POLLUTANT REDUCTION PLAN

Wilson Borough
Northampton County, Pennsylvania

In Compliance with the Pennsylvania Department of Environmental Protection's National Pollutant Discharge Elimination System Phase II MS4 Program Permit No. PAI 132230

DRAFT COPY FOR PUBLIC COMMENT

Prepared For:
Wilson Borough
2040 Hay Terrace
Easton, PA 18042-4617

Prepared By:
T&M Associates

January 2018
Revised May 2018
Revised December 2023

Project No. WILS 00020

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Foreword

This Pollutant Reduction Plan (PRP) serves to fulfill the requirements of Appendix D of NPDES PAI-132230 for Wilson Borough. In accordance with the "MS4 Requirements Table" Wilson Borough must create a PRP due to discharges from their MS4 to the Lehigh River, which has been listed as impaired for Siltation. (See Appendix – Table 5)

This plan has been completed using publicly available data and data supplied by Wilson Borough.

While this plan aims to provide guidance towards the construction and implementation of stormwater quality Best Management Practices (BMPs) to provide pollutant loading reductions, it should be noted that this is a fluid document that will be evaluated and updated periodically as specific proposed locations and types of BMPs are analyzed and designed, as new opportunities for partnerships are realized, and as revised regulations and BMPs are developed and implemented.

The Pollution Reduction Plan (revised May 2018) that was approved as part of NPDES PA1-132230 (effective July 1, 2019), is being updated due to various issues encountered during implementation of the BMPs proposed in the May 2018 PRP. These issues include discontinuance of the Treevitalize Grant, land ownership issues and site constraints realized during the design process.

This revised PRP includes new BMPs which will help Wilson Borough achieve its sediment reduction requirement. Wilson Borough and T&M Associates have been in contact with DEP and have received guidance from DEP in regards to updating this plan.

Based on the PA DEP "Pollutant Reduction Plan (PRP) Instructions" (revised 03-2017), the PRP shall include the following elements:

A. Public Participation
B. Land Use and Storm Sewershed Boundary Map
C. Identification of Pollutants of Concern
D. Determination of Existing Loading for Pollutants of Concern
E. Selection of BMPs Proposed to Achieve the Minimum Required Reduction In Pollutant Loading
F. Identification of Funding Mechanisms
G. Identification of Responsible Parties for Operation and Maintenance (O&M) of BMPs

Section A – Public Participation

PA DEP Requirement: *"The applicant shall make a complete copy of the PRP available for public review"*

A complete copy of the revised PRP is available for review by the public at the following locations:

- On the Wilson Borough website at https://wilsonborough.org/category/stormwater-quality
- At the Wilson Borough offices at 2040 Hay Terrace, Wilson Borough PA 18042

PA DEP Requirement: "*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 required public notice will be printed in the Express Times (paper and digital) on January 30, 2024. A copy of the public notice and proof of publishing is attached in the Appendix.

PA DEP Requirement: *"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****."*

Written comments will be received from January 30, 2024 to February 29, 2024. A copy of all written comments received from the public will be attached in the Appendix.

PA DEP Requirement: *"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."*

Verbal comments will be accepted from the public at the regularly scheduled Borough Council meeting on February 13, 2024. A copy of all verbal comments and the public meeting minutes will be attached in the Appendix.

PA DEP Requirement: "*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****."*

All written and verbal public comments received by the Borough during the public comment period will be considered and a written response to each comment will be provided in the Appendix.

Section B – Map

PA DEP Requirement: "*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 MS4 may display the storm sewershed for each MS4 outfall or just the PRP Planning Area, at its discretion."*

The following maps are attached in the Appendix:

1. Figure 1 - A revised map showing the PRP planning area and current land covers
2. Figure 2 - A revised map showing the PRP planning area and the location of the existing structural BMPs.
3. Figure 3 - A revised map showing the planning area and the locations of structural BMPs proposed to meet the minimum required reductions in pollutant loading.

Section C – Pollutants of Concern

PA DEP Requirement: "*Identify the pollutants of concern for each storm sewershed or the overall PRP Planning Area (see Section I.B of these instructions)."*

Since this PRP is being developed for impaired waters, the pollutants are based on the impairment listing provide in PA DEPs MS4 Requirements Table (included in the Appendix as Table 5) which references "siltation" for the Lehigh River. The pollutant of concern for siltation is Total Suspended Solids (TSS).

Section D – Determine Existing Loading for Pollutants of Concern

PA DEP Requirement: *"Identify the date associated with the existing loading estimate (see Section I.C of these instructions)"*

The date of the of the development of this PRP is January 2018, with a revision date of December 2023.

PA DEP Requirement: "*Calculate the existing loading, in lbs. per year, for the pollutant(s) of concern in the PRP Planning Area."*

The planning area assessed in this PRP consists of the urbanized area in Wilson Borough which drains to the impaired watercourse (the Lehigh River) excluding PennDOT right-of-way's. The loading rates for pervious and impervious cover for Wilson Borough are provided in the PADEPs "PRP Instructions" in Attachment B, "Developed Land Loading Rates for PA Counties" under the "Other Counties" Section (Table 8 in the Appendix)

Table 1. "Other Counties" Pollutant Loading Rates

Pollutant and Source	Loading Rate (lbs./ac/yr.)
TSS Impervious developed	1,839
TSS Pervious Developed	264.96

The impervious and pervious developed areas covered by the planning area were derived using the "High-Resolution Land Cover, Commonwealth of Pennsylvania, Chesapeake Bay Watershed and Delaware River Basin, 2013" provided by the University of Vermont Spatial Analysis Laboratory for land-cover mapping and modeling initiatives in the Chesapeake Bay Watershed and Delaware River Basin.

The land covers within the planning area were compiled into impervious and pervious surfaces as shown in Table 2.

Table 2. Assignment of Land Covers as Impervious or Pervious

Impervious	Pervious
Barren	Low Vegetation
Other Impervious Surfaces	Scrub-Shrub
Roads	Tree Canopy
Structures	Wetlands (emergent)
Tree Canopy Over Other Impervious Surfaces	
Tree Canopy Over Roads	
Tree Canopy Over Structures	

Table 3 shows the breakdown of the different land covers within the PRP planning area, and the sum of the impervious and pervious areas.

Table 3. Land Cover within the Planning Area

Land Cover	Area (ft^2)	Area (Ac)
Barren	146,604.5	3.4
Low Vegetation	3,002,264.0	68.9
Other Impervious Surfaces	2,398,312.1	55.1
Roads	746,523.3	17.1
Scrub-Scrub	0	0
Structures	2,401,439.9	55.1
Tree Canopy	2,482,658.8	57.0
Tree Canopy Over Other Impervious Surfaces	283,738.0	6.5
Tree Canopy Over Roads	121,236.7	2.8
Tree Canopy Over Structures	22,988.7	0.5
Wetlands (emergent)	0	0
TOTAL	11,606,721.2	266.4
Total Impervious	6,120,843.3	140.5
Total Pervious	5,484,922.9	125.9

The existing loading of TSS for the planning area was calculated in Table 4.

Table 4. Existing Pollutant Loading of TSS

Pollutant and Source	Loading Rate (lbs./ac/yr.)	Area (Ac)	Annual Load (lbs./yr.)	Annual Load (Ton/yr.)
TSS Impervious developed	1,839	140.5	258,379.5	129.2
TSS Pervious Developed	264.96	125.9	33,358.46	16.7
		Total TSS Load	**291,738.0**	**145.9**

In accordance with PADEP's "PRP Instructions," the Borough may claim 'credit' for existing structural BMPs to reduce the existing sediment load estimate. Please find attached in the Appendix, Figure 2, which shows the location of existing structural BMPs within the PRP planning area. The drainage area treated by each existing BMP was delineated and the amount of pervious and impervious land cover in each drainage area was determined in the same manner as the planning area. Table 6 (attached in the Appendix) provides the required information for existing structural stormwater BMPs within the planning area and the pollutant reduction they provide. The total annual credit generated by the existing BMP's equals 19,166.1 lbs./year (9.6 tons).

Taking the annual credit for existing basins into account, the existing TSS load from the planning area is calculated as:

291,738.0 lbs./yr. – 19,166.1 lbs./yr. = **272,571.9 lbs./yr. (136.3 tons/yr.)**

As part of the Borough's ongoing MS4 program, inspections of the existing stormwater BMPs will be completed by the Borough to verify that each BMP listed in Table 6 continues to serve the function(s) it was designed for. If it is determined during these inspections that any of the existing BMPs are not functioning properly, maintenance will be performed to correct the problem(s) or this BMP will be removed from the credit calculations and the proposed BMPs and reduction calculations will be revised accordingly.

Operation and Maintenance (O&M) for the different types of existing BMPs is as follows:

Dry Basins and Dry Extended Detention Basins

Maintenance is necessary to ensure proper functionality of the extended detention basin and should take place on a quarterly basis. A basin maintenance plan should be developed which includes the following measures:

- All basin structures expected to receive and/or trap debris and sediment should be inspected for clogging and excessive debris and sediment accumulation at least four times per year, as well as after every storm greater than 1 inch.
- Structures include basin bottoms, trash racks, outlets structures, riprap or gabion structures, and inlets.
- Sediment removal should be conducted when the basin is completely dry. Sediment should be disposed of properly and once sediment is removed, disturbed areas need to be immediately stabilized and revegetated.
- Mowing and/or trimming of vegetation should be performed as necessary to sustain the system, but all detritus should be removed from the basin.
- Vegetated areas should be inspected annually for erosion.
- Vegetated areas should be inspected annually for unwanted growth of exotic/invasive species.
- Vegetative cover should be maintained at a minimum of 95 percent. If vegetative cover has been reduced by 10%, vegetation should be reestablished.

Subsurface Infiltration Basin

This following represents the recommended maintenance for subsurface infiltration basins:

- All catch basins and inlets should be inspected and cleaned at least 2 times per year.
- The overlying vegetation of subsurface infiltration features should be maintained in good condition and any bare spots revegetated as soon as possible.
- Vehicular access on subsurface infiltration areas should be prohibited and care should be taken to avoid excessive compaction by mowers. If access is needed, use of permeable, turf reinforcement should be considered.

Section E – Select BMPs to Achieve the Minimum Required Reductions in Pollutant Loading

PA DEP Requirement: *"Identify the minimum required reductions in pollutant loading" "If the impairment is based on siltation only, a minimum 10% sediment reduction is required."*

As stated above, PA DEPs MS4 Requirements Table references "siltation" for the Borough's impaired watercourse (the Lehigh River). Therefore, the Borough's minimum required sediment reduction is 10%.

Therefore, the Borough's minimum required reduction is:

272,571.9 lbs./yr. x 0.10 = **27,257.2 lbs./yr. (13.6 tons/yr.)**

In order to meet their required reduction, Wilson Borough is proposing 10 potential BMPs. Some of the proposed BMPs have already been completed as indicated below, and the remaining proposed BMPs will be implemented until the Borough is able to achieve the required reduction. Tables 7 lists the BMPs proposed to meet the required reduction. Their locations are shown on Figure 3 attached in the Appendix. The proposed BMPs include:

1. Storm Sewer System Solids Removal *(completed annually)*
   a. This consists of cleaning the existing storm sewer system along Borough Roads and within Borough owned parking lots located within the PRP Planning Area. The Borough documents the actual weight of sediment removed.
2. Tree Planting – (*completed)*
   a. Through the Tree Pennsylvania Program, the Borough has planted 37 street trees along Borough roads located within the PRP area.
3. Tree Planting – Lidl Grocery Store Redevelopment *(completed)*
   a. 188 trees were planted in 2018 as part of a redevelopment at 25th Street and Freemansburg Avenue (Lidl Grocery). These trees are above and beyond the trees required for the NPDES permit for this site and therefore have been counted towards sediment reduction for the PRP.
4. Retentive Grading
   a. This will consist of installing retentive grading on Borough owned property in two locations. The grading will function to divert, slow down and retain stormwater flows in order to promote infiltration.
5. Roadside Swale – Firmstone Street
   a. Approximately 150 LF vegetated open channel will be installed along Firmstone Street near the intersection with Iron Street. The existing asphalt curb will be removed along the southern side of Firmstone to allow overland flow to enter the swale. The swale will be designed to slow runoff, promote infiltration, and filter out sediments during the process of conveying runoff.
6. Constructed Filter
   a. This will consist of installing constructed filters on two properties located within the PRP planning area. The constructed filter will work as "filtering practices" to capture, temporarily store, and pass runoff through an organic media filter.
7. Raingarden
   a. This will consist of two raingardens to be installed on Borough owned properties. Both locations contain type B soils. The raingardens will function by retaining water which will facilitate filtering and settling of suspended solids and sediment.

Section F – Identify Funding Mechanisms

PA DEP Requirement: "*Applicants must identify all project sponsors and partners and probable funding sources for each BMP.*"

The majority of the proposed BMPs will be completed as using Borough funds and Borough workforce. Two of the BMP's will be completed by developers as part of redevelopment projects.

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

PA DEP Requirement: "*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."*

The property owner of 818 S. 25th Street will be responsible for O&M of the proposed constructed filter adjacent to their parking lot (Proposed BMP P9). All other proposed BMPs will be owned and maintained by Wilson Borough once they are implemented.

O&M activities for the proposed/new BMPs are as follows:

Retentive Grading

Retentive grading has low to moderate maintenance requirements depending on the design. A maintenance plan should be developed which includes the following measures:

- Regularly inspect to ensure they are infiltrating; monitor drawdown time after a major storm event.
- If planted in turf grass, maintain by mowing. Other vegetation will require less maintenance. Trees and shrubs may require annual mulching, while meadow planting requires annual mowing and clippings removal.
- Routinely remove accumulated trash and debris.
- Remove invasive plants as needed.
- Inspect for signs of flow channelization; restore gradient immediately after deficiencies are observed.

Vegetated Open Channel

Maintenance is necessary to ensure proper functionality of the vegetated open channel and should take place on a regular basis. A maintenance plan should be developed which includes the following measures:

- Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when > 3 inches at any spot or covering vegetation).
- Inspect vegetation on side slopes for erosion and formation of rills or gullies, correct as needed.
- Inspect for pools of standing water. Dewater and discharge to an approved location and restore to design grade.
- Mow and trim vegetation to ensure safety, aesthetics, proper open channel operation, or to suppress weeds and invasive vegetation; dispose of cuttings in a local composting facility; mow only when channel is dry to avoid rutting.
- Inspect for litter and remove prior to mowing.
- Inspect for uniformity in cross-section and longitudinal slope. Correct as needed.
- Inspect channel inlet (curbs cuts, pipes, etc.) and outlet for signs of erosion or blockage. Correct as needed.

Constructed Filter

Filters require regular inspection and maintenance in order to maintain the integrity of the filtering system. Inspection of the filter is recommended at least four times a year. A filter maintenance plan should be developed which includes the following measures:

- Remove trash and debris as necessary.
- Scrape silt with rakes.
- Till and aerate filter area.

- Replace filtering medium if scraping/removal has reduced depth of filtering media.

Raingarden

Raingardens require regular maintenance. A raingarden maintenance plan should be developed which includes the following measures:

- While vegetation is being established, pruning and weeding may be required.
- Detritus may also need to be removed every year. Perennial plantings may be cut down at the end of the growing season.
- Mulch should be re-spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.
- Bioretention areas should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
- During periods of extended drought, bioretention areas may require watering.
- Trees and shrubs should be inspected twice per year to evaluate health.

APPENDIX

INSERT PROOF OF PUBLISHING OF THE PUBLIC COMMENT PERIOD PRIOR TO SUBMISSION TO PA DEP

INSERT PUBLIC COMMENTS AND RESPONSES PRIOR TO SUBMISSION TO PADEP

PRP PLANNING AREA

BOROUGH BOUNDARY

GRAPHIC SCALE
400 0 200 400 800
(IN FEET)
1 inch = 400 ft.

NO.	BY	REVISIONS	DATE
1	RAM	FOR UPDATED PRP	12/20/2023

MONICA L. WALL, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 082236
12/20/2023
DATE

POLLUTION REDUCTION PLAN

NPDES PHASE II MS4 PROGRAM
PAI 132230
WILSON BOROUGH, NORTHAMPTON COUNTY, PENNSYLVANIA

FIGURE 1
LAND USES AND PRP PLANNING AREA

YOUR GOALS. OUR MISSION.
74 WEST BROAD STREET,
SUITE 300
BETHLEHEM, PA 18018
TEL 610-625-2999
FAX 610-625-2969
www.tandmassociates.com

OFFICES LOCATED IN:
DELAWARE, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA

DESIGNED BY	RAM
CHECKED BY	MLW
DRAWN BY	RAM
DATE	02/01/2018
SCALE	1" = 400'
PROJ. NO.	WILS00020

DRAWING

SHEET 1 OF 3

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NORTH

EXISTING STORMWATER MANAGEMENT BASIN (B_)

PRP PLANNING AREA

BOROUGH BOUNDARY

GRAPHIC SCALE

400 0 200 400 800

(IN FEET)
1 inch = 400 ft.

NO.	BY	REVISIONS	DATE
1	RAM	FOR UPDATED PRP	12/20/2023

MONICA L. WALL, P.E.
LICENSED PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 062236

12/20/2023
DATE

POLLUTION REDUCTION PLAN

NPDES PHASE II MS4 PROGRAM
PAI 132230
WILSON BOROUGH, NORTHAMPTON COUNTY, PENNSYLVANIA

FIGURE 2
EXISTING STORMWATER MANAGEMENT BASINS

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DESIGNED BY	RAM
CHECKED BY	MLW
DRAWN BY	RAM
DATE	02/01/2018
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SHEET	2 OF 3

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PROPOSED BMPs

PRP PLANNING AREA

BOROUGH BOUNDARY

GRAPHIC SCALE

400 0 200 400 800

(IN FEET)
1 inch = 400 ft.

NO.	BY	REVISIONS	DATE
1	RAM	FOR UPDATED PRP	12/20/2023

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
MONICA LEE WALL
ENGINEER
No. 082236
PENNSYLVANIA

MONICA L. WALL, P.E.
LICENSED PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 082236

12/20/2023
DATE

POLLUTION REDUCTION PLAN

NPDES PHASE II MS4 PROGRAM
PAI 132230
WILSON BOROUGH, NORTHAMPTON COUNTY, PENNSYLVANIA

FIGURE 3
PROPOSED BMPs

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SUITE 300
BETHLEHEM, PA 18018
TEL 610-625-2999
FAX 610-625-2969
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DESIGNED BY	RAM
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DATE	02/01/2018
SCALE	1" = 400'
PROJ. NO.	WILS00020

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SHEET 3 OF 3

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MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Northampton County						
WILSON BORO	PAI132230	Yes	SP, IP	Lehigh River	Appendix C-PCB (5), Appendix E-Organic Enrichment/Low D.O., Siltation, Suspended Solids (5)	
				Delaware River		Mercury (5)
WIND GAP BORO	PAI132229	Yes	SP, IP	Little Bushkill Creek	Appendix B-Pathogens (5)	
				Unnamed Tributaries to Little Bushkill Creek	Appendix E-Siltation (5)	
Northumberland County						
RIVERSIDE BORO		No		Susquehanna River	Appendix C-PCB (4a)	Mercury (5)
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
Perry County						
MARYSVILLE BORO	PAG133690*	No		Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Susquehanna River	Appendix C-PCB (5)	
PENN TWP	PAG133696*	No		Susquehanna River	Appendix C-PCB (5)	
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
RYE TWP	PAG133646*	No		Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Susquehanna River	Appendix C-PCB (5)	

TABLE 5 - PADEP MUNICIPAL MS4 REQUIREMENTS TABLE

TABLE 6 - WILSON BOROUGH - EXISTING STORMWATER MANAGEMENT BMPs

20-Dec-23

ID	Name	Address	Description of the BMP	Lattitue	Longitude	Impervious Area (acres)	Pervious Area (acres)	TSS Impervious Loading rate (lbs/ac/yr)	TSS Pervious Loading rate (lbs/ac/yr)	TSS lbs/year	BMP Effectiveness	Annual Credit (lbs/yr)	Annual Credit (tons/yr)
B1	Fox Circle Basin	Behind 2205 Fox Circle	Dry Detention Basin	40.677731	-75.239547	9.6	11.7	1,839.0	264.96	20,754.4	10.00%	2,075.4	1.0
B2	Iron Street and Avona Avenue	Iron Street and Avona Avenue	Dry Extended Detention Basin	40.678316	-75.240089	1.4	1.5	1,839.0	264.96	2,885.4	60.00%	1,731.2	0.87
B3	Bike Path Basin	Behind Lidl (previously Balata Belting)	Underground Dry Extended Detention Basin	40.674786	-75.244611	6.7	1.5	1,839.0	264.96	12,710.8	60.00%	7,626.5	3.8
B4	Wilson Intermediate School Basin	2400 Firmstone Street (behind the bldg)	Dry Extended Detention Basin	40.670553	-75.241638	5.7	4.1	1,839.0	264.96	11,629.1	60.00%	6,977.5	3.5
B5	Antonian Towers Senior Apts Basin	2405 Hillside Avenue (behind parking lot)	Dry Extended Detention Basin	40.674837	-75.243914	0.6	0.3	1,839.0	264.96	1,259.1	60.00%	755.5	0.4
										Total Annual Credit =		**19,166.1**	**9.6**

Sample Calculation for existing basin B1

Impervious Area that drains to existing basin B1 x Impervious Loading rate = 9.6 acres x 1,839.0 lbs/acre/year = 17,654.4

Pervious Area that drains to existing basin B1 x Pervious Loading rate = 11.7 acres x 264.96 lbs/acre/year = 3,100.0

Total Sediment Load that drains to existing basin B1 = 17,654.4 + 3,100.0 = 20,754.4 lbs/year of sediment

The amount of sediment that existing basin B1 'captures' per year = total sediment to existing basin B1 x the BMP effectiveness for a 'dry detention basin' (10%) = 20,754.4 lbs/year x 0.10 = 2,075.4 lbs/year

Therefore, the total sediment load credit that existing basin B1 provides per year = 2,075.4 lbs/year

TABLE 7 - WILSON BOROUGH - PROPOSED STORMWATER MANAGEMENT BMPs

20-Dec-23

BMP ID	Name	Address	BMP description	Proposed Intallation Date	Lattitude	Longitude	Impervious Area (acres)	Pervious Area (acres)	TSS Impervious Loading rate (lbs/ac/yr)	TSS Pervious Loading rate (lbs/ac/yr)	Existing BMP Effectiveness	Proposed BMP Effectiveness	TSS lbs/year	Proposed Annual Reduction (lbs/yr)	Proposed Annual Reduction (tons/yr)
P1	Vacuum 50 Existing Inlets (avg DA = 0.5 ac/inlet)*	Along Borough Roads within the PRP Planning Area	Storm Sewer System Solids Removal	annually	N/A	N/A	0.5 acres per inlet	0	1,839.0	264.96	N/A	N/A*	N/A	13,628.0	6.8
P2	Street Trees - Treevitalize Grant	Along Township Roads within the PRP Planning Area	Tree Planting (37 trees)	2018	N/A	N/A	0.3	0.07	1,839.0	264.96	N/A	0.2	570.2	114.0	0.06
P3	Lidl Grocery Store - Parking Lot Trees	1120 S 25th Street	Tree Planting (188 trees)	2018	40.6785479	-75.245115	1	0.88	1,839.0	264.96	N/A	0.2	2,072.2	414.4	0.2
P4	Bike Path Retentive Grading	Near the bike path behind Wilson Manor	Minimum (3) retentive berms 50 feet apart	2024	40.677296	-75.240647	6.41	8.86	1,839.0	264.96	N/A	0.8	14,135.5	11,308.4	5.7
P5	Firmstone Street Roadside Swale	Along Firmstone Street between S. 23rd Street and Iron Street	150 LF Vegetated Open Channel (type B soils)	2024	40.673055	-75.238376	0.41	0.35	1,839.0	264.96	N/A	0.7	846.7	592.7	0.3
P6	Public Works Building Retentive Grading	1415 Iron Street	Retentive Grading	2024	40.673145	-75.237687	0.99	2.23	1,839.0	264.96	N/A	0.8	2,411.5	1,929.2	1.0
P7	Public Works Building Constucted Filter	1415 Iron Street	Filtering Practices	2024	40.673055	-75.237553	1.19	1.33	1,839.0	264.96	N/A	0.8	2,540.8	2,032.6	1.0
P8	Hillside Avenue Raingarden	Hillside Avenue and Steward Street	Raingarden w/ Underdrain	2025	40.674148	-75.245222	5.44	1.25	1,839.0	264.96	N/A	0.8	10,335.4	8,268.3	4.1
P9	Mavis Tire Constructed Filter	818 S. 25th Street	Filtering Practices	2025	40.678819	-75.246768	0.52	0	1,839.0	264.96	N/A	0.8	956.3	765.0	0.4
P10	New Police and Administration Building Raingarden	1350 Balata Street	Raingarden w/ Underdrain	2025	40.672293	-75.242079	0.42	0.33	1,839.0	264.96	N/A	0.8	859.8	687.9	0.3
												Proposed Annual Reduction		**39,740.6**	**19.9**
												Required Annuel Reduction		**27,257.2 lbs/yr**	**13.6 tons/yr**

* Borough to clean existing inlets and storm pipes located within the PRP planning area and measure the weight of material collected. Borough will then convert the annual wet weight captured per the BMP Effectiveness Values chart until an amount of 13,628 lbs is obtained.

Sample Sediment Load Reduction Calculation for proposed BMP P5

Impervious Area that drains to BMP P5 x Impervious Loading rate = 0.41 acres x 1,839.0 lbs/acre/year =	754.0	lbs/year	
Pervious Area that drains to BMP P5 x Pervious Loading rate = 0.35 acres x 264.96 lbs/acre/year =	92.7	lbs/year	
Total Sediment Load that drains to BMP P5 = 754+92.7 =	**846.7**	**lbs/year**	
The amount of sediment that BMP P5 'captures' per year = total sediment load to BMP P5 x the BMP effectiveness for a 'vegetated open channel type B soils' (70%) = 847 lbs/year x 0.70 = 592.:			
Therefore, the total sediment load reduction that proposed BMP 5 provides per year = 592.7 lbs/year (0.3 tons/year)			

Sample Tree Planting Calculation

multiply the number of trees planted by 0.01	37 trees x 0.01 = 0.37 acres
multiply the acreage by the pollutant loading rate for the land prior to planting the trees	
The trees planted as part of the annual treevitalize grant are primarily street trees. Therefore was have split the area into 0.30 acres of impervious and 0.07 acres of pervious for a total of 0.37 acres as referenced above	
Multiply the impervious and pervious areas by the pollutant loading rates for impervious and pervious.	
0.30 ac impervious x 1839.0 lbs/acre/year = 551.70 lbs/year	0.07 ac pervious x 264.96 lbs/acre/year = 18.55 lbs/year
Determine the total loading rate by adding them together.	551.70 + 18.55 = 570.25 lbs/ac/year
Multiply the total loading rate by the BMP effectiveness value for tree planting (20%)	**570.25 x 0.2 = 114.05 lbs/year**

ATTACHMENT B

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
Clearfield	impervious developed	9,638.5	17.54	2.78	1,902.9
	pervious developed	17,444.3	18.89	1.05	266.62
Clinton	impervious developed	7,238.5	18.02	2.80	1,856.91
	pervious developed	11,153.8	16.88	0.92	275.81
Columbia	impervious developed	7,343.1	21.21	3.08	1,929.18
	pervious developed	21,848.2	22.15	1.22	280.39
Cumberland	impervious developed	8,774.8	28.93	1.11	2,065.1
	pervious developed	26,908.6	23.29	0.34	306.95
Dauphin	impervious developed	3,482.4	28.59	1.07	1,999.14
	pervious developed	9,405.8	21.24	0.34	299.62
Elks	impervious developed	1,317.7	18.91	2.91	1,556.93
	pervious developed	1,250.1	19.32	1.19	239.85
Franklin	impervious developed	13,832.3	31.6	2.72	1,944.85
	pervious developed	49,908.6	24.37	0.76	308.31
Fulton	impervious developed	3,712.9	22.28	2.41	1,586.75
	pervious developed	4,462.3	18.75	0.91	236.54
Huntington	impervious developed	7,321.9	18.58	1.63	1,647.53
	pervious developed	11,375.4	17.8	0.61	260.15
Indiana	impervious developed	589	19.29	2.79	1,621.25
	pervious developed	972	20.1	1.16	220.68
Jefferson	impervious developed	21.4	18.07	2.76	1,369.63
	pervious developed	20.4	19.96	1.24	198.60
Juniata	impervious developed	3,770.2	22.58	1.69	1,903.96
	pervious developed	8,928.3	17.84	0.55	260.68
Lackawana	impervious developed	2,969.7	19.89	2.84	1,305.05
	pervious developed	7,783.9	17.51	0.76	132.98
Lancaster	impervious developed	4,918.7	38.53	1.55	1,480.43
	pervious developed	21,649.7	22.24	0.36	190.93
Lebanon	impervious developed	1,192.1	40.58	1.85	1,948.53
	pervious developed	5,150	27.11	0.4	269.81
Luzerne	impervious developed	5,857	20.43	3	1,648.22
	pervious developed	13,482.9	19.46	0.98	221.19
Lycoming	impervious developed	10,031.7	16.48	2.57	1,989.64
	pervious developed	19,995.5	16	0.84	277.38

County	Category	Acres	TN lbs/acre/yr	TP lbs/acre/yr	TSS (Sediment) lbs/acre/yr
McKean	impervious developed	38.7	20.93	3.21	1,843.27
	pervious developed	5.3	22.58	1.45	249.26
Mifflin	impervious developed	5,560.2	21.83	1.79	1,979.13
	pervious developed	16,405.5	21.13	0.71	296.07
Montour	impervious developed	5,560.2	21.83	1.79	1,979.13
	pervious developed	16,405.5	21.13	0.71	296.07
Northumberland	impervious developed	8,687.3	25.73	1.54	2,197.08
	pervious developed	25,168.3	24.63	0.54	367.84
Perry	impervious developed	5,041.1	26.77	1.32	2,314.7
	pervious developed	9,977	23.94	0.51	343.16
Potter	impervious developed	2,936.3	16.95	2.75	1,728.34
	pervious developed	2,699.3	17.11	1.09	265.2
Schuylkill	impervious developed	5,638.7	30.49	1.56	1,921.08
	pervious developed	14,797.2	29.41	0.57	264.04
Snyder	impervious developed	4,934.2	28.6	1.11	2,068.16
	pervious developed	14,718.1	24.35	0.4	301.5
Somerset	impervious developed	1,013.6	25.13	2.79	1,845.7
	pervious developed	851.2	25.71	1.14	293.42
Sullivan	impervious developed	3,031.7	19.08	2.85	2,013.9
	pervious developed	3,943.4	21.55	1.31	301.58
Susquehanna	impervious developed	7,042.1	19.29	2.86	1,405.73
	pervious developed	14,749.7	20.77	1.21	203.85
Tioga	impervious developed	7,966.9	12.37	2.09	1,767.75
	pervious developed	18,090.3	12.22	0.76	261.94
Union	impervious developed	4,382.6	22.98	2.04	2,393.55
	pervious developed	14,065.3	20.88	0.69	343.81
Wayne	impervious developed	320.5	18.69	2.89	1,002.58
	pervious developed	509	21.14	1.31	158.48
Wyoming	impervious developed	3,634.4	16.03	2.53	2,022.32
	pervious developed	10,792.9	13.75	0.7	238.26
York	impervious developed	10,330.7	29.69	1.18	1,614.15
	pervious developed	40,374.8	18.73	0.29	220.4
All Other Counties	impervious developed	-	23.06	2.28	1,839
	pervious developed	-	20.72	0.84	264.96

Notes:

1 These land loading rate values may be used to derive existing pollutant loading estimates under DEP's simplified method for PRP development. MS4s may choose to develop estimates using other scientifically sound methods.

2 Acres and land loading rate values for named counties in the Chesapeake Bay watershed are derived from CAST. (The column for Acres represents acres within the Chesapeake Bay watershed). For MS4s located outside of the Chesapeake Bay watershed, the land loading rates for "All Other Counties" may be used to develop PRPs under Appendix E; these values are average values across the Chesapeake Bay watershed.

3 For land area outside of the urbanized area, undeveloped land loading rates may be used where appropriate. When using the simplified method, DEP recommends the following loading rates (for any county) for undeveloped land:

- TN – 10 lbs/acre/yr
- TP – 0.33 lbs/acre/yr
- TSS (Sediment) – 234.6 lbs/acre/yr

These values were derived by using the existing loads for each pollutant, according to the 2014 Chesapeake Bay Progress Run, and dividing by the number of acres for the unregulated stormwater subsector.

TABLE 9

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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 Basins and Hydrodynamic Structures	5%	10%	10%	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Hydrodynamic Structures are devices designed to improve quality of stormwater using features such as swirl concentrators, grit chambers, oil barriers, baffles, micropools, and absorbent pads that are designed to remove sediments, nutrients, metals, organic chemicals, or oil and grease from urban runoff.
Dry Extended Detention Basins	20%	20%	60%	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Infiltration Practices w/ Sand, Veg.	85%	85%	95%	A depression to form an infiltration basin where sediment is trapped and water infiltrates the soil. No underdrains are associated with infiltration basins and trenches, because by definition these systems provide complete infiltration. Design specifications require infiltration basins and trenches to be built in good soil, they are not constructed on poor soils, such as C and D soil types. Engineers are required to test the soil before approval to build is issued. To receive credit over the longer term, jurisdictions must conduct yearly inspections to determine if the basin or trench is still infiltrating runoff.
Filtering Practices	40%	60%	80%	Practices that capture and temporarily store runoff and pass it through a filter bed of either sand or an organic media. There are various sand filter designs, such as above ground, below ground, perimeter, etc. An organic media filter uses another medium besides sand to enhance pollutant removal for many compounds due to the increased cation exchange capacity achieved by increasing the organic matter. These systems require yearly inspection and maintenance to receive pollutant reduction credit.
Filter Strip Runoff Reduction	20%	54%	56%	Urban filter strips are stable areas with vegetated cover on flat or gently sloping land. Runoff entering the filter strip must be in the form of sheet-flow and must enter at a non-erosive rate for the site-specific soil conditions. A 0.4 design ratio of filter strip length to impervious flow length is recommended for runoff reduction urban filter strips.
Filter Strip Stormwater Treatment	0%	0%	22%	Urban filter strips are stable areas with vegetated cover on flat or gently sloping land. Runoff entering the filter strip must be in the form of sheet-flow and must enter at a non-erosive rate for the site-specific soil conditions. A 0.2 design ratio of filter strip length to impervious flow length is recommended for stormwater treatment urban filter strips.
Bioretention – Raingarden (C/D soils w/ underdrain)	25%	45%	55%	An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants. This BMP has an underdrain and is in C or D soil.
Bioretention / Raingarden (A/B soils w/ underdrain)	70%	75%	80%	An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants. This BMP has an underdrain and is in A or B soil.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Bioretention / Raingarden (A/B soils w/o underdrain)	80%	85%	90%	An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants. This BMP has no underdrain and is in A or B soil.
Vegetated Open Channels (C/D Soils)	10%	10%	50%	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix, and/or is infiltrated into the underlying soils. This BMP has no underdrain and is in C or D soil.
Vegetated Open Channels (A/B Soils)	45%	45%	70%	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix, and/or is infiltrated into the underlying soils. This BMP has no underdrain and is in A or B soil.
Bioswale	70%	75%	80%	With a bioswale, the load is reduced because, unlike other open channel designs, there is now treatment through the soil. A bioswale is designed to function as a bioretention area.
Permeable Pavement w/o Sand or Veg. (C/D Soils w/ underdrain)	10%	20%	55%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, no sand or vegetation and is in C or D soil.
Permeable Pavement w/o Sand or Veg. (A/B Soils w/ underdrain)	45%	50%	70%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, no sand or vegetation and is in A or B soil.
Permeable Pavement w/o Sand or Veg. (A/B Soils w/o underdrain)	75%	80%	85%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has no underdrain, no sand or vegetation and is in A or B soil.
Permeable Pavement w/ Sand or Veg. (A/B Soils w/ underdrain)	50%	50%	70%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, has sand and/or vegetation and is in A or B soil.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Permeable Pavement w/ Sand or Veg. (A/B Soils w/o underdrain)	80%	80%	85%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has no underdrain, has sand and/or vegetation and is in A or B soil.
Permeable Pavement w/ Sand or Veg. (C/D Soils w/ underdrain)	20%	20%	55%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, has sand and/or vegetation and is in C or D soil.
Stream Restoration	0.075 lbs/ft/yr	0.068 lbs/ft/yr	44.88 lbs/ft/yr	An annual mass nutrient and sediment reduction credit for qualifying stream restoration practices that prevent channel or bank erosion that otherwise would be delivered downstream from an actively enlarging or incising urban stream. Applies to 0 to 3rd order streams that are not tidally influenced. If one of the protocols is cited and pounds are reported, then the mass reduction is received for the protocol.
Forest Buffers	25%	50%	50%	An area of trees at least 35 feet wide on one side of a stream, usually accompanied by trees, shrubs and other vegetation that is adjacent to a body of water. The riparian area is managed to maintain the integrity of stream channels and shorelines, to reduce the impacts of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals. Effectiveness credit for TN is for 4 upslope acres for each acre of buffer (4:1), and 2 upslope acres for TP and sediment (2:1). Additional credit is gained by converting land use from current use to forest. (Note – the values represent pollutant load reductions from stormwater draining through buffers).
Tree Planting	10%	15%	20%	The BMP effectiveness values for tree planting are estimated by DEP. DEP estimates that 100 fully mature trees of mixed species (both deciduous and non-deciduous) provide pollutant load reductions for the equivalent of one acre (i.e., one mature tree = 0.01 acre). The BMP effectiveness values given are based on immature trees (seedlings or saplings); the effectiveness values are expected to increase as the trees mature. To determine the amount of pollutant load reduction that can credited for tree planting efforts: 1) multiply the number of trees planted by 0.01; 2) multiply the acreage determined in step 1 by the pollutant loading rate for the land prior to planting the trees (in lbs/acre/year); and 3) multiply the result of step 2 by the BMP effectiveness values given.
Street Sweeping	3%	3%	9%	Street sweeping must be conducted 25 times annually. Only count those streets that have been swept at least 25 times in a year. The acres associated with all streets that have been swept at least 25 times in a year would be eligible for pollutant reductions consistent with the given BMP effectiveness values.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Storm Sewer System Solids Removal	0.0027 for sediment, 0.0111 for organic matter	0.0006 for sediment, 0.0012 for organic matter	1 – TN and TP concentrations	This BMP (also referred to as "Storm Drain Cleaning") involves the collection or capture and proper disposal of solid material within the storm system to prevent discharge to surface waters. Examples include catch basins, stormwater inlet filter bags, end of pipe or outlet solids removal systems and related practices. Credit is authorized for this BMP only when proper maintenance practices are observed (i.e., inspection and removal of solids as recommended by the system manufacturer or other available guidelines). The entity using this BMP for pollutant removal credits must demonstrate that they have developed and are implementing a standard operating procedure for tracking the material removed from the sewer system. Locating such BMPs should consider the potential for backups onto roadways or other areas that can produce safety hazards. To determine pollutant reductions for this BMP, these steps must be taken: 1) Measure the weight of solid/organic material collected (lbs). Sum the total weight of material collected for an annual period. Note – do not include refuse, debris and floatables in the determination of total mass collected. 2) Convert the annual wet weight captured into annual dry weight (lbs) by using site-specific measurements (i.e., dry a sample of the wet material to find its weight) or by using default factors of 0.7 (material that is predominantly wet sediment) or 0.2 (material that is predominantly wet organic matter, e.g., leaf litter). 3) Multiply the annual dry weight of material collected by default or site-specific pollutant concentration factors. The default concentrations are shown in the BMP Effectiveness Values columns. Alternatively, the material may be sampled (at least annually) to determine site-specific pollutant concentrations. DEP will allow up to 50% of total pollutant reduction requirements to be met through this BMP. The drainage area treated by this BMP may be no greater than 0.5 acre unless it can be demonstrated that the specific system proposed is capable of treating stormwater from larger drainage areas. For planning purposes, the sediment removal efficiency specified by the manufacturer may be assumed, but no higher than 80%.