Township of Abington MS4 Program

Individual Permit Application (IP)

Total Maximum Daily Load Plan(TMDL)

Pollutant Reduction Plans (PRPs)

May 3, 2017

Michael E. Powers. P.E.
Township Engineer

Agenda

Introduction & Background

MS4 Individual Permit

Total Maximum Daily Load Plan (TMDL)

Pollutant Reduction Plans (PRPs) and Pollutant Control Measures (PCMs)

Implementation

Questions and Comments

Introduction & Background

MS4: Municipal Separate Storm Sewer System

- Abington's MS4 Facilities have been covered by a General Permit since 2003. The current permit expires in March 2018, and the renewal application is due on **September 16, 2017**.
- Abington must apply for an Individual Permit due to the fact that a TMDL has been established for the Wissahickon Watershed (Sandy Run).
- The Individual Permit requires the creation of a Stormwater Management Plan (SWMP) for the Township.
- In addition, as part of the Individual Permit, the Township must develop a plan to meet TMDL discharge limits and also prepare Pollutant Reduction Plans (PRPs) and Pollutant Control Measures for all impaired streams in the Township.

Abington's Stormwater Management Plan (SWMP)

Abington must, at a minimum, develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4:

- to the maximum extent practicable (MEP),
- to protect water quality, and
- to satisfy the appropriate water quality requirements of the Clean Water Act. [40 CFR 122.34(a)]

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) ANNUAL/PROGRESS REPORT

For the Reporting Period: March 16, 2014 **to** March 15, 2016

☐ Annual Report ☒ Progress Report **Due Date:** May 16, 2016
☐ New Permittee ☐ Renewal Permittee

GENERAL INFORMATION			
Permittee Name:	**Township of Abington**	NPDES Permit No.:	**PAG130012**
Mailing Address:	**1176 Old York Road**	Effective Date:	**March 16, 2013**
City, State, Zip:	**Abington, PA 19001**	Expiration Date:	**March 15, 2018**
MS4 Contact Person:	**Michael E. Powers, P.E.**	Renewal Due Date:	**September 17, 2017**

USEPA Expectations for an MS4 Permit Program

Stormwater Management for Small MS4s…are the following addressed?

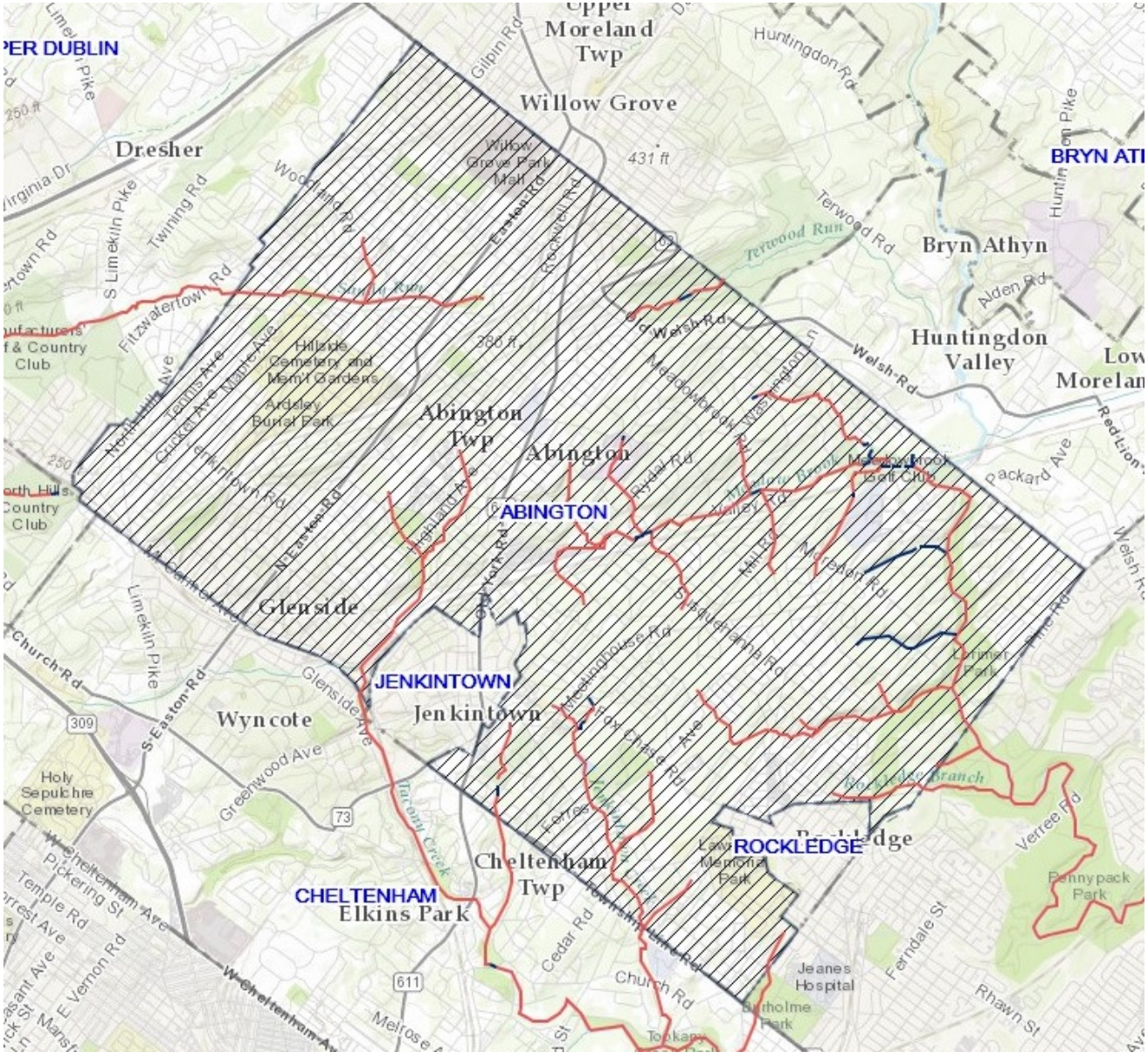
- Applicability
- Limitations of Coverage
- Stormwater Management Program (SWMP)
  - *(MCM 1) Public Education and Outreach*
  - *(MCM 2) Public Involvement/Participation*
  - *(MCM 3) Illicit Discharge Detection & Elimination*
  - *(MCM 4) Construction Site Stormwater Runoff Control*
  - *(MCM 5) Post-Construction Stormwater Management in New Development and Redevelopment Pollution*
  - *(MCM 6) Prevention/Good Housekeeping for Municipal Operations*
- Discharges to Water Quality Impaired Waters
  - ***TMDL Plans***
  - ***PRP Plans***
- Sharing Responsibility
- Reviewing and Updating SWMPs
- Monitoring
- Recordkeeping
- Reporting

PADEP MS4 Requirements Table

ABINGTON TOWNSHIP TMDL-PRP/PCM REQUIREMENTS		
IMPAIRED WATERS	**REQUIREMENTS**	**OTHER CAUSES OF IMPAIRMENT**
Pennypack Creek	Appendix B-Pathogens (4a); Appendix C-Priority Organics (4a) Appendix E-Organic Enrichment/Low D.O. (4a); Appendix E-Siltation (5)	Cause Unknown (5)
Wissahickon TMDL	TMDL Plan-Siltation; Suspended Solids (4a)	Cause Unknown (4a)
Meadow Brook	Appendix E-Siltation (5)	Cause Unknown (5)
Jenkintown Creek		Flow Alterations; Other Habitat Alterations; Water/Flow Variability (4c)
East Branch Jenkintown Creek		Flow Alterations; Other Habitat Alterations; Water/Flow Variability (4c)
Frankford Creek	Appendix C-PCB (4a); Appendix E-Organic Enrichment/Low D.O. (5)	Flow Alterations Other Habitat Alterations Water/Flow Variability (4c)s
Unnamed Tributaries to Wissahickon Creek		Other Habitat Alterations (4c)
Terwood Run	Appendix E-Siltation (5)	Cause Unknown (5)
Rockledge Branch	Appendix E-Siltation (5)	Cause Unknown (5)
Wissahickon Creek	Appendix E-Nutrients (4a); Appendix B-Pathogens (5)	Water/Flow Variability (4c)
Robinhood Brook	Appendix E-Siltation (5)	Cause Unknown (5)
Sandy Run	Appendix B-Pathogens (4a); Appendix E-DO/BOD; Nutrients (4a)	Other Habitat Alterations; Water/Flow Variability (4c)
Tacony Creek	Appendix E-Organic Enrichment/Low D.O. (5)	Flow Alterations; Other Habitat Alterations; Water/Flow Variability (4c)

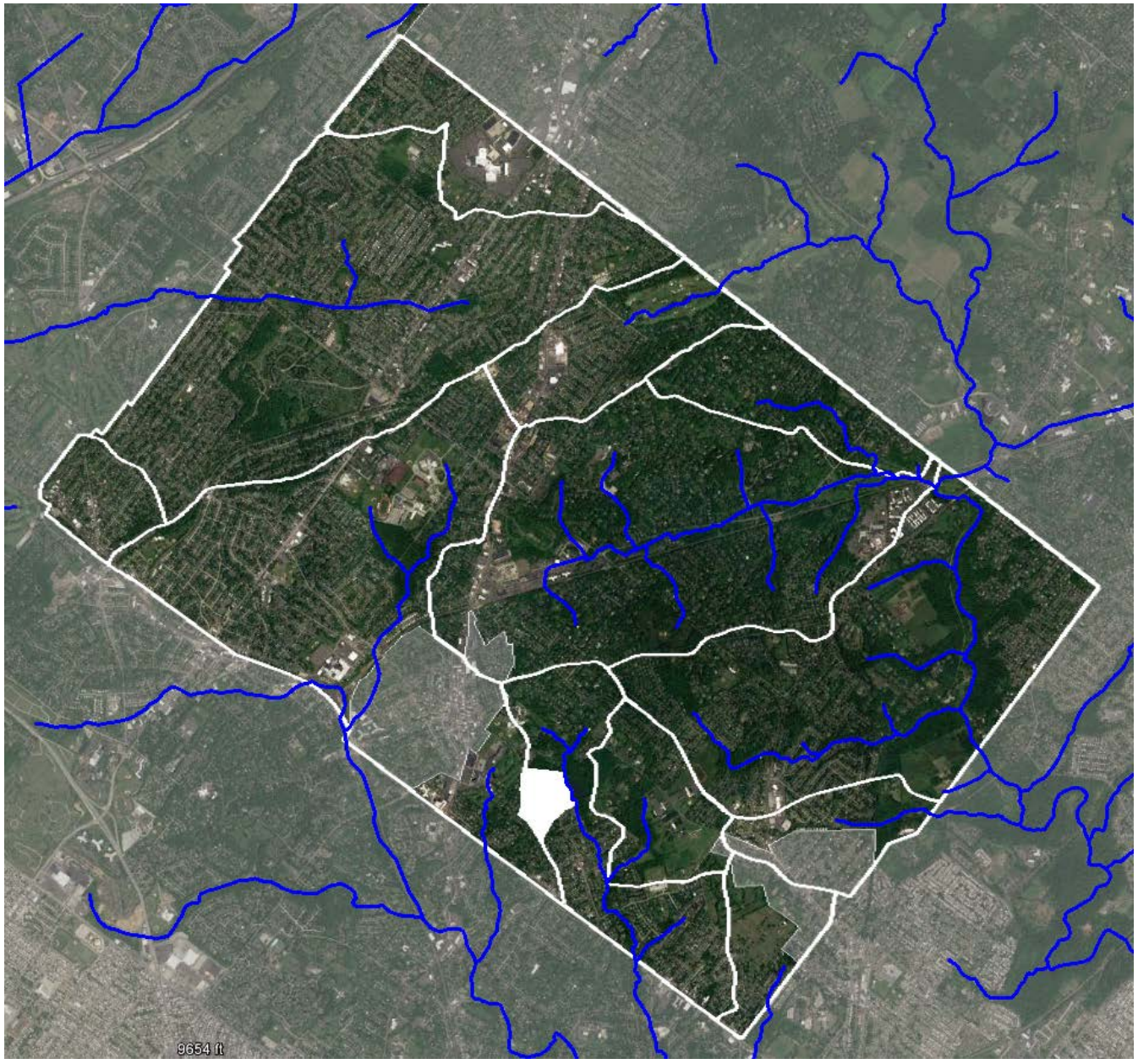
Impaired Streams – Abington Township

Red – Impaired
Blue – Not Impaired



Stream Segment Catchments

Wissahickon Creek	195 Acres
Pennypack Creek	2,097 Acres
Rockledge Branch	290 Acres
Meadow Brook	1,910 Acres
Robinhood Brook	382 Acres
Jenkintown Creek	644 Acres
Tacony Creek	2,108 Acres
Terwood Run	450 Acres
East Branch Jenkintown Creek	343 Acres
Sandy Run	2,098 Acres



Wissahickon Creek TMDL

The following table summarizes the pollutant load reduction requirement for Abington Township that has been established to address **Siltation** Impairments for the Township:

WISSAHICKON CREEK TMDL PLAN (2003)	SILTATION LOADS	
SILTATION: ABINGTON'S EXISTING LOAD (2003 TMDL):	484,143.02	lbs/year
SILTATION: ABINGTON'S WLA REQUIREMENT (2003 TMDL):	128,913.40	lbs/year
SILTATION: ABINGTON'S REQUIRED REDUCTION (2003 TMDL):	355,229.62	lbs/year
SILTATION: ABINGTON'S PERCENT REDUCTION REQUIRED (2003 TMDL):	**73%**	

The above load reduction correspond to a 73% reduction of siltation. As per PADEP recommendations the TMDL plan should meet this percentage reduction requirement.

Wissahickon Creek TMDL (2017 Modeling)

	SILTATION	NITROGEN	PHOSPHORUS
2017 STEPL MODELING-ABINGTON'S BASE LOAD:	720,900 lbs/year	17,649 lbs/year	2,745 lbs/year
2017 STEPL MODELING-ABINGTON'S 73% SILTATION REQUIRED REDUCTION:	526,257 lbs/year		
2017 STEPL MODELING-ABINGTON'S 5% NUTRIENT REQUIRED REDUCTION:		882.45 lbs/year	137.25 lbs/year

Wissahickon TMDL BMP Reductions

POLLUTANT REDUCTION: BMP's CONSTRUCTED (STEPL MODEL)	SILTATION	NITROGEN	PHOSPHORUS
Susquehanna Woods Stormwater Retention Basin (2005):	20,243 lbs/year	160 lbs/year	63 lbs/year
Roslyn Park Rain Garden (2009):	982 lbs/year	16 lbs/year	3 lbs/year
Riparian Buffer Replacement (2009):	2,683 lbs/year	29 lbs/year	8 lbs/year
Susquehanna Woods Basin #1 (2004):	7,724 lbs/year	67 lbs/year	12 lbs/year
Susquehanna Woods Basin #2 (2004):	4,652 lbs/year	32 lbs/year	7 lbs/year
Hamel Avenue Infiltration Basin (2007):	15,375 lbs/year	295 lbs/year	54 lbs/year
Sandy Run Streambank Stabilization (Woodland Road) (2009):	10,463 lbs/year	14 lbs/year	6 lbs/year
Sandy Run Streambank Stab. (Avondale & Susquehanna) (2013):	40,313 lbs/year	52 lbs/year	24 lbs/year
POLLUTANT REDUCTION: BMP's TO BE CONSTRUCTED (STEPL MODEL)			
Susquehanna Woods Basin #3 Retrofit:	20,138 lbs/year	153 lbs/year	26 lbs/year
Sandy Run Streambank Stabilization:	39,234 lbs/year	51 lbs/year	24 lbs/year
Madison Avenue Meadow Construction:	4,173 lbs/year	79 lbs/year	15 lbs/year
Roychester Park Rain Garden	4,716 lbs/year	90 lbs/year	17 lbs/year
Roychester Riparian Buffer Restoration	6,467 lbs/year	71 lbs/year	25 lbs/year
Roychester Park Bioretention/Infiltration Trench	1,729 lbs/year	33 lbs/year	4 lbs/year
Roychester Park Infiltration Berms/Ret. Grading	5,433 lbs/year	107 lbs/year	19 lbs/year
Evergreen Manor Park Infiltration Basin	15,829 lbs/year	314 lbs/year	58 lbs/year
Grove Park Streambank Restoration	195,000 lbs/year	254 lbs/year	117 lbs/year
Ardsley Wildlife Sanctuary Basin Renovations	142,475 lbs/year	612 lbs/year	71 lbs/year
TOTAL PROJECTED BMP POLLUTANT REDUCTION:	537,629 lbs/year	2,428 lbs/year	553 lbs/year

Abington Township PRPs

A. The permittee shall achieve the pollutant load reduction(s) (lbs/year) proposed in its PRP within 5 years following DEP's approval of coverage under the General Permit (identified on page 1). The minimum percent reduction for pollutant loadings of sediment and Total Phosphorus (TP) shall be 10% and 5%, respectively. If the surface water is impaired for both sediment and nutrients, both sediment (10%) and TP (5%) reductions must be achieved. If the surface water is impaired for sediment alone, a sediment (10%) reduction must be achieved. If the cause of impairment is nutrients, a TP (5%) reduction must be achieved. Pollutant reduction efficiencies for selected BMPs shall be in accordance with the BMP Effectiveness Values document published by DEP (3800-PM-BCW0100m) or Chesapeake Bay Program Office expert panel reports. The permittee shall submit a report demonstrating implementation of the PRP as an attachment to the first Annual MS4 Status Report that is due following completion of the 5th year of General Permit coverage.

- 10% sediment reduction
- 5% Total Phosphorus reduction

PRP Loading and BMP Reductions

ABINGTON POLLUTANT REDUCTION PLANS				
PENNYPACK CREEK PRP PLAN	**SILTATION LOADS**		**NUTRIENT (TP) LOADS**	
STEPL MODELING-WATERSHED EXISTING LOAD:	359,739	lbs/year	311	lbs/year
REQUIRED REDUCTION PERCENTAGE:	10%		5	%
REDUCTION REQUIREMENT:	35,974	lbs/year	16	lbs/year
BMP's TO BE CONSTRUCTED	**SILTATION LOADS**		**NUTRIENT (TP) LOADS**	
Melmar Basin & Stabilization	6,600	lbs/year	8.8	lbs/year
Wyndmoor Basin & Stabilization	6,200	lbs/year	8.1	lbs/year
Irvin Road Streambank Stabilization	23,625	lbs/year	14.2	lbs/year
TOTAL PROJECTED BMP POLLUTANT REDUCTION:	36,425	lbs/year	31.1	lbs/year
MEADOWBROOK CREEK PRP PLAN	**SILTATION LOADS**			
STEPL MODELING-WATERSHED EXISTING LOAD:	549,236	lbs/year		
REQUIRED REDUCTION PERCENTAGE:	10%			
REDUCTION REQUIREMENT:	54,924	lbs/year		
BMP's TO BE CONSTRUCTED	**SILTATION LOADS**			
Streambank Stabilization Scout Preserve	33,750	lbs/year		
Streambank Stabilization Valley View	22,500	lbs/year		
TOTAL PROJECTED BMP POLLUTANT REDUCTION:	56,250	lbs/year		
ROBINHOOD BROOK PRP PLAN	**SILTATION LOADS**			
STEPL MODELING-WATERSHED EXISTING LOAD:	17,064	lbs/year		
REQUIRED REDUCTION PERCENTAGE:	10%			
REDUCTION REQUIREMENT:	1,706	lbs/year		
BMP's TO BE CONSTRUCTED	**SILTATION LOADS**			
SHARPLESS ROAD FILTER BOX	5,400	lbs/year		
TOTAL PROJECTED BMP POLLUTANT REDUCTION:	5400	lbs/year		
ROCKLEDGE BRANCH (PENNYPACK) PRP PLAN	**SILTATION LOADS**			
STEPL MODELING-WATERSHED EXISTING LOAD:	17,081	lbs/year		
REQUIRED REDUCTION PERCENTAGE:	10%			
REDUCTION REQUIREMENT:	1,708	lbs/year		
BMP's TO BE CONSTRUCTED	**SILTATION LOADS**			
Rockledge Avenue Filter Box	4,200	lbs/year		
TOTAL PROJECTED BMP POLLUTANT REDUCTION:	4,200	lbs/year		

PRP Loading and BMP Loadings (continued)

TERWOOD RUN PRP PLAN	**SILTATION LOADS**			
STEPL MODELING-WATERSHED EXISTING LOAD:	13,830	lbs/year		
REQUIRED REDUCTION PERCENTAGE:	10	%		
REDUCTION REQUIREMENT:	1,383	lbs/year		
BMP's TO BE CONSTRUCTED	**SILTATION LOADS**			
Davidson Road Treatment/Filter Box	28,200	lbs/year		
TOTAL PROJECTED BMP POLLUTANT REDUCTION:	28,200	lbs/year		
TACONY AND FRANKFORD CREEKS PRP PLAN			**NUTRIENT (TP) LOADS**	
STEPL MODELING-WATERSHED EXISTING LOAD:			405	lbs/year
REQUIRED REDUCTION PERCENTAGE:			5	%
REDUCTION REQUIREMENT:			20.25	lbs/year
BMP's TO BE CONSTRUCTED				
ALVERTHORPE PARK EXTENDED DETENTION BASIN			18.46	lbs/year
ALVERTHORPE PARK BIOSWALE			7.54	lbs/year
TOTAL PROJECTED BMP POLLUTANT REDUCTION:			26	lbs/year
WISSAHICKON CREEK PRP PLAN			**NUTRIENT (TP) LOADS**	
STEPL MODELING-WATERSHED EXISTING LOAD:			233	lbs/year
REQUIRED REDUCTION PERCENTAGE:			5	%
REDUCTION REQUIREMENT:			11.65	lbs/year
BMP's CONSTRUCTED				
SEE TMDL PLAN: HAMEL AVENUE BASIN			54	lbs/year
TOTAL PROJECTED BMP POLLUTANT REDUCTION:			54	lbs/year
SANDY RUN PRP PLAN			**NUTRIENT (TP) LOADS**	
STEPL MODELING-WATERSHED EXISTING LOAD:			2511	lbs/year
REQUIRED REDUCTION PERCENTAGE:			5	%
REDUCTION REQUIREMENT:			125.55	lbs/year
BMP's TO BE CONSTRUCTED				
SEE TMDL PLAN: TOTAL BMPS LESS HAMEL AVENUE BASIN			499	lbs/year
TOTAL PROJECTED BMP POLLUTANT REDUCTION:			54	lbs/year

TMDL Budget

TMDL BMP Cost Projections (5-10 Year Schedule)	Budget			
POLLUTANT REDUCTION: BMP's CONSTRUCTED	**Construction**	**Engineering**	**Grant (Act & Pot)**	**Total**
Susquehanna Woods Stormwater Retention Basin (2005)	-	-	-	-
Roslyn Park Rain Garden (2009)	-	-	-	-
Riparian Buffer Replacement (2009)	-	-	-	-
Susquehanna Woods Basin #1 (2004)	-	-	-	-
Susquehanna Woods Basin #2 (2004)	-	-	-	-
Hamel Avenue Infiltration Basin (2007)	-	-	-	-
Sandy Run Streambank Stabilization (Woodland Road) (2009)	-	-	-	-
Sandy Run Streambank Stab. (Avondale & Susquehanna) (2013)	-	-	-	-
POLLUTANT REDUCTION: BMP's TO BE CONSTRUCTED	**Construction**	**Engineering**	**Grant (Act & Pot)**	**Total**
Susquehanna Woods Basin #3 Retrofit	$ 75,000.00	$ 11,250.00	$ -	$ 86,250.00
Sandy Run Streambank Stabilization:**	$ 60,000.00	$ 9,000.00	$ -	$ 69,000.00
Madison Avenue Meadow Construction	$ 30,000.00	$ 4,500.00	$ -	$ 34,500.00
Roychester Park Rain Garden	$ 43,960.00	$ 8,050.00	$ 7,800.00	$ 44,210.00
Roychester Riparian Buffer Restoration	$ 32,315.00	$ 8,280.00	$ 6,100.00	$ 34,495.00
Roychester Park Bioretention/Infiltration Trench	$ 21,390.00	$ 6,900.00	$ 4,235.00	$ 24,055.00
Roychester Park Infiltration Berms/Ret. Grading	$ 44,850.00	$ 9,430.00	$ 8,140.00	$ 46,140.00
Evergreen Manor Park Infiltration Basin	$ 28,635.00	$ 10,900.00	$ 5,935.00	$ 33,600.00
Grove Park Streambank Restoration	$ 2,300,000.00	$ 350,000.00	$ 2,000,000.00	$ 650,000.00
Ardsley Wildlife Sanctuary Basin Renovations	$ 500,000.00	$ 75,000.00	$ 300,000.00	$ 275,000.00
Estimated Project Costs for TMDL Plan BMPs	$ 3,136,150.00	$ 493,310.00	$ 2,332,210.00	$ 1,297,250.00

**2017 Capital Budget

PRP and PCM Budget

PRP BMP Cost Projections (5 Year Schedule)	Budget			
POLLUTANT REDUCTION: BMP's TO BE CONSTRUCTED	Construction	Engineering	Grant (Act & Pot)	Total
Pennypack Creek Melmar Rd Basin	$ 75,000.00	$ 11,250.00	$ -	$ 86,250.00
Pennypack Creek Wyndmoor LA Basin	$ 75,000.00	$ 11,250.00	$ -	$ 86,250.00
Pennypack Creek Irvin Road Streambank Stabilization**	$ 50,000.00	$ 7,500.00	$ -	$ 57,500.00
Meadowbrook Streambank Stabilization in Scout Preserve	$ 135,000.00	$ 8,050.00	$ -	$ 143,050.00
Meadowbrook Streambank Stabilization in Bird Sanctuary	$ 90,000.00	$ 8,280.00	$ -	$ 98,280.00
Robinhood Brook Sharpless Road Filter Box	$ 75,000.00	$ 6,900.00	$ -	$ 81,900.00
Rockledge Branch Rockledge Avenue Lane Filter Box	$ 75,000.00	$ 9,430.00	$ -	$ 84,430.00
Terwood Run Davidson Road Filter Box	$ 75,000.00	$ 10,900.00	$ -	$ 85,900.00
TTF Alverthorpe Park Extended Detention Basin	$ 100,000.00	$ 15,000.00	$ -	$ 115,000.00
TTF Alverthorpe Park Bioswale	$ 115,000.00	$ 17,250.00		$ 132,250.00
Wissahickon TMDL Measures	$ -	$ -	$ -	$ -
Sandy Run TMDL Measures	$ -	$ -	$ -	$ -
Estimated Project Costs for PRP Plan BMPs	$ 865,000.00	$ 105,810.00	$ -	$ 970,810.00
** 2017 Capital Budget				

PCM Cost Projections (4 Year Schedule)	Budget			
POLLUTANT REDUCTION: BMP's TO BE CONSTRUCTED	Construction	Engineering	Grant (Act & Pot)	Total
Pathogens: Wissahickon Creek	$ -	$ 5,000.00	$ -	$ 5,000.00
Pathogens: Sandy Run	$ -	$ 10,000.00	$ -	$ 10,000.00
Pathogens: Pennypack Creek	$ -	$ 10,000.00	$ -	$ 10,000.00
Priority Organic Compounds: Pennypack Creek	$ -	$ 10,000.00	$ -	$ 10,000.00
Priority Organic Compounds(PCB): Frankford Creek	$ -	$ 10,000.00	$ -	$ 10,000.00
Estimated Project Costs for PCM Plans	$ -	$ 45,000.00	$ -	$ 45,000.00

Total Project Budget

Total Projected Costs					
Abington Township MS4: TMDL/PRP/PCM Program		**Construction**	**Engineering**	**Grant (Act & Pot)**	**Total**
Estimated Project Costs for TMDL Plan BMPs		$ 3,136,150.00	$ 493,310.00	$ 2,332,210.00	$ 1,297,250.00
Estimated Project Costs for PRP Plan BMPs		$ 865,000.00	$ 105,810.00	$ -	$ 970,810.00
Estimated Project Costs for PCM Plans		$ -	$ 45,000.00	$ -	$ 45,000.00
Total Projected Costs:		$ 4,001,150.00	$ 644,120.00	$ 2,332,210.00	$ 2,313,060.00