APPENDIX 1

Public Notice

Written Comments

Comment Response

Public Notice

Availability of Chesapeake Bay Pollution Reduction Plan (CBPRP) For Lower Allen Township

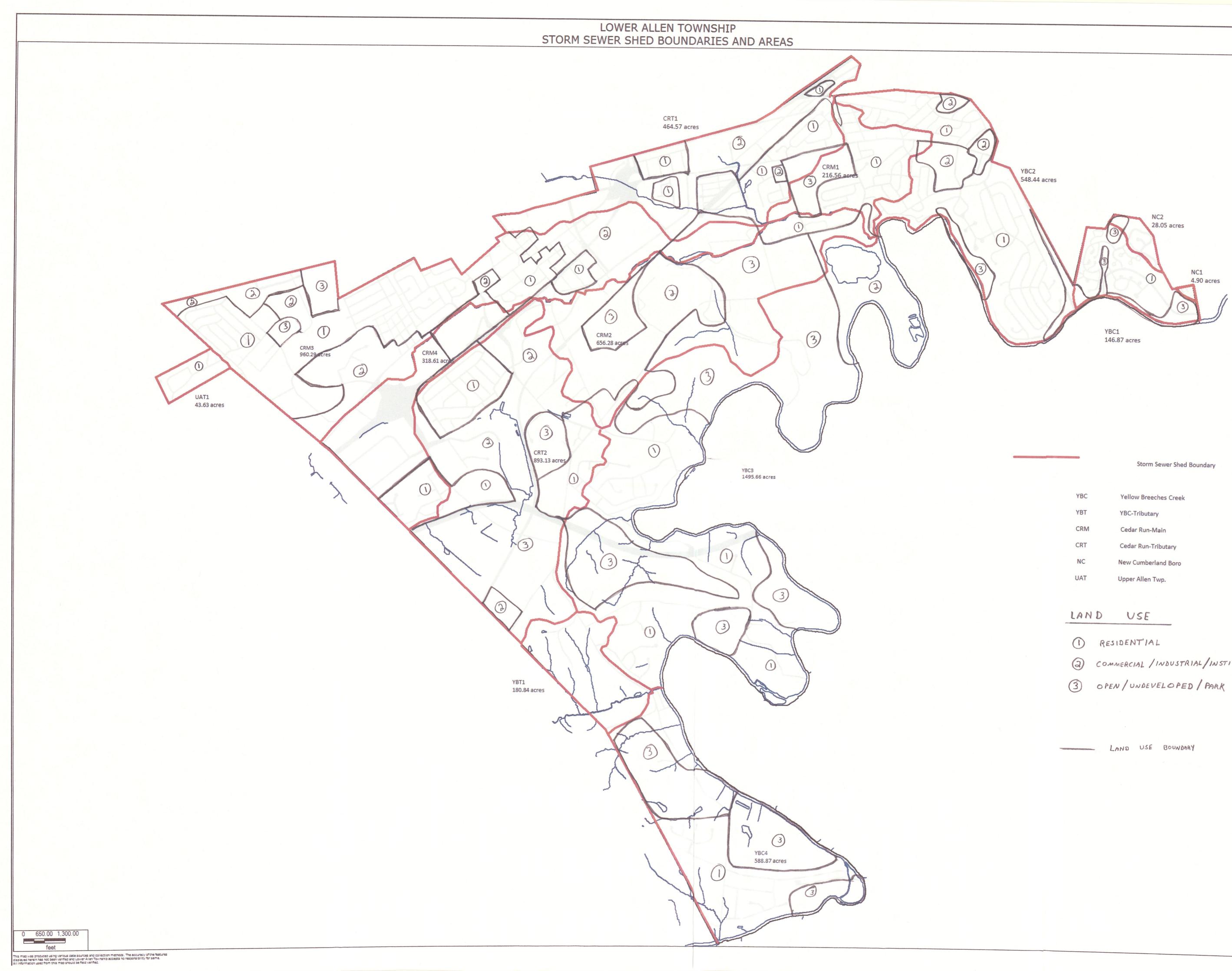
Lower Allen Township's CBPRP is available for public viewing at the Township Office, 2233 Gettysburg Road, Camp Hill, Pa., from 8:00 AM to 4:00 PM weekdays. Comments will be received at the regular public meeting of the Board of Commissioners on Monday, July 10, 2017, at 7:00 PM at the Township Office. Written comments will be received until July 31, 2017. The plan may also be viewed on the Township website: <u>www.latwp.org</u>.

Thomas G. Vernau, Jr. Township Manager

APPENDIX 2

Maps

- Storm Sewer Shed
- Existing Land Use



YBC	Yellow Breeches Creek
YBT	YBC-Tributary
CRM	Cedar Run-Main
CRT	Cedar Run-Tributary
NC	New Cumberland Boro
UAT	Upper Allen Twp.

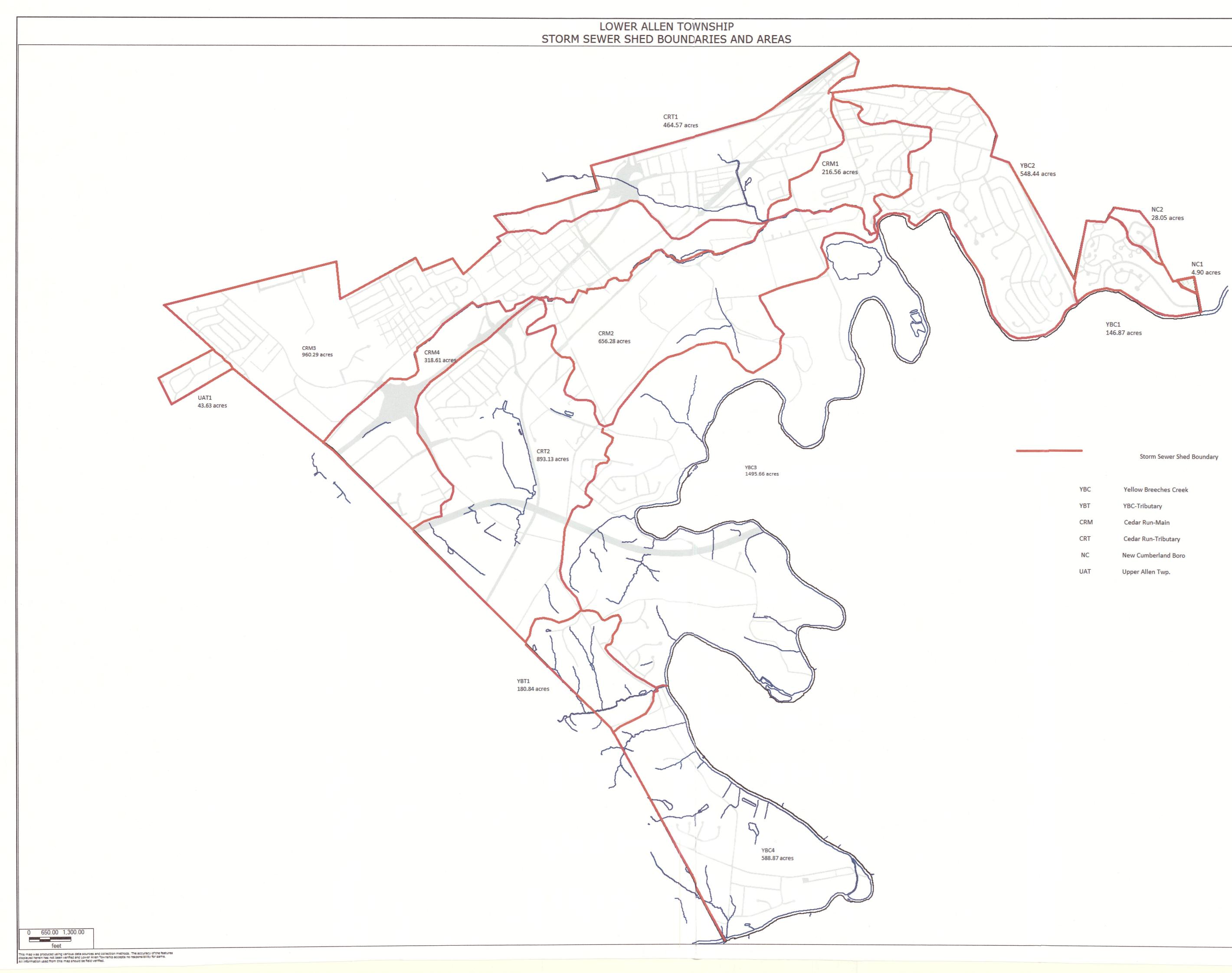
	RESIDENTIAL
2	COMMERCIAL / INDUSTRIAL / INSTITUTIONAL
6	- DEN LUNASVELOAFA LOOP

Legend Boundary -----Streams 📈 Rights of Way

Lower Allen Township 2233 Gettysburg Road Camp Hill, PA 17011 (717) 975-7575

N

-

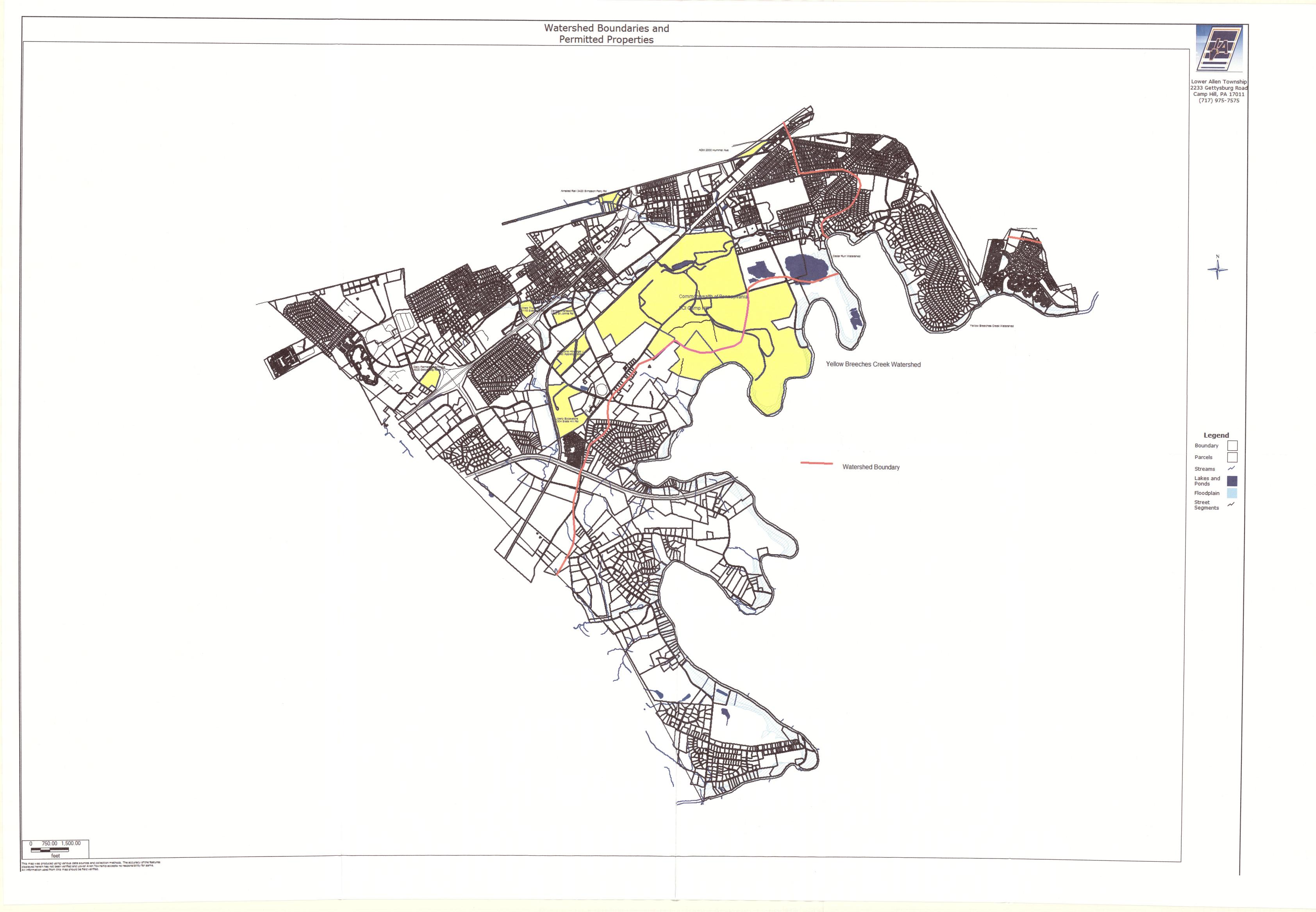


Lower Allen Township 2233 Gettysburg Road Camp Hill, PA 17011 (717) 975-7575

N

YBC	Yellow Breeches Creek
YBT	YBC-Tributary
CRM	Cedar Run-Main
CRT	Cedar Run-Tributary
NC	New Cumberland Boro
UAT	Upper Allen Twp.

Legend Boundary Streams 📈 Rights of Way



APPENDIX 4

BMPs for Load Reductions

- Computation Sheets

	Α	В
		Sediment Reduction
1	BMP Facility	lbs/year
2	Moreland Basin	13,852.06
3	Sheepford Crossing East Basin	21,508.51
4	Sheepford Crossing West Basin	15,447.70
5	Westport Business Center Basin	60,263.13
6	Rossmoyne Business Center Basin	106,431.14
7	BJs Wholesale Club Basin	10,079.04
8	LAT Public Works Facility Basin	11,007.59
9	Weis Market/UMHC Basin	29,462.00
10	Heights of Beacon Hill Phases 1 and 2 Basin	17,015.83
11	Bethany Village West Basin B	32,864.59
12	TOTAL	317,931.59

Name:	Moreland Basin			
Location:	Oxford	l Drive		
Storm Sewer Shed:	UAT1			
Soil Type:	В			
Drainage Area:	17.7 ac	pres		
Impervious Area:	32%: Area:	5.664 acres 5.664 acres x 20	065.10 lbs/acre/year =	11,696.73 lbs/year
Pervious Area:	68%: Area:	12.036 acres 12.036 acres x	306.95 lbs/acre/year =	
			Subtotal:	15,391.18 lbs/year
Proposed BMP:	New re	trofit of detentio	n basin for bioretention	
	90% ef	ficiency rate, per	r Table A-5: x 0.9	
			Total reduction:	13,852.06 lbs/year

Name:	Sheepford Crossing East Basin				
Location:	Ewe R	Ewe Road			
Storm Sewer Shed:	YBC3				
Soil Type:	С				
Drainage Area:	44.98 a	acres			
Impervious Area:	32%: Area:	14.39 acres 14.39 acres x 2065.10 lbs/acre/year =	29,716.79 lbs/year		
Pervious Area:	68%: Area:	30.59 acres 30.59 acres x 306.95 lbs/acre/year =	9,389.60 lbs/year		
		Subtotal:	39,106.39 lbs/year		
Proposed BMP:	New re	trofit of detention basin for bioretention			
	55% ef	ficiency rate, per Table A-5: x 0.55			
		Total reduction:	21,508.51 lbs/year		

Name:	Sheepford Crossing West Basin			
Location:	Lisbur	n Road/Sheepford Road		
Storm Sewer Shed:	CRT2			
Soil Type:	С			
Drainage Area:	32.3 ac	cres		
Impervious Area:	32%: Area:	10.336 acres 10.336 acres x 2065.10 lbs/acre/year =	21,344.87 lbs/year	
Pervious Area:	68%: Area:	21.964 acres 21.964 acres x 306.95 lbs/acre/year =	6,741.85 lbs/year	
		Subtotal:	28,086.72 lbs/year	
Proposed BMP:	New re	etrofit of detention basin for bioretention		
	55% ef	ficiency rate, per Table A-5: x 0.55		
		Total reduction:	15,447.70 lbs/year	

Name:	Westport Business Center Basin			
Location:	Westport Drive			
Storm Sewer Shed:	CRT2			
Soil Type:	В			
Drainage Area:	77.01 acres			
Impervious Area:	32%: 24.64 acres Area: 24.64 acres x 2065.10 lbs/acre/year =	50,884.06 lbs/year		
Pervious Area:	68%: 52.37 acres Area: 52.37 acres x 306.95 lbs/acre/year =	16,074.97 lbs/year		
	Subtotal:	66,959.03 lbs/year		
Proposed BMP:	New retrofit of detention basin for bioretention			
	90% efficiency rate, per Table A-5: x 0.9			
	Total reduction:	60,263.13 lbs/year		

Pollutant Loading Reduction BMP

.

Name:	Rossmoyne Business Center Basin				
Location:	Ritter I	Ritter Road			
Storm Sewer Shed:	CRM4				
Soil Type:	В				
Drainage Area:	135.99	acres			
Impervious Area:	32%: Area:	43.52 acres 43.52 acres x 2065.10 lbs/ac	cre/year =	89,873.15 lbs/year	
Pervious Area:		92.47 acres 92.47 acres x 306.95 lbs/a	cre/year =	28,383.67 lbs/year	
		Sul	btotal:	118,256.82 lbs/year	
Proposed BMP:	New re	rofit of detention basin for t	oioretention	1	
	90% ef	iciency rate, per Table A-5:	x 0.9		
		Total reduc	tion:	106,431.14 lbs/year	

Name:	BJs Wholesale Club Basin			
Location:	3805 H	Iartzdale Drive		
Storm Sewer Shed:	CRM2			
Soil Type:	С			
Drainage Area:	10.924	acres		
Impervious Area:	Area:	8.516 acres (per development plan) 8.516 acres x 2065.10 lbs/acre/year =	17,586.39 lbs/year	
Pervious Area:	Area:	2.408 acres (per development plan) 2.408 acres x 306.95 lbs/acre/year =	739.14 lbs/year	
		Subtotal:	18,325.53 lbs/year	
Proposed BMP:	New re	etrofit of detention basin for bioretention		
	55% et	ficiency rate, per Table A-5: x 0.55		
		Total reduction:	10,079.04 lbs/year	

Name:	LAT Public Works Facility Basin			
Location:	1400 S	t. Johns Road		
Storm Sewer Shed:	CRM2			
Soil Type:	В			
Drainage Area:	7.14 ac	pres		
Impervious Area:	Area:	5.71 acres (per development plan) 5.71 acres x 2065.10 lbs/acre/year =	11,791.72 lbs/year	
Pervious Area:	Area:	1.43 acres (per development plan) 1.43 acres x 306.95 lbs/acre/year =	438.94 lbs/year	
		Subtotal:	12,230.66 lbs/year	
Proposed BMP:	New re	etrofit of detention basin for bioretention		
	90% et	fficiency rate, per Table A-5: x 0.90		
		Total reduction:	11,007.59 lbs/year	

Name:	Weis Market/UMHC Basin				
Location:	5120 S	5120 Simpson Ferry Road			
Storm Sewer Shed:	CRM3				
Soil Type:	С				
Drainage Area:	36.36	acres			
Impervious Area:	Area:	24.12 acres (per development plan) 24.12 acres x 2065.10 lbs/acre/year =	49,810.21 lbs/year		
Pervious Area:	Area:	12.24 acres (per development plan) 12.24 acres x 306.95 lbs/acre/year =	3,757.07 lbs/year		
		Subtotal:	53,567.28 lbs/year		
Proposed BMP:	New re	etrofit of detention basin for bioretention			
	55% et	fficiency rate, per Table A-5: x 0.55			
		Total reduction:	29,462.00 lbs/year		

Name:	Heights of Beacon Hill Phases 1 and 2 Basin		
Location:	Lowell Lane		
Storm Sewer Shed:	NC2		
Soil Type:	В		
Drainage Area:	21.5 acres		
Impervious Area:	Area:	7.00 acres (per development plan) 7.00 acres x 2065.10 lbs/acre/year =	14,455.70 lbs/year
Pervious Area:	Area:	14.50 acres (per development plan) 14.50 acres x 306.95 lbs/acre/year =	4,450.78 lbs/year
		Subtotal:	18,906.48 lbs/year
Proposed BMP:	New retrofit of detention basin for bioretention		
	90% et	fficiency rate, per Table A-5: x 0.9	
		Total reduction:	17,015.83 lbs/year

Name:	Bethany Village West Basin B				
Location:	5225 Wilson Lane				
Storm Sewer Shed:	CRM3				
Soil Type:	B/C				
Drainage Area:	37.65 acres				
Impervious Area:	Area:	17.30 acres (p 17.30 acres x	•	• ·	35,726.23 lbs/year
Pervious Area:	Area:	20.35 acres (p 20.35 acres x	_		6,246.43 lbs/year
			S	Subtotal:	41,972.66 lbs/year
Proposed BMP:	New re	etrofit of detenti	on basin fo	r bioretention	
	78.3% efficiency rate, per Table A-5 and prorated For B and C soil types: x 0.783				
			Total red	uction:	32,864.59 lbs/year

LOWER ALLEN TOWNSHIP CUMBERLAND COUNTY PENNSYLVANIA

National Pollutant Discharge Elimination System (NPDES)

Small Municipal Separate Storm Sewer System (MS4)

Pollution Reduction Plan (PRP) September, 2017

Draft: 6-16-17

Description

Lower Allen Township (LAT) is a Township of the First Class consisting of 6546.70 acres. The majority of the Township is in the Yellow Breeches Creek (YBC) watershed. Small areas drain to the Borough of New Cumberland (32.95 acres, or 0.005%) and Upper Allen Township (43.63 acres, or 0.007%). All drainage from LAT is in the Susquehanna River watershed.

	SS Shed	Acres	%/100
Cedar Run-Main	CRM1	216.56	0.033079261
	CRM2	656.28	0.100245925
	CRM3	960.29	0.146683062
	CRM4	318.61	0.048667267
Cedar Run-Tributary	CRT1	464.57	0.07096247
	CRT2	893.13	0.136424458
New Cumberland	NC1	4.9	0.000748469
	NC2	28.05	0.004284601
Upper Allen Township	UAT1	43.63	0.006664426
Yellow Breeches Creek	YBC1	146.87	0.022434203
	YBC2	548.44	0.083773504
	YBC3	1495.66	0.22846014
	YBC4	588.87	0.089949135
YBC-Tributary	YBT1	180.84	0.027623077
	Total	6546.7	1

LAT is further mapped into storm sewer sheds, as follows:

Approach

LAT was preparing the PRP in accordance with the PRP Instructions distributed by the Pennsylvania Department of Environmental Protection (DEP), identified as 3800-PM-BCW0100k 5/2016. Following DEP's revisions to these instructions, LAT revised the PRP to follow the instructions identified as 3800-PM-BCW0100k Rev. 3/2017. The following approach was used:

- 1. Determine Planning Area, using total area of the MS4, minus areas that are parsed out.
- 2. Identify pollutants of concern, and required loading reductions.
- 3. Identify appropriate methods/best management practices (BMPs) to achieve required loading reductions.
- 4. Prepare Draft PRP, and present for public comment.
- 5. Submit Final PRP to DEP.

Summary

1. Planning Area

6546.70 acres	Total area, LAT
-2980.38 acres	Total parsed area
3566.32 acres	Planning Area

2. Loading Rates for Sediment:

2065.10 lbs/acre/year = 2,356,733.42 lbs/year	
306.95 lbs/acre/year = + 744,384.45 lbs/year	
3,101,117.87 lbs/year	
<u>- 6,814.83 lbs/year</u>	
3,094,303.04 lbs/year	
309,430.30 lbs/year	
317,931.59 lbs/year	

In accordance with 3800-PM-BCW0100k Rev. 3/2017, it is assumed that TP and TN goals are achieved when 10% reduction in sediment is achieved.

3. Pollutants of concern

According to the DEP MS4 Requirements Table (Municipal). Dated 5/9/2017, the pollutants of concern are as follows:

- a. Appendix B Pathogens
- b. Appendix C PCB
- c. Appendix D Nutrients, Siltation
- d. Appendix E Organic Enrichment/Low D.O., Siltation

In accordance with DEP's Pollutant Aggregation Suggestions for MS4 Requirements Table, dated April 4, 2017, LAT's approach is to locate all BMPs with the Yellow Breeches Creek watershed, since 98.83% of the Planning Area is within that watershed.

4. BMPs selected

BMPs were selected based on data in the *Recommendations of the Expert Panel to Define Removal Rates for Urban Stormwater Retrofit Projects*, published by Chesapeake Stormwater Network, last Revised January 20, 2015. The PRP includes retrofit of nine existing dry detention basins to bioretention areas/basins, with runoff reductions computed in accordance with Table A-5 in Appendix A of the referenced Recommendations.

PRP Elements

- A. Public Participation
 - a. A copy of the public notice is included in Appendix 1.
 - b. A copy of written comments received from the public is included in Appendix 1.
 - c. A copy of LAT's consideration of all timely comment received in the public comment period is included in Appendix 1.
- B. Maps
 - Maps showing the following information are included in Appendices:
 - a. Storm sewer shed boundaries Appendix 2
 - b. Existing land uses Appendix 2
 - c. Parsed areas Appendix 3

C. Pollutants of Concern

According to DEP's MS4 Requirements Table, last revised 5/9/2017, pollutants of concern are as follows:

PCB
Nutrients, Siltation
Pathogens
Organic Enrichment/Low D.O., Siltation
Pathogens, Nutrients, Siltation

1. Appendix B

For Pathogens, LAT will follow the requirements specified by DEP in Appendix B, Pollutant Control Measures for Waters Impaired by Pathogens, as follows:

- a. Prepare maps showing affected storm sewer sheds and outfalls that discharge to subject surface waters.
- b. Develop inventory of all suspected and known sources of bacteria in stormwater within the storm sewer shed. This will be implemented by identifying non-stormwater discharges during outfall inspections that are done as part of MCM No. 3, Illicit Discharge Detection and Elimination (IDD and E). Also, information gathered through enforcement of the LAT Act 167 Stormwater Management Ordinance will be used to identify these sources.
- c. Investigate each known and suspected source, including stormwater sampling when needed.
- d. The results and progress of each investigation will be documented and included in Annual MS4 Status Reports.
- 2. Appendix C

For Priority Organic Compounds, LAT will follow the requirements specified by DEP in Appendix C, Pollutant Control Measures for Waters Impaired by Priority Organic Compounds, as follows:

- a. Prepare maps showing affected storm sewer sheds and outfalls that discharge to subject surface waters.
- b. Develop inventory of all suspected and known anthropogenic sources of Priority Organic Compounds in stormwater within the storm sewer shed. This will be implemented by identifying non-stormwater discharges during outfall inspections that are done as part of MCM No. 3, Illicit Discharge Detection and Elimination (IDD and E). Also, information gathered through enforcement of the LAT Act 167 Stormwater Management Ordinance will be used to identify these sources.
- c. Investigate each known and suspected source, including stormwater sampling when needed.
- d. Notify DEP in writing if the source of discharge is found to be an industrial site.
- e. The results and progress of each investigation will be documented and included in Annual MS4 Status Reports.
- 3. Appendix D

Chesapeake Bay Pollutants of Concern and required reductions are as follows:

- a. Sediment: 10%
- b. Total Nitrogen (TN): 5%
- c. Total Phosphorus (TP): 3%

In accordance with DEP PRP Instructions, 3800-PM-BCW0100k Rev. 3/2017, Section I.B, the approach used by LAT will be to achieve a 10% reduction in sediment, as it is expected that TP and TN goals will be achieved when a 10% reduction in sediment is achieved.

- D. Existing Loading for Pollutants of Concern
 - 1. DEP has determined the following sediment loading rates for Cumberland County:Impervious developed:2056.10 lbs/acre/yearPervious developed:306.95 lbs/acre/year
 - 2. DEP has determined that LAT is 32% impervious, and 68% pervious. These figures were used to compute loading rates where more accurate pervious/impervious data was not available. Where more accurate, site-specific data was available, it was used to compute loading rates.
 - 3. Sediment Loading Rate Computation: Impervious, 32%: 1141.22 acres x 2065.10 lbs/acre/year = 2,356,733.42 lbs/year Pervious, 68%: 2425.10 acres x 306.95 lbs/acre/year = <u>+744,384.45 lbs/year</u> Total calculated load: 3,101,117.87 lbs/year Street sweeping credit: <u>-6,814.83 lbs/year</u>

Base Loading:	3,094,303.04 lbs/year
Target 10% Reduction:	309,430.30 lbs/year
Computed reduction:	317,931.59 lbs/year

- E. BMPs for Loading Reduction
 - 1. LAT proposes to achieve the required pollutant load reduction through retrofit projects of existing detention basins. The retrofits will consist of converting existing dry detention basins to bioretention facilities. This will occur at 10 locations, four owned by LAT and six privately owned. Easements are proposed to allow LAT to construct, operate and maintain the BMPs at the privately owned facilities.
 - 2. The proposed locations and associated reductions are as follows:

	Sediment
BMP Facility	Reduction lbs/year
Moreland Basin	13,852.06
Sheepford Crossing East Basin	21,508.51
Sheepford Crossing West Basin	15,447.70
Westport Business Center Basin	60,263.13
Rossmoyne Business Center Basin	106,431.14
BJs Wholesale Club Basin	10,079.04
LAT Public Works Facility Basin	11,007.59
Weis Market/UMHC Basin	29,462.00
Heights of Beacon Hill Phases 1 and 2 Basin	17,015.83
Bethany Village West Basin B	32,864.59
TOTAL	317,931.59

Computation worksheets for each proposed BMP are included in Appendix 4.

F. Funding

- 1. The proposed projects will be paid for by the taxpayers of Lower Allen Township. The Township is considering the implementation of a stormwater fee. Whether or not that occurs, Lower Allen Township property owners will pay for these projects mandated by DEP through increased taxes and/or fees.
- G. Operation and Maintenance Responsibilities
 - 1. Lower Allen Township will retain ownership and maintenance responsibilities of BMPs installed as part of this program.