stream Restoration	39.974400	-76.726800	7,800	feet	1,560	530	423,150	425,240	$407,659	$0.96
Long	49	Conewago Township	Little Conewago Creek	Stream Restoration	40.000833	-76.798889	67,100	feet	13,420	4,563	3,640,175	3,658,158	$3,506,914	$0.96
Mid	50	Dover Township	Dover Township Community Center and Lehr Park	Stream Restoration	39.995004	-76.850071	1,250	feet	250	85	67,813	68,148	$65,330	$0.96
Long	51	E. Manchester Township	55-95 Creek Bottom Road	Stream Restoration	40.081389	-76.716111	685	feet	137	47	37,161	37,345	$35,801	$0.96
Long	52	E. Manchester Township	Riverview Road	Stream Restoration	40.052222	-76.649167	1,750	feet	350	119	94,938	95,407	$91,462	$0.96
Mid	53	E. Manchester Township	Gut Road	Stream Restoration	40.078056	-76.684722	10,500	feet	2,100	714	569,625	572,439	$548,772	$0.96
Mid	54	Fairview Township	North WW Treatment Plant	Stream Restoration	40.210000	-76.860000	1,300	feet	260	88	70,525	70,873	$67,943	$0.96
Mid	55	Fairview Township	Roof Park	Stream Restoration	40.190000	-76.890000	650	feet	130	44	35,263	35,437	$33,972	$0.96
Mid	57	Goldsboro Borough	138 South York Street	Stream Restoration	40.150278	-76.750556	1,700	feet	340	116	92,225	92,681	$88,849	$0.96
Mid	56	Felton Borough	Pine Run-Felton Bor	Stream Restoration	39.855885	-76.561977	1,990	feet	398	135	107,958	108,491	$104,005	$0.96
Long	62	Shrewsbury Township	Deer Creek Initiative	Stream Restoration	39.771520	-76.667039	950	feet	190	65	51,538	51,792	$49,651	$0.96
Mid	60	Jackson Township	BMP #2	Stream Restoration	39.887000	-76.870000	1,000	feet	200	68	54,250	54,518	$52,264	$0.96
Short	4	W. Manchester Township	Sunset Park	Bioretention	39.968734	-76.801098	20	acres treated	232	3	3,222	3,457	***$5,000***	$1.45
Mid	64	Springfield Township	Nixon County Park	Stream Restoration	39.883911	-76.729974	1,500	feet	300	102	81,375	81,777	***$200,000***	$2.45
Long	74	York Township	Barshinger Watershed Ren.	Stream Restoration-P1	39.880789	-76.628200	8,750	feet	1,750	595	474,688	477,033	***$1,312,500***	$2.75
Mid	58	Hellam Township	Dark Hollow Rd	Stream Restoration	40.039719	-76.535556	80	feet	16	5	4,340	4,361	***$15,000***	$3.44
Long	75	York Township	Barshinger Watershed Ren.	Stream Restoration-P1	39.880789	-76.628200	8,750	feet	1,750	595	474,688	477,033	***$2,187,500***	$4.59
Short	27	E. Manchester Township	55-95 Creek Bottom Road	Riparian Forest Buffer	40.081389	-76.716111	0.3	acres	4	0	38	42	$372	$8.85
Short	28	E. Manchester Township	Riverview Road	Riparian Forest Buffer	40.052222	-76.649167	0.03	acres	0	0	4	4	$36	$8.85
Short	29	E. Manchester Township	Gut Road	Riparian Forest Buffer	40.078056	-76.684722	0.9	acres	13	0	112	125	$1,104	$8.85

Table 6: York County Regional CBPRP - BMP Projects List

(projects are listed in order of efficiency; many projects have the same efficiency)

Time Line	Proj ID	Jurisdiction/Party	Project Name	Project Type	Latitude	Longitude	Measure	Unit	TN (lbs)	TP (lbs)	TSS (lbs)	Total Pollutant	*MUNI* / CWP Cost	$/lb. Total Pollutant
Short	30	Fairview Township	North WW Treatment Plant	Riparian Forest Buffer	40.210000	-76.860000	1.0	acres	14	0	126	141	$1,248	$8.85
Short	31	Fairview Township	Roof Park	Riparian Forest Buffer	40.190000	-76.890000	3	acres	41	0	361	403	$3,564	$8.85
Short	32	Fairview Township	South WW Treatment Plant	Riparian Forest Buffer	40.170000	-76.830000	0.5	acres	7	0	61	68	$600	$8.85
Short	33	Felton Borough	Pine Run-Felton Bor	Riparian Forest Buffer	39.855885	-76.561977	0.9	acres	13	0	109	122	$1,080	$8.85
Short	34	Goldsboro Borough	138 South York Street	Riparian Forest Buffer	40.150278	-76.750556	0.3	acres	5	0	40	45	$396	$8.85
Short	35	Jackson Township	BMP #1	Riparian Forest Buffer	39.891780	-76.859460	46	acres	639	8	5,594	6,241	$55,200	$8.85
Short	36	Jackson Township	BMP #2	Riparian Forest Buffer	39.887000	-76.870000	3	acres	48	1	420	468	$4,140	$8.85
Short	37	Jackson Township	BMP #3	Riparian Forest Buffer	39.903666	-76.841213	8	acres	111	1	973	1,085	$9,600	$8.85
Short	38	Windsor Borough	Fishing Creek Study	Riparian Forest Buffer	39.915646	-76.579213	0.1	acres	1	0	7	8	$72	$8.85
Short	24	York Township	Barshinger Watershed Ren.	Pond Retrofit- Biscayne Woods	39.892117	-76.627296	32	acres treated	95	3	3,437	3,535	***$50,000***	$14.15
Short	25	York Township	Barshinger Watershed Ren.	Pond Retrofit-Biscayne Woods	39.891315	-76.622353	21	acres treated	62	2	2,234	2,297	$35,041	$15.25
Short	26	York Township	Barshinger Watershed Ren.	Pond Retrofit-Dairyland East	39.894976	-76.619447	25	acres treated	75	2	2,704	2,781	$42,419	$15.25
Mid	12	City of York	York City Industrial Park	Pond Retrofit	39.983600	-76.750500	54	acres treated	161	4	5,799	5,965	$90,971	$15.25
Mid	13	Dover Township	Wyngate Basin	Pond Retrofit	39.983333	-76.839722	58	acres treated	174	5	6,278	6,457	$98,485	$15.25
Mid	14	Dover Township	Dover T. Comm Center	Pond Retrofit	39.979444	-76.837500	88	acres treated	262	7	9,433	9,701	$147,963	$15.25
Mid	15	Fairview Township	Emily Lane Stormwater Pond	Pond Retrofit	40.180000	-76.840000	8	acres treated	24	1	859	884	$13,477	$15.25
Mid	16	Hellam Township	102 Chelsea Way	Pond Retrofit	40.025035	-76.626763	21	acres treated	63	2	2,288	2,353	$35,883	$15.25
Mid	17	Manchester Township	I-83 Basin	Pond Retrofit	40.040252	-76.746611	128	acres treated	381	10	13,747	14,138	$215,635	$15.25
Mid	18	Shrewsbury Township	Deer Creek Init-Grace Church	Pond Retrofit #1	39.766448	-76.667039	19	acres treated	56	1	2,008	2,066	$31,503	$15.25
Mid	19	Shrewsbury Township	Deer Creek Init-Grace Church	Pond Retrofit #2	39.770254	-76.668628	11	acres treated	33	1	1,181	1,215	$18,531	$15.25
Mid	20	Shrewsbury Township	Deer Creek Init- Giant Food	Pond Retrofit #3	39.772058	-76.668946	20	acres treated	59	2	2,116	2,176	$33,188	$15.25
Mid	21	Windsor Borough	Fishing Creek Study	Pond Retrofit	39.915556	-76.581667	1	pond	3	0	107	110	$1,685	$15.25
Short	23	York Township	Barshinger Watershed Ren.	Pond Retrofit- Biscayne Woods	39.891292	-76.622383	8	acres treated	25	1	891	917	$13,983	$15.25
Short	5	Hellam Township	Ore Bank & Spring Rd	Bioswale	40.029241	-76.615090	4	acres treated	56	1	687	744	$17,190	$23.12
Mid	6	Spring Garden Township	Virginia Ave	Step Pool Conveyance	39.942421	-76.727789	51	acres treated	709	9	8,764	9,481	$219,169	$23.12
Mid	1	City of York	Broad Street Greenway	Bioretention	39.966512	-76.719948	48	acres treated	556	7	7,733	8,296	$335,725	$40.47
Short	2	Hellam Township	Barshinger Fields	Bioretention	40.013022	-76.593407	1	acres treated	12	0	161	173	$6,994	$40.47
Mid	3	Manchester Township	Manchester T. Muni Complex	Bioretention	40.021230	-76.752979	3	acres treated	35	0	483	519	$20,983	$40.47
Long	22	York Township	Misc Ponds	Pond Retrofit					0	0	0	0	$0	
Mid	7	York Township	MD & PA CG trail extension	Bioswale	39.904854	-76.627427			0	0	0	0	$33,972	
Short	8	City of York	Rail Trail (Market-Kings Mill)	Porous Pavement	39.945070	-76.742459	0.3	acres	3	0	48	51	$18,066	$351.89
Short	9	Fairview Township	Pinetown Road-Bike/Ped area	Porous Pavement	40.120000	-76.870000			0	0	0	0	$88,849	
Short	10	York Township	Mill Creek Preserve-Parking Lot	Porous Pavement	39.945222	-76.661865			0	0	0	0	$4,181	
Short	11	York Township	York Township Park- Parking Lot/Trail	Porous Pavement	39.922073	-76.679483			0	0	0	0	$104,528	

Table 7: York County Regional CBPRP 2014-2015 Action Plan

Time Line	Proj ID	Jurisdiction/Party	Project Name	Project Type	Latitude	Longitude	Measure	Unit	Total Pollutant	*MUNI* / CWP Cost	$/lb. Total Pollutant
Long	73	York Township	Barshinger Watershed Ren.	Stream Restoration-GP1 & 3	39.880789	-76.628200	63,000	feet	3,434,634	***$3,150,000***	$0.92
Mid	59	Jackson Township	BMP #1	Stream Restoration	39.891780	-76.859460	2,000	feet	109,036	$104,528	$0.96
Mid	63	Spring Garden Township	Mill Creek near Mt. Rose Ave	Stream Restoration	39.960966	-76.688120	2,450	feet	133,569	$78,396	$0.59
Short	44	Codorus/ Springfield Townships (ARRC)	Cwiklinski Phase II and Glen Rock Upstream Extension	Stream Restoration	39.805452	-76.745026	1,800	feet	3,500,790	***$219,480***	$0.06
Short	5	Hellam Township	Ore Bank & Spring Rd	Bioswale	40.029241	-76.615090	4	acres treated	744	$17,190	$23.12
Short	66	Windsor Borough	Fishing Creek Study-Subset of Proj ID 65	Stream Restoration	39.915699	-76.582016	500	feet	27,259	$26,132	$0.96
Short	38	Windsor Borough	Fishing Creek Study	Riparian Forest Buffer	39.915646	-76.579213	0.1	acres	8	$72	$8.85
Short	4	West Manchester Township	Sunset Park	Bioretention	39.968734	-76.801098	20	acres treated	3,457	***$5,000***	$1.45
Short	35	Jackson Township	BMP #1	Riparian Forest Buffer	39.891780	-76.859460	46	acres	6,241	$55,200	$8.85

Rationale for Selecting the BMPs (continued): In keeping with the York County WIP, the underlying goal was to reduce the most pollutants for the least amount of money, with the ultimate goal being to have streams removed from PA DEPs impaired waters list. Other criteria aided in determining the time frame to implement the BMP projects. After reviewing the projects in order of efficiency and time frame to implement, the Regional CBPRP Steering Committee decided that all of the submitted projects were beneficial to cleaning up impaired waters in the County. As stated above, the Annual Action Plans will identify projects that will be the focus of implementation year to year. The criteria listed above will assist the Regional CBPRP participants in deciding which projects to include in each Annual Action Plan.

Justification for including BMP Projects located outside the MS4 Urbanized Area: Of the 72 BMP Projects included in this Plan, 22 are located outside the MS4 Urbanized Area (see Map 2). Ten (10) of the projects are stream restoration, five (5) are riparian forest buffers associated with a stream restoration project, four (4) are pond retrofits of which three (3) are associated with a stream restoration project, two (2) are bioretention, and one (1) is porous pavement.

Since impaired waters are not limited to urbanized areas, improvements to water quality are needed in both urban and rural areas. All of the projects located outside the urbanized area are located in an impaired watershed and are considered to be effective practices for improving water quality. The stream restoration projects, in particular, have a very high efficiency in terms of removing the most pollutants for the least amount of cost. Some of the stream restoration projects are connected to previously completed segments of stream restoration. Thus, they will result in further strides toward having a stream removed from the PA DEP Impaired Waters List.

Although the associated riparian forest buffer and pond retrofit projects will remove a lesser amount of pollutants, they are vital to protecting the restored steam banks. These projects, together with the bioretention and porous pavement projects, help to maintain natural hydrology in the watershed and provide good examples of green infrastructure that not only reduce pollutants, but also can be useful in educating the public about the benefits of green infrastructure.

Description of Planned Inspection, Operation and Maintenance for the BMPs: All stormwater BMP projects installed under this Regional CBPRP will be subject to the applicable municipal Stormwater Management (SWM) Ordinance that has been adopted in accordance with Act 167 and, if applicable, to grant agreement requirements. The SWM Ordinance requires that SWM BMPs be inspected, at a minimum, annually for the first five (5) years, once every three (3) years thereafter, and during or immediately after the cessation of a ten (10)-year or greater storm.

The operation and maintenance (O&M) provisions for each SW project must be included in a SWM BMP O&M Plan, which is subject to the approval of the applicable municipal governing body. Additionally, if the project is located on private land, the landowner must convey an easement to the municipality to assure access for periodic inspections by the municipality and maintenance, as necessary. Following approval of a SWM BMP O&M Plan for any project included on Table 6 of this CBPRP, a copy of the O&M Plan will be included in the next MS4 Annual Report submitted to PA DEP.

ENGINEER CERTIFICATION

I, being a Registered Professional Engineer in Pennsylvania, do hereby certify to the best of my knowledge and belief, that this Chesapeake Bay Pollutant Reduction Plan is designed to achieve pollutant reductions consistent with the goals in the Chesapeake Bay Watershed Implementation Plan.

	Professional Engineer Name:
	Signature:
	Date:
	License No.:
	License Expiration Date:
	Company:
	Telephone:

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision I accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

_____ _____

Name of Responsible Official Signature

_____ _____

Telephone No. Date

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APPENDIX A

GENERAL INFORMATION FORMS FOR OTHER PARTICIPATING MUNICIPALITIES