



MS4 Program Management

Nutrients/Sediment Pollutant Reduction Plans (PRPs) – Update Workshop

Southwest Pennsylvania Commission (SPC)
Cranberry Township Municipal Center
Cranberry Township, PA 16066
March 1, 2017

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PRP: Nutrients and/or Sediment

APPENDIX E

POLLUTANT REDUCTION PLAN REQUIREMENTS FOR DISCHARGES TO WATERS IMPAIRED FOR NUTRIENTS AND/OR SEDIMENT

MS4 permittees with at least one stormwater discharge to surface waters considered impaired for nutrients (nitrogen and phosphorus) and/or sediment, in which a TMDL has not been developed or the TMDL has not identified a wasteload allocation (WLA) for the permittee, must develop and submit a Pollutant Reduction Plan (PRP) with the NOI to reduce the pollutant loads to those waters. In the event the permittee also has at least one stormwater discharge to surface waters within the Chesapeake Bay watershed, the PRP may be combined with the CBPRP described in Appendix D.

- Sediment
- Total Phosphorus (TP)



Nutrient-Sediment PRP Development Schedule

Model input deck set-up, loading/drainage areas (or MS3s) – 1/5

Request municipal info review and confirmation /changes – 1/9

Municipal input provided on model data, parsed areas – 1/24

Baseline loadings finalized – 2/9

Reduction approach determined – 2/24



Reduction BMP options presented – 3/17

Reduction BMPs selected – 4/7

Draft PRP generated and submitted for review & approval – 5/5

Draft PRP approved – 5/26

Public comment period mechanism finalized - 5/30

Issue public notice – 6/1

Public comment period begins (30-day comment period) – 6/6

Public comment period ends – 7/7

Public comments reviewed, addressed, and incorporated into PRP/CBPRP – 8/3

Preliminary final version submitted for review & approval – 8/4

Final approval – 9/1

Packaging – 9/8

PRPs submission (with NOI) – 9/13

PADEP MS4 Requirements Table

MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Montgomery County						
ABINGTON TWP	PAG130012	Yes	TMDL Plan	Frankford Creek	Appendix C-PCB (4a), Appendix E-Organic Enrichment/Low D.O. (5)	Flow Alterations, Other Habitat Alterations, Water/Flow Variability (4c)
				Wissahickon Creek	Appendix E-Nutrients (4a), Appendix B-Pathogens (5)	Water/Flow Variability (4c)
				Wissahickon TMDL	TMDL Plan-Siltation, Suspended Solids (4a)	Cause Unknown (4a)
				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)
				Rockledge Branch	Appendix E-Siltation (5)	Cause Unknown (5)
				Meadow Brook	Appendix E-Siltation (5)	Cause Unknown (5)
				Robinhood Brook	Appendix E-Siltation (5)	Cause Unknown (5)
				Jenkintown Creek		Flow Alterations, 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)
				Terwood Run	Appendix E-Siltation (5)	Cause Unknown (5)
				Unnamed Tributaries to Wissahickon Creek		Flow Alterations, Other Habitat Alterations (4c)
				East Branch Jenkintown Creek		Flow Alterations, Other Habitat Alterations, Water/Flow Variability (4c)
Sandy Run	Appendix B-Pathogens (4a), Appendix E-DO/BOD, Nutrients (4a)	Other Habitat Alterations, Water/Flow Variability (4c)				
AMBLER BORO	PAG130036	Yes	TMDL Plan	Wissahickon Creek	Appendix E-Nutrients (4a), Appendix B-Pathogens (5)	Water/Flow Variability (4c)
				Wissahickon TMDL	TMDL Plan-Siltation, Suspended Solids (4a)	Cause Unknown (4a)
				Unnamed Tributaries to Wissahickon Creek		Other Habitat Alterations (4c)
BRIDGEPORT BORO		No		Schuylkill River PCB TMDL	Appendix C-PCB (4a)	
BRYN ATHYN BORO	PAG130166	Yes	TMDL Plan	Southampton Creek TMDL	TMDL Plan-Nutrients, Organic Enrichment/Low D.O., Siltation (4a)	
				Pennypack Creek	Appendix E-Siltation (5)	Cause Unknown (5)
				Huntingdon Valley Creek	Appendix E-Siltation (5)	Cause Unknown (5)
				Southampton Creek		Flow Alterations, Other Habitat Alterations, Water/Flow Variability (4c)

PADEP MS4 Requirements Table

MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)
Allegheny County					
MOON TWP	PAG136274	No		McCabe Run	Appendix E-Organic Enrichment/Low D.O., Siltation (5)
				McClarens Run	Appendix A-Metals (4a), Appendix E-Organic Enrichment/Low D.O., Siltation (5)
				Unnamed Tributaries to Ohio River	Appendix E-Organic Enrichment/Low D.O., Siltation (5)
				Montour Run	Appendix A-Metals, pH (4a), Appendix E-Nutrients, Organic Enrichment/Low D.O., Siltation (5)
				Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)
				Spring Run	Appendix E-Organic Enrichment/Low D.O., Siltation (5)
MT LEBANON TWP	PAG136275	Yes	TMDL Plan	Scrubgrass Run	Appendix A-Metals (4a), Appendix E-Suspended Solids (4a), Appendix E-Siltation (5)
				Chartiers Creek	Appendix A-Metals (4a), Appendix C-PCB (4a), Appendix E-Suspended Solids (4a), Appendix E-Siltation (5)
				Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)
				Painters Run	Appendix A-Metals (4a), Appendix C-Chlordane, PCB (4a), Appendix E-Suspended Solids (4a), Appendix E-Siltation (5)
				Sawmill Run AMD and Sediment	Appendix A-Metals, pH (4a)
					TMDL Plan-Siltation (4a)
				Sawmill Run Nutrients	TMDL Plan-DO/BOD, Nutrients, Organic Enrichment/Low D.O., Siltation (4a)
				Sawmill Run	
MT OLIVER BORO	PAG136242	Yes	TMDL Plan	Sawmill Run Nutrients	TMDL Plan-DO/BOD, Nutrients, Organic Enrichment/Low D.O., Siltation (4a)

303(d) list

2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report - Streams, Category 5 Waterbodies, Pollutants Requiring a TMDL

Stream Name

HUC

Use Assessed (Assessment ID) - Miles

Source

Cause

Date Listed

TMDL Date

Hydrologic Unit Code: 02040104-Middle Delaware

Brodhead Creek

HUC: 02040104

Recreational (17516) - 3.65 miles

Source Unknown

Pathogens

2014

2027

Brodhead Creek Unnamed To (ID:26141298)

HUC: 02040104

Aquatic Life (10754) - 2.86 miles

Package Plants

Organic Enrichment/Low D.O.

2002

2015

Suspended Solids

2002

2015

Brodhead Creek Unnamed To (ID:26175212)

HUC: 02040104

Recreational (17516) - 0.24 miles

Source Unknown

Pathogens

2014

2027

2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report - Streams, Category 5 Waterbodies, Pollutants Requiring a TMDL

Stream Name

HUC

Use Assessed (Assessment ID) - Miles

Source

Cause

Date Listed

TMDL Date

Montour Run

HUC: 05030101

Aquatic Life (11406) - 12.66 miles

Other

Nonpriority Organics

2002

2015

Un-ionized Ammonia

2002

2015

Urban Runoff/Storm Sewers

Nutrients

1998

2011

Organic Enrichment/Low D.O.

1998

2011

Siltation

1998

2011

303(d) list

2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report - Streams, **Category 4a**
Waterbodies, Approved TMDLs

Stream Name

Use Designation (Assessment ID)

Source

Cause

Date Listed

TMDL Date

Montour Run

HUC: 05030101

Aquatic Life (11406) - 12.66 miles

Abandoned Mine Drainage

Metals

1996

2005

pH

1998

2005

Sawmill Run Unnamed To (ID:134396054)

HUC: 05030101

Aquatic Life (8743) - 2.43 miles

Combined Sewer Overflow

Organic Enrichment/Low D.O.

2002

2008

Urban Runoff/Storm Sewers

Siltation

2002

2007

Which PRP do I need?

WARWICK TWP	PAG133565	No	Bachman Run	Appendix B-Pathogens (5)
			Little Conestoga Creek	Appendix B-Pathogens (5), Appendix E-Nutrients, Siltation (5)
			Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)
			Cocalico Creek	Appendix E-Nutrients, Siltation (5)
			Conestoga River	Appendix B-Pathogens (5), Appendix E-Organic Enrichment/Low D.O., Siltation (5)
			Hammer Creek	Appendix E-Nutrients, Siltation (5)
			Lititz Run	Appendix E-Suspended Solids (4a), Appendix B-Pathogens (5)
			New Haven Run	Appendix E-Siltation (4a), Appendix B-Pathogens (5), Appendix E-Nutrients (5)
			Santo Domingo Creek	Appendix E-Suspended Solids (4a)

The screenshot shows a web-based GIS interface with a map of Warwick Twp. A popup window titled "TMDL Streams (4 of 6)" is open, displaying the following information for Lititz Run:

- TMDL GEN ID: 380
- TMDL Name: Lititz Run
- ReachCode: 02050306001449
- COMID: 57162135
- Status Final: Y
- Cause: Siltation ; Suspended Solids ; Turbidity
- TMDL Begin Date: 9/18/2004
- TMDL End Date: 11/17/2004
- Meeting Date: 9/28/2004
- Draft Date: Null
- Final Date: 10/29/2004
- TMDL URL Title: Lititz Run
- TMDL URL File: [Lititz TMDL.pdf](#)
- Info Sheet URL Title: Information Sheet for Lititz Run
- Info Sheet URL File: [Lititz INFO.pdf](#)
- Public Notice URL Title: Public Notice for Lititz Run
- Public Notice URL File: [Lititz PN.pdf](#)
- Other ID1 Title: Null
- Zoom to

At the bottom of the interface, there is a copyright notice: "Imagery: undefined; ESRI Streets: Sources: Esri, HERE, DeLorme, USGS, Intermap, Increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community".

Which PRP do I need?

MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)
Allegheny County					
MOON TWP	PAG136274	No		McCabe Run	Appendix E-Organic Enrichment/Low D.O., Siltation (5)
				McClarens Run	Appendix A-Metals (4a), Appendix E-Organic Enrichment/Low D.O., Siltation (5)
				Unnamed Tributaries to Ohio River	Appendix E-Organic Enrichment/Low D.O., Siltation (5)
				Montour Run	Appendix A-Metals, pH (4a), Appendix E-Nutrients, Organic Enrichment/Low D.O., Siltation (5)
				Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)
				Spring Run	Appendix E-Organic Enrichment/Low D.O., Siltation (5)

today, March 5 thru
Friday, March 10, 2017.

- Layers
- Land Reuse
 - Mining
 - Oil and Gas
 - Radiation
 - Sample Informat
 - Streams and Wat
 - Surface Water
 - Fish Informat
 - Flooding Infor
 - NHD HUC (Nat
 - NHD Flow
 - NHD Area
 - NHD Water
 - Hydrologi
 - Hydrologi
 - Water Monito
 - Water Quality
 - 2014 Integ
 - IR 201-
 - IR 201-
 - IR 201-
 - IR 201-
 - Attaininc S

Map eFacts Query Advanced Query

ESRI Streets & Imagery Topographic National Geographic

Streets Imagery

IR 2014 Aquatic Life (8 of 16)

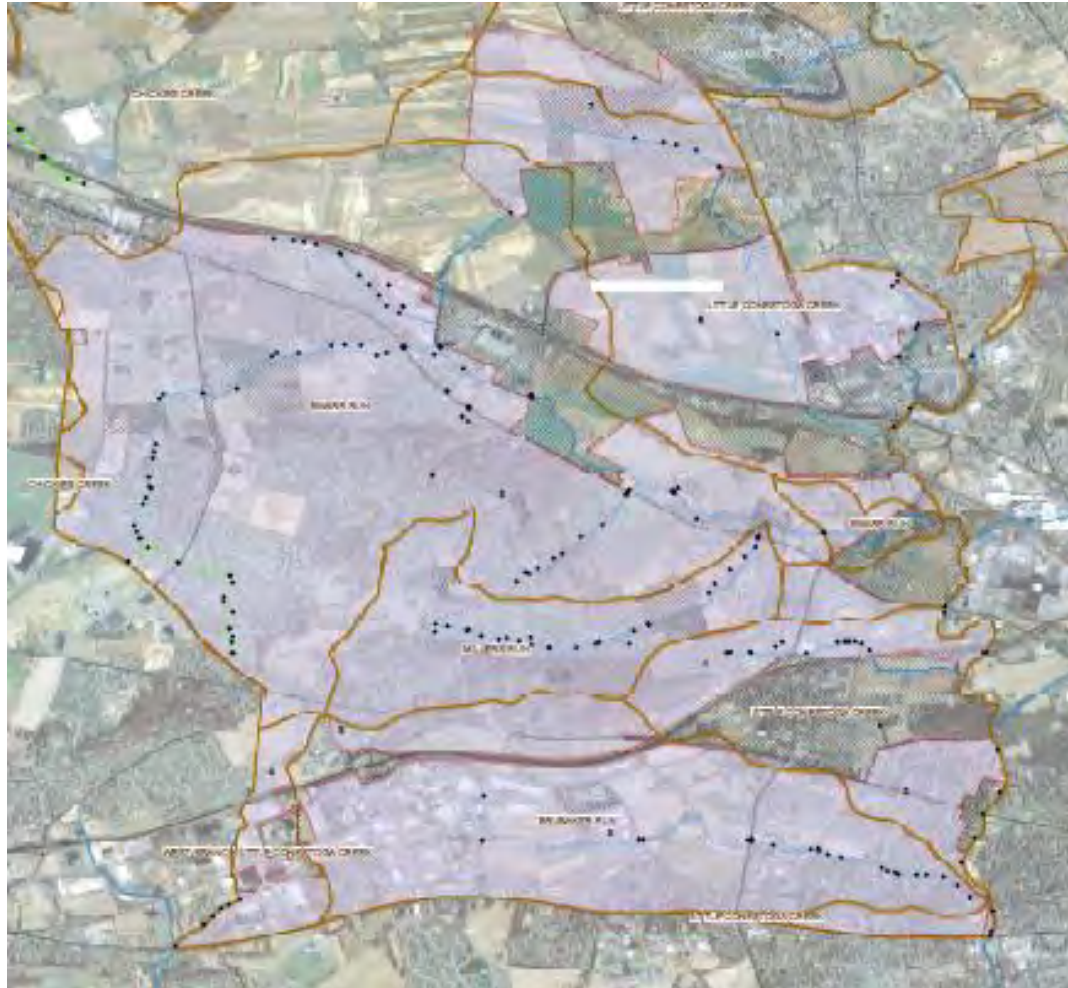
Assessment ID: 11406
 Assessed Use: Aquatic Life
 Status: Impaired
 Category: 5
 Impairment Source: Urban Runoff/Storm Sewers
 Impairment Cause: Siltation
 Date Listed: 1998
 Stream Name: Montour Run
 HUC: 05030101
 HUC Name: Upper Ohio
 County: Allegheny
 Zip Code: 15108
 Municipality: MOON
 Municipality Type: TWP

Zoom to

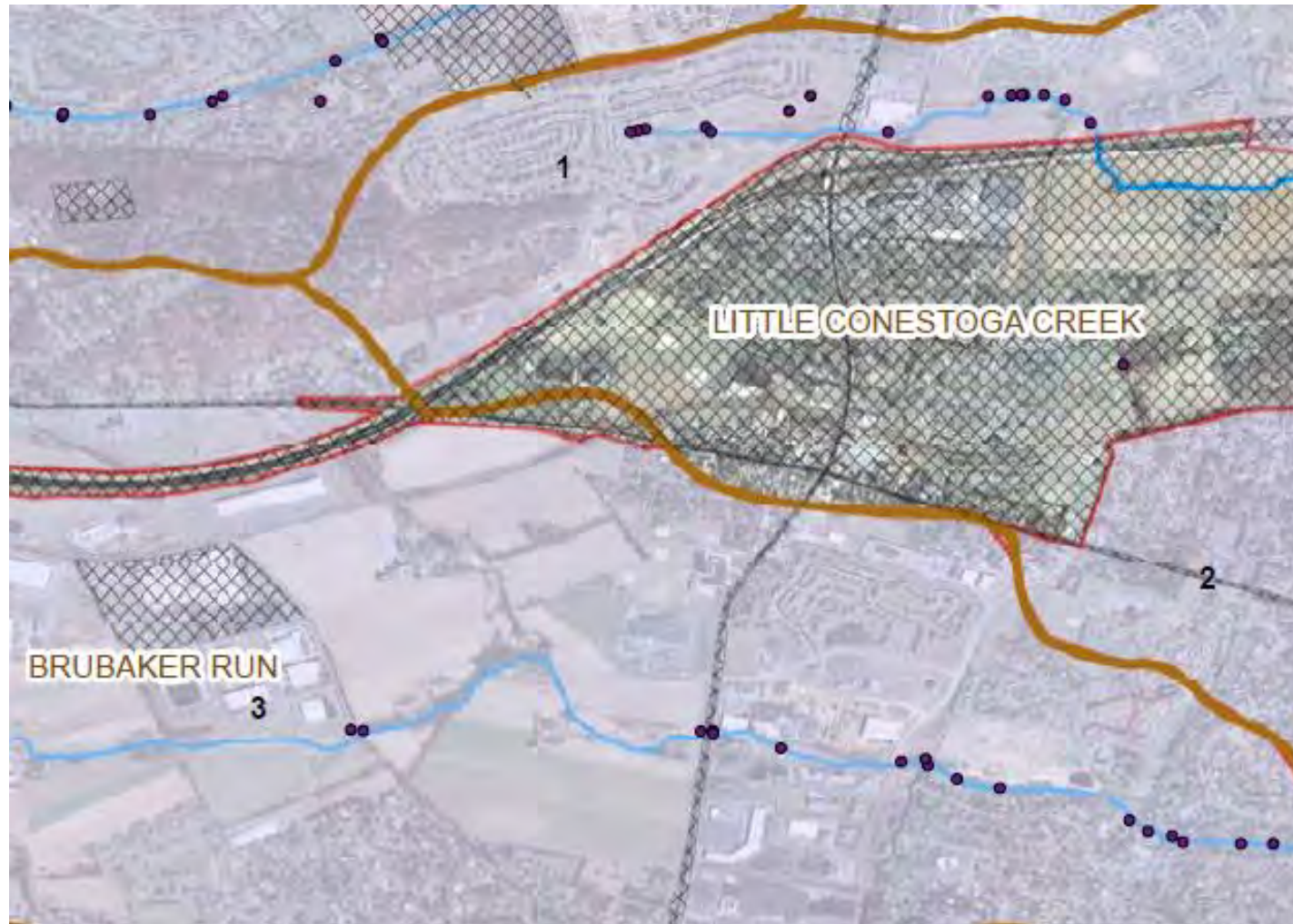
Drainage Area



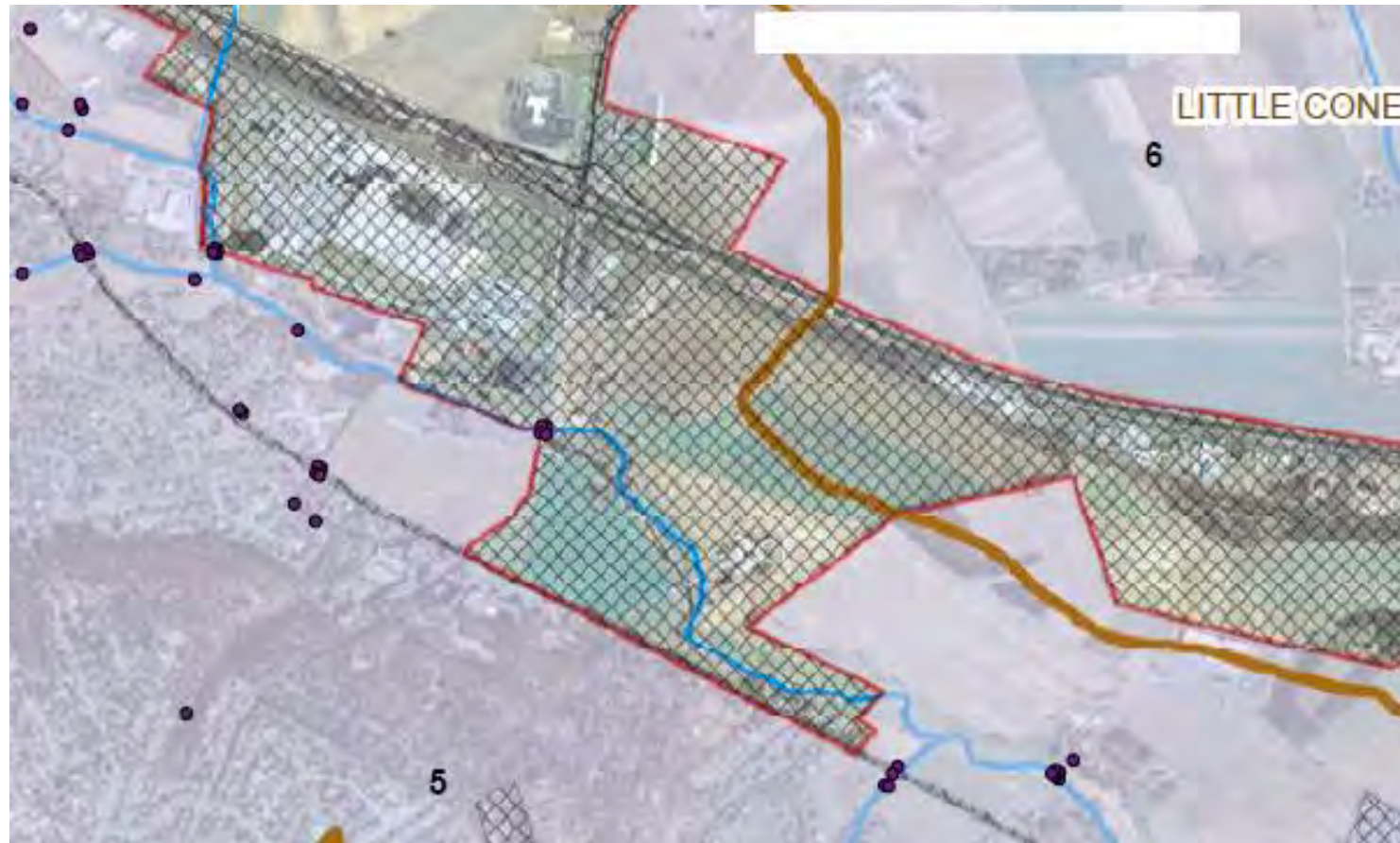
Planning Area Approach



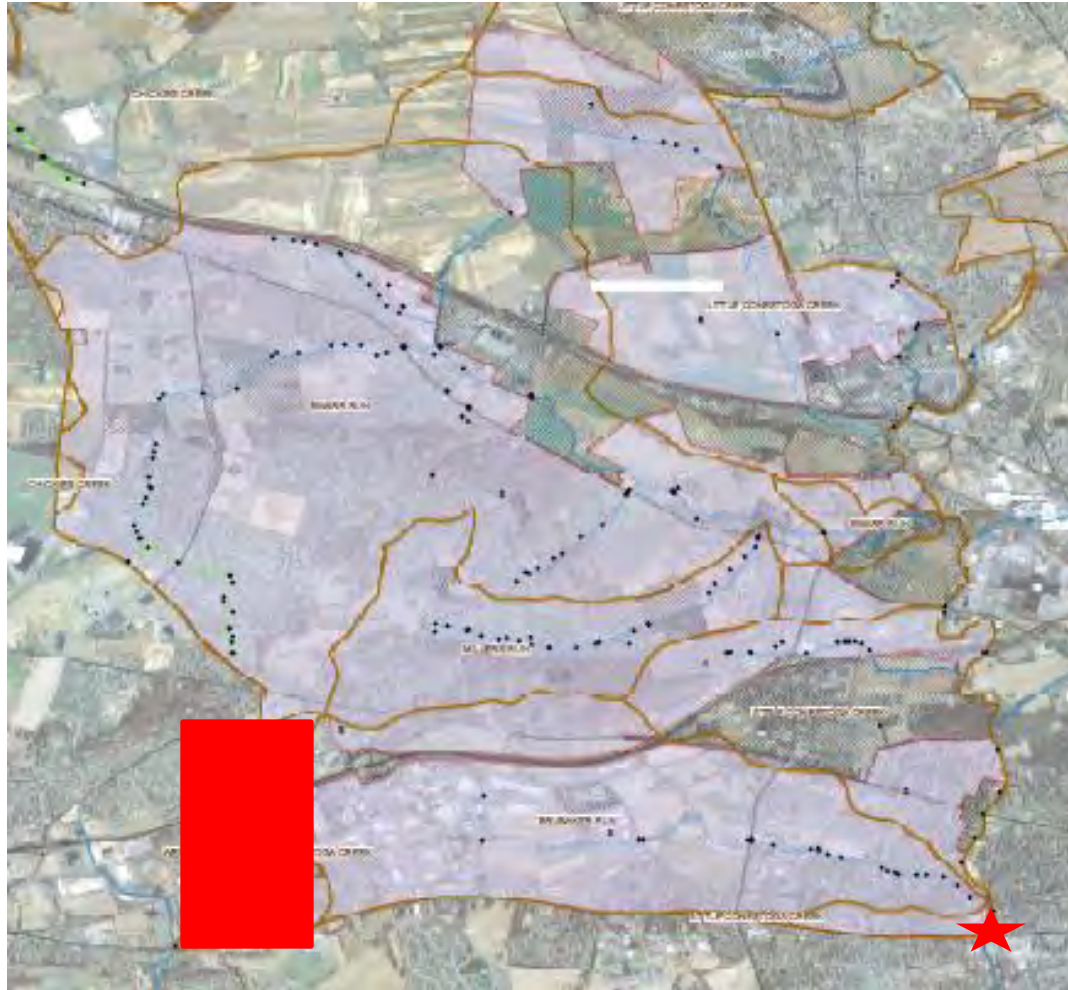
Planning Area Approach



Planning Area Approach



Planning Area Approach (Aggregate the loading)



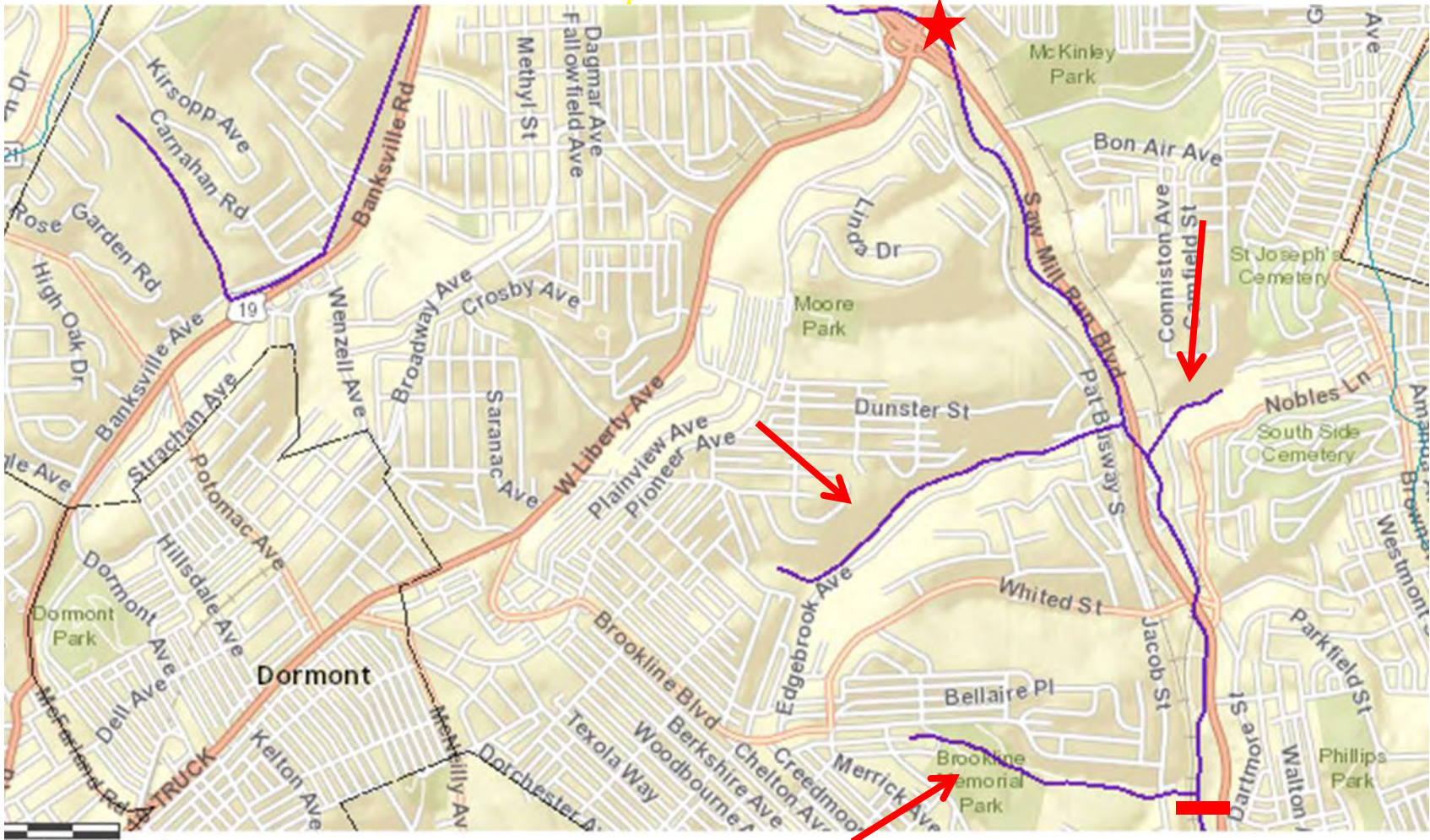
Planning Area Approach (Aggregated) – watershed-wide



Source: Dept. of Environmental Protection

E. DENISE SHEAN | TRIB TOTAL MEDIA

Aggregated Approach – sub-watersheds within a municipality



Required PRP Elements: Section A

A. **Public Participation.** The MS4 shall complete the following public participation measures listed below, and report in the PRP that each was completed.

- The applicant shall make a complete copy of the PRP available for public review.
- The applicant shall publish, in a newspaper of general circulation in the area, a public notice containing a statement describing the plan, where it may be reviewed by the public, and the length of time the permittee will provide for the receipt of comments. The public notice must be published at least 45 days prior to the deadline for submission of the PRP to DEP. **Attach a copy of the public notice to the PRP.**
- The applicant shall accept written comments for a minimum of 30 days from the date of public notice. **Attach a copy of all written comments received from the public to the PRP.**
- The applicant shall accept comments from any interested member of the public at a public meeting or hearing, which may include a regularly scheduled meeting of the governing body of the municipality or municipal authority that is the permittee.
- The applicant shall consider and make a record of the consideration of each timely comment received from the public during the public comment period concerning the plan, identifying any changes made to the plan in response to the comment. **Attach a copy of the permittee's record of consideration of all timely comment received in the public comment period to the PRP.**

For PRPs developed on a regional scale by multiple MS4 permittees or by co-permittees, the collaborating permittees may implement these public participation requirements as a joint effort as long as the notice of the availability of the PRP and the notice of a public meeting or hearing reaches the target audience groups of all permittees involved in the joint effort.

Required PRP Elements: Section A

Section A – Public Participation

Public participation is an essential part of the PRP because it enhances buy-in from landowners that may have an impact on pollutant discharges, can uncover missing elements or errors in calculations, and builds cooperative partnerships among the municipality and other entities.

A copy of the draft PRP was released via public notice on MONTH, DAY, YEAR to the following media outlets: _____. The notice ran for # days. A copy of the public notice is included as Item A-1.

The public was given 30 days to provide commentary on the contents of the PRP. A copy of all written public comments is included as Item A-2.

The MUNICIPALITY held a public meeting on MONTH, DAY, YEAR to receive verbal commentary on the contents of the PRP. A copy of the comments and the record of consideration is included as Item A-3.

The MUNICIPALITY used the public comments to update the draft PRP in the following ways:

_____.

Required PRP Elements: Section B

- B. **Map.** Attach a map that identifies **land uses and/or impervious/pervious surfaces** and the **storm sewershed boundary** associated with each MS4 outfall that discharges to impaired surface waters, or surface waters draining to the Chesapeake Bay (see note below), and calculate the storm sewershed area that is subject to Appendix D and/or Appendix E. In addition, the map must identify the proposed location(s) of structural BMP(s) that will be implemented to achieve the required pollutant load reductions.

The map may be the same as that used to satisfy MCM #3 of the PAG-13 General Permit, with the addition of land use and/or impervious/pervious surfaces, the storm sewershed boundary, and locations of proposed BMPs, or may be a different map.

The map must be sufficiently detailed to identify the “planning area” relevant to satisfying the requirements of Appendix D and/or Appendix E, and to demonstrate that BMPs will be located in appropriate storm sewersheds to meet the requirements. For a single MS4, the study area constitutes the combined storm sewersheds of all MS4 outfalls within the permittee’s jurisdiction. For MS4s participating in a joint PRP, the study area constitutes the combined sewersheds of all MS4 outfalls within the jurisdictions of all MS4s in the joint effort.

NOTE – Delineation of storm sewersheds associated with individual MS4 outfalls is typically necessary in order to determine the combined storm sewershed (i.e., planning area, the drainage areas of all MS4 outfalls that discharge to a specific surface water or to waters within the Chesapeake Bay watershed). The MS4 may display the storm sewershed for each MS4 outfall or just the combined storm sewershed, at its discretion. In cases where there are no local surface water impairments but the entire municipality is located in the Chesapeake Bay watershed, the map can display the entire storm sewershed within the municipality, without distinction between discharges to various local surface waters. In addition, a municipality entirely within the Chesapeake Bay watershed with no local surface water impairments may elect to consider the entire municipality as part of the storm sewershed, and calculate existing loading from the entire municipality.

Required PRP Elements: Section B

The map may show areas that are to be “parsed” from the planning area. In other words, at the MS4’s discretion (subject to DEP rules), certain areas may be shown on the map that are within the storm sewershed but are not included in the calculation of land area and existing pollutant loading. Guidance on parsing is contained in **Attachment A**. Note that if parsing is done, BMPs implemented within the parsed area will not count toward achieving pollutant reduction objectives.

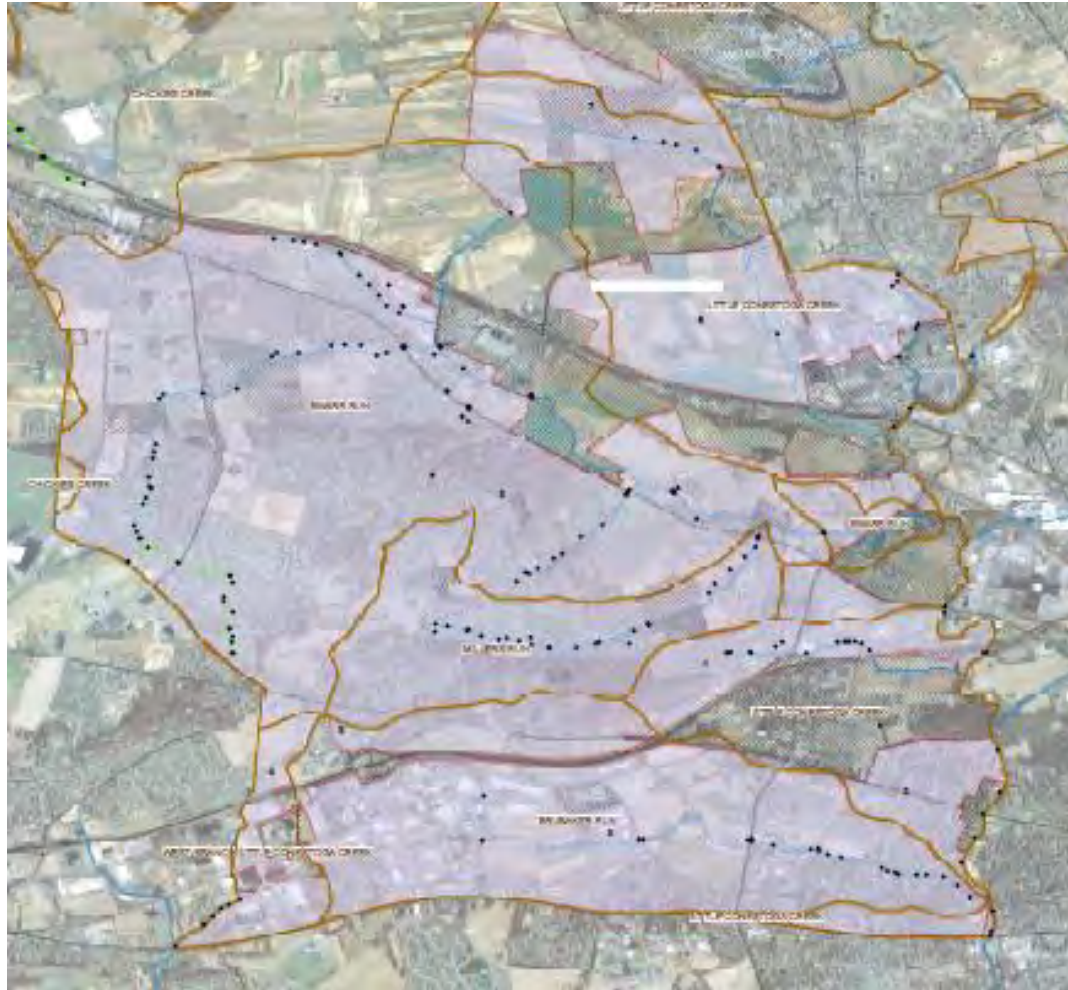
Required PRP Elements: Section B

Section B – Map

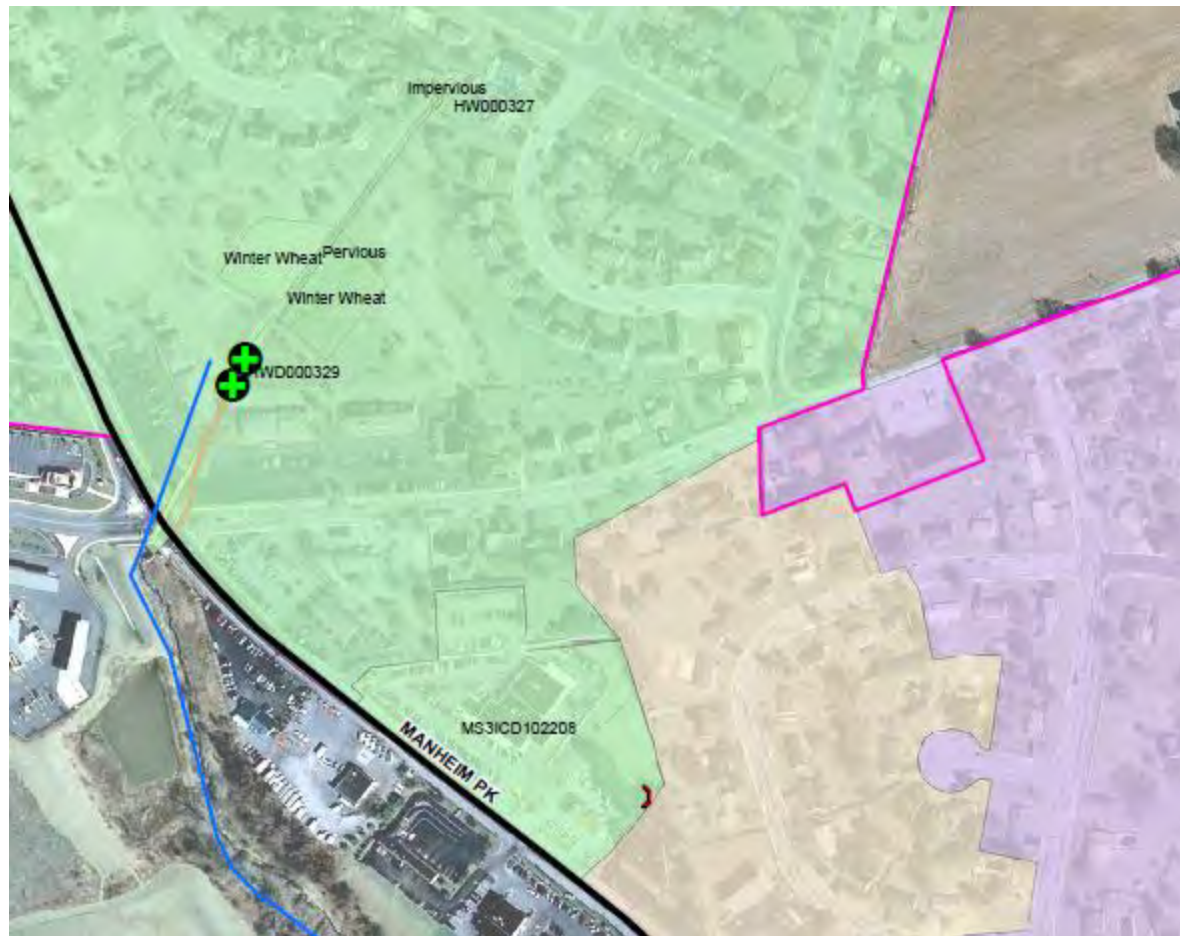
A map that identifies land uses and/or impervious surfaces and the storm sewershed boundary associated with each MS4 outfall that discharges to [impaired surface waters/surface waters draining to the Chesapeake Bay] is included as Item B-1. The map also includes existing structural best management practices (BMPs) that are being used as credit to reduce the existing pollutant loads, as well as the proposed location(s) of structural BMPs that will be implemented to achieve the required pollutant load reductions during the current permit cycle.

By looking at the map, one can see that the storm sewershed area that is subject to [Appendix D/Appendix E] is # acres in size. Of the total acreage, ___ acres lie within the Urbanized Area (UA) of the MS4, based on the 2010 U.S. Census data. The total impervious cover within the UA total ___ acres or ___ percent, based on the [Chesapeake Bay Program's 2010 impervious

Section B (Map Attachment)



Section B (Map Attachment)



Loading Area Considerations

- Can generate in a GIS platform, or hand-draw on a topographic map.
- Some water quality modeling programs (such a MapShed) are building a drainage area module into the program that delineates drainage areas for you.
- Other NPDES Permits (e.g. PennDOT MS4 Permit) should be parsed out (a.k.a. removed or delineated out from the MS3).
- A primary objective of mapping out loading areas is to determine the land area of the drainage area (e.g. acres)
- For a PRP, you want to spell out in the narrative your process (including how the land area was calculated).



Loading Area (delineated MS3) “mapped”

MS3-029 is 10.9 acres



Loading Area (delineated MS3) “parsing”



PennDOT R-O-W

MS3-029

- Gross area: 10.9 acres
- PennDOT parsed area: 0.7 acres
- Net area: $10.9 - 0.8 = 10.2$ acres

Loading Area (delineated MS3) “land types”



PennDOT R-O-W

MS3-029

- Total Area: 10.2 acres
- Impervious: 6.2 acres
- Pervious: 4.0 acres

Parsed Areas



Required PRP Elements: Section C

C. **Pollutants of Concern.** Identify the pollutants of concern for each storm sewershed (see Section I.B of these instructions).

I. General Information

A. **Terms:** The term “nutrients” refers to “Total Nitrogen” (TN) and “Total Phosphorus” (TP) unless specifically stated otherwise in DEP’s latest [Integrated Report](#). The terms “sediment,” “siltation,” and “suspended solids” all refer to inorganic solids and are hereinafter referred to as “sediment.”

B. **Pollutants of Concern and Required Reductions:** For all PRPs, MS4s shall calculate existing loading of the pollutant(s) of concern, in lbs/year; calculate the minimum reduction in loading, in lbs/year; select BMP(s) to reduce loading; and demonstrate that the selected BMP(s) will achieve the minimum reductions.

For Chesapeake Bay PRPs (Appendix D), the pollutants of concern are sediment, TN and TP and the minimum reductions in loading are 10%, 5% and 3%, respectively. Permittees are encouraged to select appropriate BMPs to achieve the 10% sediment loading reduction objective, as it expected that, overall within the Bay watershed, the TP (5%) and TN (3%) goals will be achieved when a 10% reduction in sediment is achieved.

For PRPs developed for impaired waters (Appendix E), the pollutant(s) are based on the impairment listing, as provided in the MS4 Requirements Table. If the impairment is based on siltation only, a minimum 10% sediment reduction is required. If the impairment is based on nutrients only or other surrogates for nutrients (e.g., “Excessive Algal Growth” and “Organic Enrichment/Low D.O.”), a minimum 5% TP reduction is required. If the impaired is due to both siltation and nutrients, both sediment (10% reduction) and TP (5% reduction) must be addressed.

Required PRP Elements: Section C

Section C – Pollutants of Concern

[if this is a CBPRP, use the following:] For any and all MS4 communities with discharges to one or more waterways of the Chesapeake Bay, the following pollutants may be of concern: sediment, total nitrogen (TN), and total phosphorus (TP). The table below shows each of the affected storm sewersheds within the MUNICIPALITY, and the pollutant(s) that are of concern to that area. The MUNICIPALITY will select BMPs to reduce the sediment pollutant load by 10 percent, which is understood to then reduce the TN and TP by 5 percent and 3 percent respectively.

Storm Sewershed	Pollutant(s) of Concern
Trib 64908 and 07579 to Swarr Run	Appendix D Nutrients, Siltation
Chickies Creek and Trib 07984 to Chickies Creek	Appendix D Nutrients, Siltation
Trib 07567 to West Branch Little Conestoga	Appendix D Nutrients, Siltation

Required PRP Elements: Section C

[if this is an impaired waters PRP, use the following:] Because the MUNICIPALITY discharges pollutants to a local impaired water, specifically WATERBODY NAME, it must reduce those pollutant loads. According to the impairment listing within the MS4 Requirements Table, the BOROUGH/TOWNSHIP must reduce SEDIMENT/TN/TP/PATHOGENS by X% [10 percent for siltation, 5 percent for nutrients, or 10 and 5 for both]. The table below shows each of the affected storm sewersheds within the MUNICIPALITY, and the pollutant(s) that are of concern to that area.

Storm Sewershed	Pollutant(s) of Concern
Swarr Run and Unnamed Tributaries to Swarr Run	Crop related ag – nutrients and siltation; grazing related ag – siltation; Urban runoff/storm sewers – cause unknown
Millers Run	Crop related ag – nutrients and siltation; grazing related ag – siltation; urban runoff/storm sewers – cause unknown
Brubaker Run	Crop related ag – nutrients and siltation; grazing related ag – siltation; urban runoff/storm sewers – cause unknown
Little Conestoga Creek	Crop related ag – nutrients and siltation; grazing related ag – nutrients and siltation;

Required PRP Elements: Section D

- D. **Determine Existing Loading for Pollutants of Concern.** Identify the date associated with the existing loading estimate (see Section I.C of these instructions). Calculate the existing loading, in lbs per year, for the pollutant(s) of concern in all storm sewersheds.

There are several possible methods to estimate existing loading, ranging from simplistic to very complex. One simple method to estimate existing loading that is acceptable to DEP is to determine the percent impervious and pervious surface within the urbanized area of the storm sewershed and calculate existing loading by multiplying the developed impervious and developed pervious land areas (acres) by pollutant loading rates (lbs/acre/year). Outside of the urbanized area, the MS4 may use loading rates for undeveloped land. Where structural BMPs are currently in place and are functioning, the existing loading estimate may be adjusted to account for pollutant reductions from those BMPs.

Required PRP Elements: Section D

Section D – Determine Existing Loading for Pollutants of Concern

[for CBPRP] The MUNICIPALITY has a total of ____ acres in its storm sewershed for surface waters draining to the Chesapeake Bay, ____ percent (____ acres) of which are impervious, ____ percent (____ acres) of which are pervious, and ____ percent (____ acres) of which are undeveloped. Because of this, the BOROUGH/TOWNSHIP must prepare a CBPRP and must follow Appendix D in the PAG-13 General Permit.

[for IWPRP] The MUNICIPALITY has a total of ____ acres in its storm sewershed for surface waters draining to the impaired waterbody (XYZ Creek), ____ percent (____ acres) of which are impervious, ____ percent (____ acres) of which are pervious, and ____ percent (____ acres) of which are undeveloped. Because of this, the BOROUGH/TOWNSHIP must prepare an impaired waters PRP and must follow Appendix E in the PAG-13 General Permit.

The existing loading estimates were calculated on MONTH, DAY, YEAR (date of NOI submission) using Attachment B of the PRP Instructions. The existing loading rates are as follows:

Category	Sediment Loading Rate (lbs/acre/yr)
Impervious developed	XXXX
Pervious developed	XXXX
Undeveloped	XXXX
TOTAL	XXXX

PADEP "Simplified Approach"

DEVELOPED LAND LOADING RATES FOR PA COUNTIES^{1,2,3}

County	Category	Acres	TN lbs/acre/yr	TP lbs/acre/yr	TSS (Sediment) lbs/acre/yr
Adams	impervious developed	10,373.2	33.43	2.1	1,398.77
	pervious developed	44,028.6	22.99	0.8	207.67
Bedford	impervious developed	9,815.2	19.42	1.9	2,034.34
	pervious developed	19,425	17.97	0.68	301.22
Berks	impervious developed	1,292.4	36.81	2.26	1,925.79
	pervious developed	5,178.8	34.02	0.98	264.29
Blair	impervious developed	3,587.9	20.88	1.73	1,813.55
	pervious developed	9,177.5	18.9	0.62	267.34
Bradford	impervious developed	10,423	14.82	2.37	1,880.87
	pervious developed	23,709.7	13.05	0.85	272.25
Cambria	impervious developed	3,237.9	20.91	2.9	2,155.29
	pervious developed	8,455.4	19.86	1.12	325.3
Cameron	impervious developed	1,743.2	18.46	2.98	2,574.49
	pervious developed	1,334.5	19.41	1.21	379.36
Carbon	impervious developed	25.1	28.61	3.97	2,177.04
	pervious developed	54.2	30.37	2.04	323.36
Centre	impervious developed	7,828.2	19.21	2.32	1,771.63
	pervious developed	15,037.1	18.52	0.61	215.84
Chester	impervious developed	1,838.4	21.15	1.46	1,504.78
	pervious developed	10,439.8	14.09	0.36	185.12
Lancaster	impervious developed	4,918.7	38.53	1.55	1,480.43
	pervious developed	21,649.7	22.24	0.36	190.93

PADEP “Simplified Approach”

DEVELOPED LAND LOADING RATES FOR PA COUNTIES^{1,2,3}

County	Category	Acres	TN lbs/acre/yr	TP lbs/acre/yr	TSS (Sediment) lbs/acre/yr
Adams	impervious developed	10,373.2	33.43	2.1	1,398.77
	pervious developed	44,028.6	22.99	0.8	207.67
Bedford	impervious developed	9,815.2	19.42	1.9	2,034.34
	pervious developed	19,425	17.97	0.68	301.22
Berks	impervious developed	1,292.4	36.81	2.26	1,925.79
	pervious developed	5,178.8	34.02	0.98	264.29
Blair	impervious developed	3,587.9	20.88	1.73	1,813.55
	pervious developed	9,177.5	18.9	0.62	267.34
Bradford	impervious developed	10,423	14.82	2.37	1,880.87
	pervious developed	23,709.7	13.05	0.85	272.25
Cambria	impervious developed	3,237.9	20.91	2.9	2,155.29
	pervious developed	8,455.4	19.86	1.12	325.3
Cameron	impervious developed	1,743.2	18.46	2.98	2,574.49
	pervious developed	1,334.5	19.41	1.21	379.36
Carbon	impervious developed	25.1	28.61	3.97	2,177.04
	pervious developed	54.2	20.27	0.84	222.26
All Other Counties	pervious developed	40,374.0	18.75	0.29	220.7
	impervious developed	-	23.06	2.28	1,839
	pervious developed	-	20.72	0.84	264.96
Lancaster	impervious developed	4,918.7	38.53	1.55	1,480.43
	pervious developed	21,649.7	22.24	0.36	190.93

Estimating the sediment load in the MS3



TSS loading from PADEP Att. B:

- Impervious dev.: 1,480.43 lbs/ac/yr
- Pervious dev.: 190.93 lbs/ac/yr

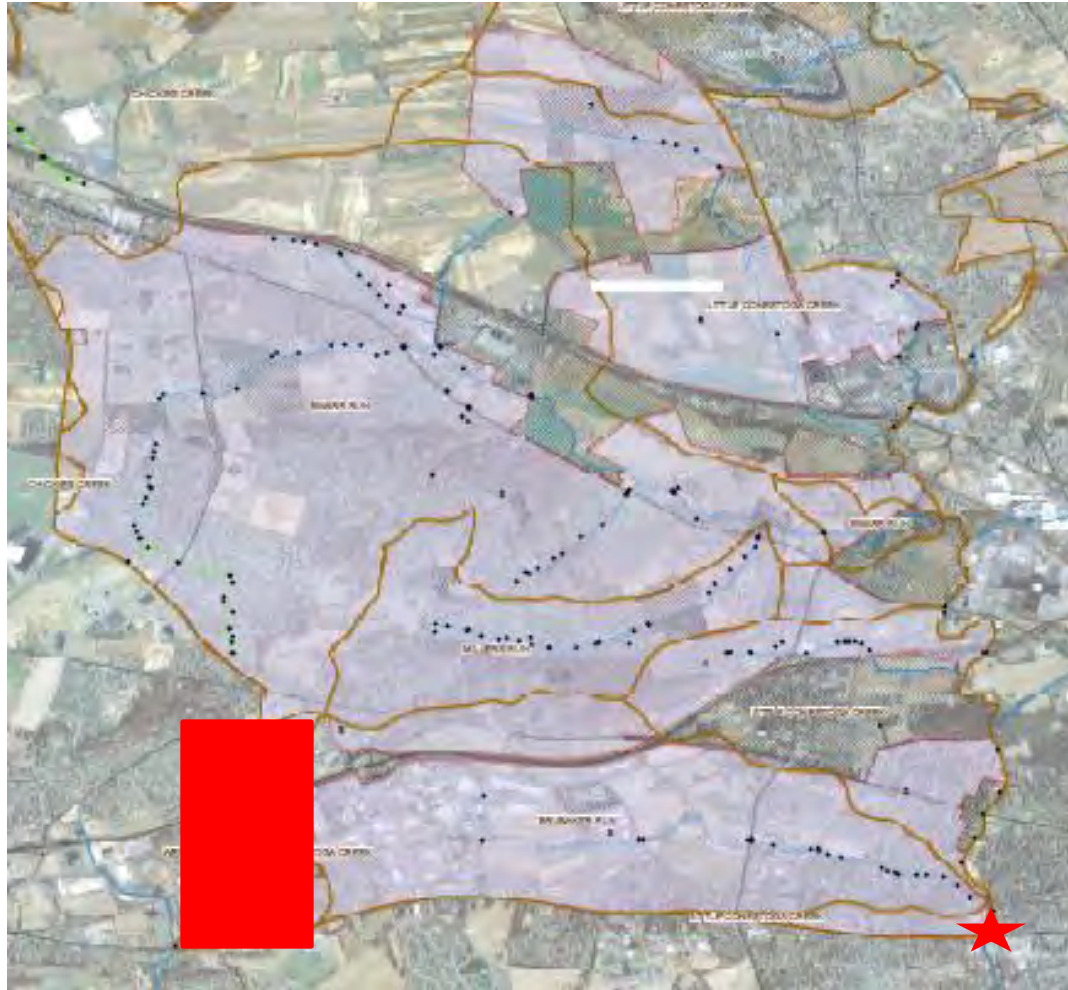
MS3-029

- Total Area: 10.2 acres
- Impervious: 6.2 acres
- Pervious: 4.0 acres

Loading calculations:

- Impervious:
 $1,480.43 \text{ lbs/ac/yr} \times 6.2 \text{ acres} = 9,178.67 \text{ lbs/yr}$
- Pervious:
 $190.93 \text{ lbs/ac/yr} \times 4.0 \text{ acres} = 763.72 \text{ lbs/yr}$
- Total sediment loading: $9,178.67 \text{ lbs/yr} + 763.72 \text{ lbs/yr} = 9,942.39 \text{ lbs/yr}$

Planning Area Approach (Aggregate the loading)



Required PRP Elements: Section D

	Mapshed	Simplified	Hybrid	Mapshed Stream
→ UA1	222,568	159,240.91	157,418	201,622
→ UA2	179,151	112,721.28	159,937	166,862
→ UA3	1,509,595	860,515.76	966,068	1,169,632
→ UA3B	1,234,652	144,342.89	146,832	1,169,632
UA4	198,319	108,105.71	115,417	148,757
→ UA5	3,822,345	2,364,350.98	2,349,488	3,020,864
→ UA6	731,346	392,380.86	249,282	401,021
UA7	612,286	317,627.24	60,567	250,434
Total	7,897,977	4,141,658	4,144,442	6,278,389

Aggregated Area loading (SM): ~4.033 million pounds of sediment

...need ~403,000 pound sediment reduction

Lime Spring Farm Development



Approximate 403,000 pound of sediment reduction required in aggregated area

Project provides approximately 168,000 pound reduction (~42%) to the township's overall reduction requirements

Required PRP Elements: Section D cont'd

MS4s may claim "credit" for structural BMPs implemented prior to development of the PRP to reduce existing loading estimates. In order to claim credit, identify all such structural BMPs in Section D of the PRP along with the following information:

- A detailed description of the BMP;
- Latitude and longitude coordinates for the BMP;
- Location of the BMP on the storm sewershed map;
- The permit number, if any, that authorized installation of the BMP;
- Calculations demonstrating the pollutant reductions achieved by the BMP;
- The date the BMP was installed and a statement that the BMP continues to serve the function(s) it was designed for; and
- The operation and maintenance (O&M) activities and O&M frequencies associated with the BMP.

The MS4 permittee may optionally submit design drawings of the BMP for previously installed or future BMPs with the PRP.

Legacy BMP's should be a focus here.

Required PRP Elements: Section D

Existing Structural BMPs

[where relevant, optional] The MUNICIPALITY is claiming credit for the following structural BMPs implemented prior to development of this PRP (installed between YEAR 1 and YEAR X) to reduce existing load estimates.

BMP 1	Bioretention basin, 1 acre in size
	Location = 40.1573° N, 76.3069° W
	#1 on storm sewershed map
	Permit number: G-105568
	Insert calculations demonstrating pollutant reductions from this BMP here
	Installed on 3/20/14. Basin still functions at target capacity due to regular O&M activities, described below.
	O&M activities include: basin inspection once per month, cleaning of inlet as needed, mowing and weed removal at least once per month, replacement of dead or diseased plants twice per year, replacement of mulch once per year.
 	
BMP 2	Stream restoration, 5,000 linear feet
	Location = 40.1634° N, 76.3950° W
	#2 on storm sewershed map

Required PRP Elements: Section D (and Section E)

Project #	Site	BMP	RR or ST	Runoff Storage (RS) (ac ft)	Impervious Area (IA) (ac)	(RS)(12)/IA (Min=0, Max=2.5)	Pervious Area (ac)
918	Rain Garden NW Side Stiegle	RG	RR	0.030	0.43	0.84	0.07
919	Rain Garden SE Side Stiegle	RG	RR	0.005	0.59	0.09	0.06
746	Basin retrofit at West End Ave	BR	RR	0.830	29.27	0.34	12.55
749&750	Bioswale at Fuller Drive	BSW	RR	0.175	15.57	0.13	1.73
478	Bioswale in Manheim	BSW	RR	0.055	3.12	0.21	2.55
1006	Basin retrofit at Laurel Rd in Manheim	BR	RR	0.290	15.00	0.23	45.00
874	Dry Basin in Rapho	BR	RR	0.265	7.73	0.41	35.23

Project #	N Removal %**	P Removal %**	Sediment Removal %**	N Load (lb)	P Load (lb)	Sediment Load (lb)	N Removal (lb)	P Removal (lb)	Sediment Removal (lb)	Sediment Removal (T)
918	57%	66%	71%	18.12	0.69	649.95	10.25	0.46	460.69	0.23
919	12%	14%	15%	23.99	0.93	878.46	2.77	0.13	129.38	0.06
746	35%	41%	44%	1,406.89	49.89	45,728.36	494.52	20.43	20066.91	10.03
749&750	16%	19%	21%	638.39	24.76	23,380.60	104.49	4.77	4826.10	2.41
478	24%	28%	31%	176.93	5.75	5,105.81	43.13	1.64	1558.13	0.78
1006	26%	31%	33%	1,578.75	39.45	30,798.30	415.25	12.11	10131.03	5.07
874	40%	46%	50%	1,081.35	24.66	18,170.19	431.40	11.47	9050.67	4.53

Section D and Section E Consideration

	All loads in lb/ yr		
	MapShed	Simplified	Alt. Simplified *
Baseline Load	3,099,641	781,344	781,344
10% Reduction	309,964	78,134	78,134
Memorial Park Reduction (2800 lf)	1,013,400.00	125,664.00	694,400.00
Length Required to Achieve 10%	200	1,744	315
% of 2800' reach	7%	62%	11%
Mapshed results vary with different iterations			

Required PRP Elements: Section E

- E. **Select BMPs To Achieve the Minimum Required Reductions in Pollutant Loading.** Identify the minimum required reductions in pollutant loading (see Section I.B of these instructions). Applicants must propose the implementation of BMP(s) or land use changes within the storm sewershed that will result in meeting the minimum required reductions in pollutant loading within the storm sewershed(s) identified by the MS4. These BMP(s) must be implemented within 5 years of DEP's approval of coverage under the PAG-13 General Permit, and must be located within the storm sewersheds of the applicable impaired waters, on either public or private property. If the applicant is aware of BMPs that will be implemented by others (either in cooperation with the applicant or otherwise) within the storm sewershed that will result in net pollutant loading reductions (i.e., typically not E&S BMPs to satisfy DEP's Chapter 102 requirements), the applicant may propose those BMPs within its PRP.

Historic street sweeping practices should not be considered in calculating credit for future practices. All proposed street sweeping practices may be used for credit if the minimum standard is met for credit (see 3800-PM-BCW0100m). In other words, if sweeping was conducted 1/month and will be increased to 25/year in the future, the MS4 does not need to use the "net reduction" resulting from the increased sweeping; it may take credit for the full amount of reductions from 25/year sweeping.

The names and descriptions of BMPs and land uses reported in the PRP should be in accordance with the Chesapeake Bay Program Model. The names and descriptions are available through [CAST](http://www.casttool.org) (log into www.casttool.org, select "Documentation," select "Source Data" and see worksheets named "Land Use Definitions" and "BMP Definitions").

Required PRP Elements: Section E

The MUNICIPALITY proposes the implementation of the following BMPs and land use changes within the storm sewershed to meet this pollutant load reduction. These BMPs will be implemented by MONTH, DAY, YEAR, which is five years from the Permit date.

	BMP/Land Use Name	BMP/ Land Use Description	% Pollutant Reduction
1	Streamside Forest Buffer	The MUNICIPALITY plans to work with a local watershed group to restore 1,000 linear feet of stream bank along ABC Creek. The sediment BMP effectiveness value is 44.88 lbs/ft.	1,000 ft x 44.88 lbs/ft = 44,880 lbs/yr
2	Bioswale	The BOROUGH/TOWNSHIP park, located next to ABC Creek, receives drainage from 5 acres of pervious developed land and 2 acres of impervious developed land. Stormwater currently flows through a 24-inch pipe but 100 feet of the pipe would be replaced by a bioswale for this project. The sediment BMP effectiveness value for a bioswale is 80 percent.	Impervious = 2 acres x _____ lbs/acre/yr x 0.80 (80%) = _____ lbs/yr Pervious = 5 acres x _____ lbs/acre/yr x 0.80 = _____ lbs/yr Total = _____
	Permeable Pavement	Permeable pavement has a high BMP effectiveness value and results in relatively high	3 acres x _____ lbs/acre/yr x 0.85

BMP Effectiveness

3800-PM-BCW0100m 5/2016
 BMP Effectiveness Values



COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 BUREAU OF CLEAN WATER

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS BMP EFFECTIVENESS VALUES

This table of BMP effectiveness values (i.e., pollutant removal efficiencies) is intended for use by MS4s that are developing and implementing Pollutant Reduction Plans and TMDL Plans to comply with NPDES permit requirements. The values used in this table generally consider pollutant reductions from both overland flow and reduced downstream erosion, and are based primarily on average values within the Chesapeake Assessment Scenario Tool (CAST) (www.casttool.org). Design considerations, operation and maintenance, and construction sequences should be as outlined in the Pennsylvania Stormwater BMP Manual, Chesapeake Bay Program guidance, or other technical sources. The Department of Environmental Protection (DEP) will update the information contained in this table as new information becomes available. Interested parties may submit information to DEP for consideration in updating this table to DEP's MS4 resource account, RA-EPPAMS4@pa.gov. Where an MS4 proposes a BMP not identified in this document or in Chesapeake Bay Program expert panel reports, other technical resources may be consulted for BMP effectiveness values. Note – TN = Total Nitrogen and TP = Total Phosphorus.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Wet Ponds and Wetlands	20%	45%	60%	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal.
				Dry Detention Ponds are depressions or basins created by excavation or berm

BMP Effectiveness

Estimating the sediment load in the MS3



TSS loading from PADEP Att. B:

- Impervious dev.: 1,480.43 lbs/ac/yr
- Pervious dev.: 190.93 lbs/ac/yr

MS3-029

- Total Area: 10.2 acres
- Impervious: 6.2 acres
- Pervious: 4.0 acres

Loading calculations:

- Impervious:
 $1,480.43 \text{ lbs/ac/yr} \times 6.2 \text{ acres} = 9,178.67 \text{ lbs/yr}$
- Pervious:
 $190.93 \text{ lbs/ac/yr} \times 4.0 \text{ acres} = 763.72 \text{ lbs/yr}$
- Total sediment loading: $9,178.67 \text{ lbs/yr} + 763.72 \text{ lbs/yr} = 9,942.39 \text{ lbs/yr}$

Wetlands BMP
10.2 acres x
974.7 lbs/ac/yr x
60% =
5,965 lbs/yr

Required PRP Elements: Section D (and Section E)

Project #	Site	BMP	RR or ST	Runoff Storage (RS) (ac ft)	Impervious Area (IA) (ac)	(RS)(12)/IA (Min=0, Max=2.5)	Pervious Area (ac)
918	Rain Garden NW Side Stiegle	RG	RR	0.030	0.43	0.84	0.07
919	Rain Garden SE Side Stiegle	RG	RR	0.005	0.59	0.09	0.06
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Project #	N Removal %**	P Removal %**	Sediment Removal %**	N Load (lb)	P Load (lb)	Sediment Load (lb)	N Removal (lb)	P Removal (lb)	Sediment Removal (lb)	Sediment Removal (T)
918	57%	66%	71%	18.12	0.69	649.95	10.25	0.46	460.69	0.23
919	12%	14%	15%	23.99	0.93	878.46	2.77	0.13	129.38	0.06
746	35%	41%	44%	1,406.89	49.89	45,728.36	494.52	20.43	20066.91	10.03
749&750	16%	19%	21%	638.39	24.76	23,380.60	104.49	4.77	4826.10	2.41
478	24%	28%	31%	176.93	5.75	5,105.81	43.13	1.64	1558.13	0.78
1006	26%	31%	33%	1,578.75	39.45	30,798.30	415.25	12.11	10131.03	5.07
874	40%	46%	50%	1,081.35	24.66	18,170.19	431.40	11.47	9050.67	4.53

Facility/BMP selection

- Basin retrofits
- Infiltration basins/trenches
- Filter strips
- Rain gardens
- Bioswales
- Permeable pavement
- Vegetated channels
- Street sweeping
- Hydrodynamic structures
- Flow-through facilities (filter strip/vegetated channel hybrid)
- Stream/floodplain restoration
- ...and so on



Required PRP Elements: Section E

NOTE – In calculating future pollutant loading the applicant must be cognizant of planned changes to land uses or BMPs. For example, if a tract of land (< 1 acre) currently in pasture will be converted within the next few years to residential land use, and there are no ordinances in place to control the rate, volume or quality of stormwater draining from the tract, the potential net increase in pollutant loading must be factored into the future loading estimate; this means that BMPs must be implemented on the tract or elsewhere within the storm sewershed to compensate for this change.

Required PRP Elements: Section F

- F. **Identify Funding Mechanism(s).** Prior to approving coverage DEP will evaluate the feasibility of implementation of an applicant's PRP. Part of this analysis includes a review of the applicant's proposed method(s) by which BMPs will be funded. Applicants must identify all project sponsors and partners and probable funding sources for each BMP. DEP does not expect that guaranteed sources are identified in the PRP, but does expect that applicants propose their preferred funding options with alternatives in the event the preferred options do not materialize.

If you use the simplified approach for calculating loadings...follow the \$47/lb (average) for each pound of sediment that needs reduced as the guidance for amount of funding needed to implement BMPs.

Required PRP Elements: Section F

1	XYZ Watershed Group matching grant, Chesapeake Bay Foundation volunteers, donated plant material from Joe Smith Nursery, DCNR TreeVitalize grant for trees
2	DCNR parks grant for planning and installation, PennVEST grant for matching funds
3	BOROUGH/TOWNSHIP tipping fees, corporate sponsorships, donation of materials from ABC Quarry
4	PennDOT regional office funds, BOROUGH/TOWNSHIP budget funds
5	BOROUGH/TOWNSHIP budget funds, local business tax

Required PRP Elements: Section G

G. **Identify Responsible Parties for Operation and Maintenance (O&M) of BMPs.** Once implemented the BMPs must be maintained in order to continue producing the expected pollutant reductions. Applicants must identify the following for each selected BMP:

- The party(ies) responsible for ongoing O&M;
- The activities involved with O&M for each BMP; and
- The frequency at which O&M activities will occur.

MS4 permittees will need to identify actual O&M activities in Annual MS4 Status Reports submitted under the General Permit.

Should include a discussion of the life cycle of a BMP to be implemented in this section...and how the end of life cycle will be handled.

Required PRP Elements: Section G

Section G – Identify Responsible Parties for Operation and Maintenance (O&M) of BMPs

All stormwater BMPs installed under this PRP are subject to the BOROUGH/TOWNSHIP stormwater management ordinance. The ordinance requires that the BMPs are inspected, at a minimum, [annually for the first five years, once every three years thereafter, and during or immediately after a 10-year or greater storm].

The Operation and Maintenance (O&M) activities for each BMP are included in the table below. If the BMP is located on private land, the landowner must convey an easement to the BOROUGH/TOWNSHIP to allow for access for periodic inspections and maintenance, as needed. Actual O&M activities will be listed in the Annual MS4 Status Report sent to the PADEP under the General Permit.

BMP #	Parties Responsible for O&M	O&M Activities	Frequency for O&M Activities
1	BOROUGH/TOWNSHIP Public Works Director, maintenance staff	Inspection, mowing and weeding, plant replacement, rip-rap maintenance	Monthly for inspection and mowing; at least twice annually for plant replacement and rip-rap work
2	BOROUGH/TOWNSHIP Director of Parks and Recreation, park maintenance staff, volunteers	Inspection, mowing and weeding, plant replacement, mulch replacement, inlet cleaning	Monthly for inspection, mowing, and inlet cleaning; at least twice annually for plant replacement;

Recommended PRP Attachments

- Copy of public notice, meeting minutes, etc. associated with the public comment and response period (if a high number of public comments are received, would attach in lieu of inserting into the first section of the PRP).
- Map(s)
- Implementation Schedule
- Calculations for loadings and reductions
- Calculations for BMPs
- BMP Inventory (spreadsheet)
 - Type, location, O&M references, performance notes, etc.

Table 6. Sediment Waste Load Allocations for MS4 Designated Areas within Little Run

Pollutant Source	Acres	Unit Area Loading Rate (lbs/ac/yr)		Pollutant Loading (lbs/yr)	
		Current	Allowable	Current	Allowable (WLA)
Hay/Pasture	814.00	76.66	59.19	62,401.24	48,180.66
Cropland	2,758.00	1,267.93	533.18	3,496,950.94	1,470,510.44
Developed	2,010.00	89.12	449.51	179,131.20	903,511.10

From Table 6:

WLA (sediment) = 351,495 lbs/yr (sewer discharge) + 2,422,202.20 lbs/yr (MS4)

WLA (sediment) = 2,773,697.20 lbs/yr

Individual MS4 Permit (WLA (MS4) Reduction)

Table 1-3 Sawmill Run Sediment TMDL MS4 Waste Load Allocation Summary

Municipality	Existing Load (tons/yr)	Allocated Load (tons/yr)	Percent Reduction
Baldwin Borough	1.1	0.3	72.1%
Baldwin Township	62.5	17.3	72.4%
Bethel Park Borough	119.0	32.6	72.6%
Brentwood Borough	73.7	20.3	72.5%
Castle Shannon Borough	191.8	51.9	73.0%
Crafton Borough	0.3	0.1	72.7%
Dormont Borough	92.2	24.5	73.4%
Green Tree Borough	55.4	14.8	73.2%
Ingram Borough	0.3	0.1	72.7%
Mt. Lebanon Township	297.8	84.1	71.8%
Mt. Oliver Borough	5.6	1.5	72.7%
Pittsburgh City	1,299.6	357.8	72.5%
Scott Township	7.7	2.1	72.6%
Whitehall Borough	220.6	61.4	72.2%
TOTAL	2,427.6	668.9	72.4%

TMDL Plan – Combine PRP and TMDL Plans

Combining TMDL Plans and PRPs: MS4s with multiple TMDL Plan development obligations may develop one TMDL Plan for submission to DEP, if desired. If this is done, MS4s may elect to address each TMDL water separately or in combination. If done in combination, the MS4 has flexibility when locating BMPs between the TMDL Planning Areas. If the MS4 elects to meet the percent reduction requirements (10% sediment or 5% TP) in lieu of meeting the WLA(s) within the first permit term, it may elect to reduce pollutants by a greater percentage in one TMDL Planning Area over another, as long as the overall reduction for the planning effort achieves the percent reduction requirements.



"Well, maybe we could eliminate one of our
Departments of Redundancy."

General Guidelines for MS4 Collaborative Efforts

- Written agreement (Intergovernmental Cooperation Agreement)
- Scope of agreement
 - Complete PRP implementation or individual BMP implementation)
- Roles and responsibilities
 - Project selection process, contracting and/or consultant selection processes, long-term O&M, adaptive management, etc.
- Allocations of cost and pollutant reductions
 - Methodologies described
- Schedule (timeline(s) for implementation)
- Other ICL agreement requirements

As long as BMPs are implemented in MS4 planning area(s) and address the pollutant(s) of concern, the pollutant reductions afforded by the BMPs may be shared between collaborating MS4s.

Joint Watershed Approach



Source: Dept. of Environmental Protection

E. DENISE SHEAN | TRIB TOTAL MEDIA

Joint Approach Considerations

- Do not need to a joint permit*
- Contiguous municipalities is not an absolute requirement...watershed relationship plays a role
- Share of costs breakdown that has been gaining steam is:
 - Share is based on the percent of the loading and reduction requirement of an individual municipality as an overall share of the loadings and reductions of all the joint partners.

*May be appropriate to consider for a joint individual permit



Joint Approach – share of costs & reductions

Say you have a \$200,000 project in a HUC-10 watershed that provides a reduction of 30,000 pounds of sediment, and three municipalities will jointly plan and implement the joint project. The following table shows how they are assigning “credits,” and it is directly proportional to the amount of money thrown into the pot by an individual municipality:

	Cost Contribution	Sediment Reduction “Credits”
TOTAL	\$200,000	30,000 lbs/yr
Municipality A	\$100,000 (50% of total)	15,000 lbs (50% of total)
Municipality B	\$40,000 (20%)	6,000 lbs (20%)
Municipality C	\$60,000 (30%)	9,000 lbs (30%)

TMDL Plan – Offsetting

Offsets. An MS4 may propose stormwater pollutant reduction BMPs outside of the TMDL and/or PRP Planning Area for possible approval as offsets toward meeting TMDL and/or PRP load reduction requirements. Such projects must be located within the jurisdiction of the developer of the TMDL Plan and/or PRP, and treat or manage stormwater that would drain to the impaired waters of interest under a TMDL Plan or PRP. In all cases where offsets are proposed, an individual permit is required.



Final Thoughts and Questions?

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