Pollutant Reduction Plan

Stony Creek, Indian Creek and Unnamed Tributaries to Schuylkill River

Updated May 2019 (and August 2019 to reflect public comment)

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1.0 Purpose and Scope

West Norriton Township is required to develop and implement a Pollutant Reduction Plan (PRP) for Municipal Separate Storm Sewer System (MS4) discharges to Stony Creek, Indian Creek, and unnamed tributaries (UNTs) to the Schuylkill River as part of the 2018 National Pollutant Discharge Elimination System (NPDES) MS4 General Permit application to the Pennsylvania Department of Environmental Protection (PA DEP). This plan has been prepared based on the best and most current guidance made available by PA DEP. Definitions of relevant regulatory terms have been provided in Section 6.0 of this report.

2.0 Permit Requirements

To develop a PRP, it is important to have an understanding of the Township's requirements. West Norriton Township is required by the PA DEP and Environmental Protection Agency (EPA) to reduce sediment pollution from stormwater discharges to surfaces impaired by sediment by ten (10) percent within five (5) years of the PA DEP approval date of this Pollutant Reduction Plan (PRP), by implementing projects or Best Management Practices (BMPs).

West Norriton has MS4 discharges or "outfalls" to Stony Creek, Indian Creek, and unnamed tributaries (UNTs) to the Schuylkill River, which are listed by the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report (Integrated Report) as impaired for siltation (i.e. sediment) and highlighted in Table 1 below.

Table 1: MS4 Requirements Table (Municipal) Excerpt (Revised 10/23/2018)

MS4 Name	NPDES ID	HUC 12 Name	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)
West Norriton Township	PAG130006	Mingo Creek-Schuylkill River, Plymouth Creek-Schuylkill River	Schuylkill River PCB TMDL	Appendix C-PCB
		Mingo Creek-Schuylkill River, Stony Creek	Indian Creek, Stony Creek, Unnamed tributaries to Schuylkill River	Appendix E-Siltation

West Norriton Township is required to reduce the sediment loading to Stony Creek, Indian Creek, and UNTs to the Schuylkill River by 10 percent within five (5) years of the PA DEP approval date of this Pollutant Reduction Plan (PRP).

3.0 Background/Setting

West Norriton Township comprises approximately 6.2 square miles located near the western boundary of Montgomery County, in southeast Pennsylvania (Figure 1). The 2010 Urbanized Area (U.S. Census Bureau) covers the 100 percent of the land area of the Township.

Figure 1: West Norriton Township Location Map

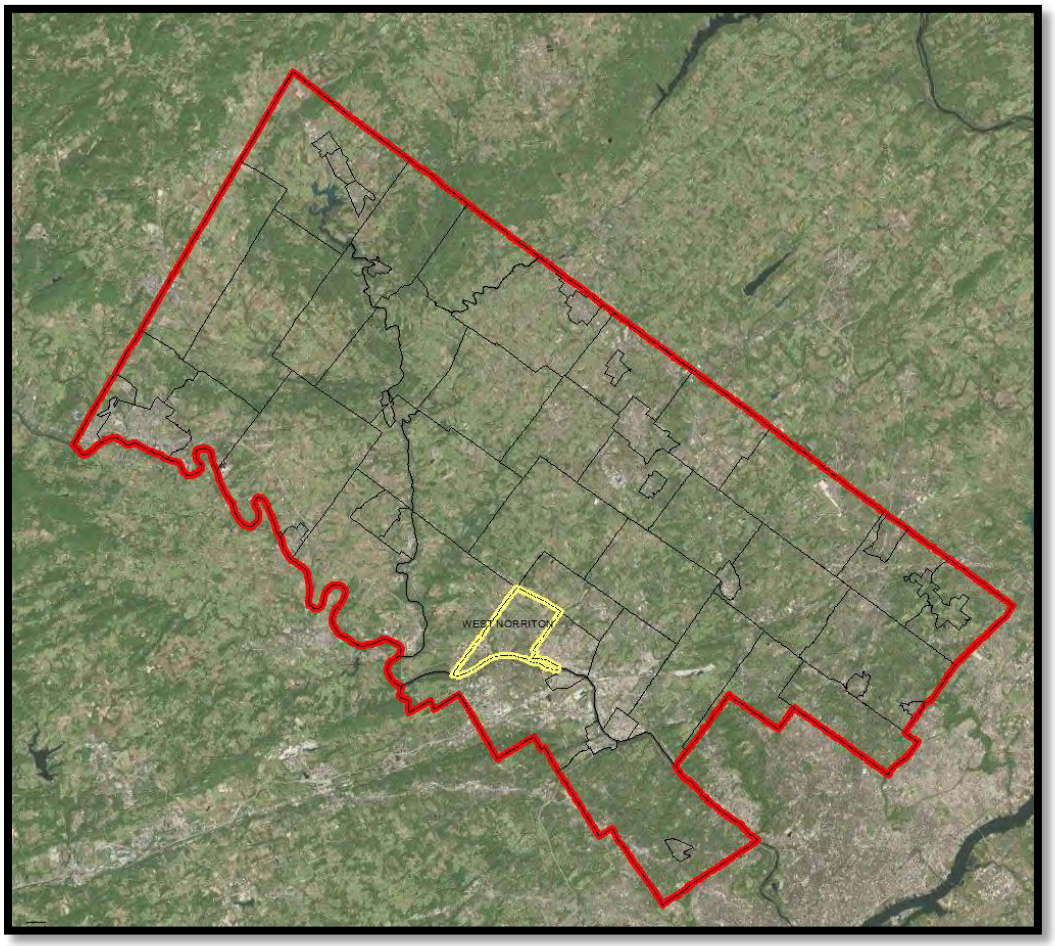
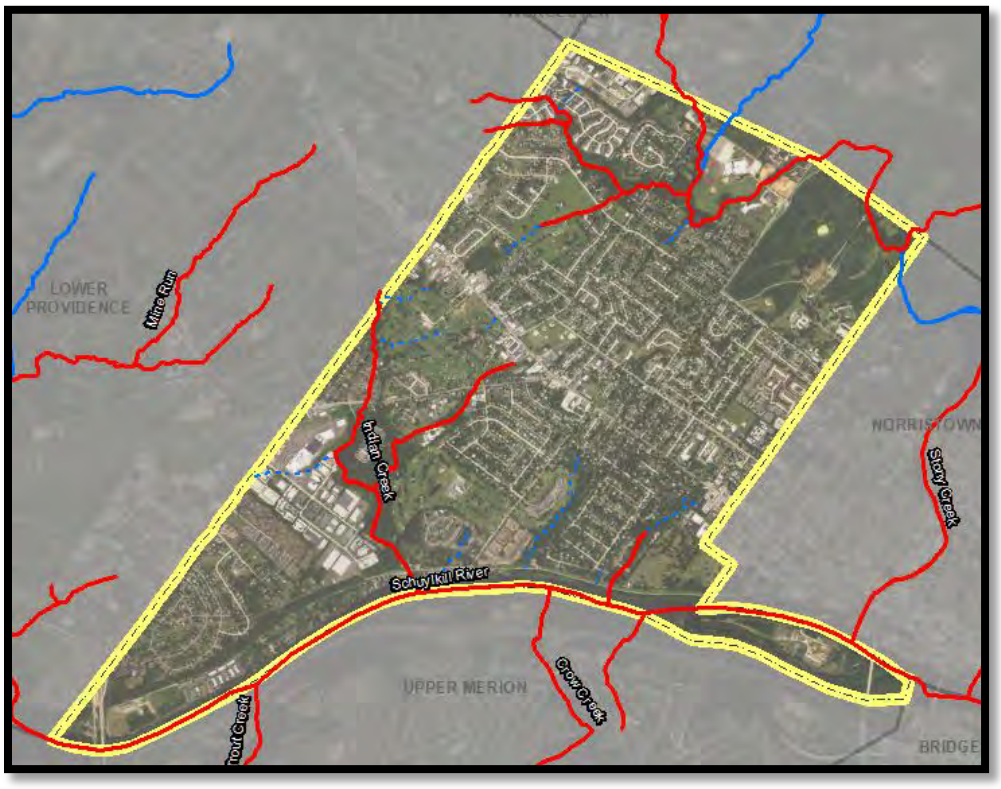


Figure 2 below displays a map of the streams that flow through West Norriton Township. Stream segments colored red indicate impaired portions of streams. A total of seventy-three (73) MS4 outfalls discharge to the portions of Stony Creek, Indian Creek, and UNTs to the Schuylkill River that are impaired for sediment.

Figure 2: West Norriton Township Impaired Streams (Red)



3.1 Stony Creek

Stony Creek flows across the northern portion of the Township in a south-southeasterly direction. Stony Creek eventually flows into the Schuylkill River east of the Township boundary in the Borough of Norristown. Stony Creek was listed as impaired for siltation, water/flow variability and cause unknown in 2002. Table 2 below lists the impairment information for the portion of Stony Creek within the Township from the 2014 Integrated Report.

There are thirty-four (34) MS4 outfalls that discharge to Stony Creek. Stony Creek lies within the Stony Creek Hydrologic Unit Code (HUC) 12. Refer to Appendices for MS4 mapping.

Table 2: 2014 Integrated Report – Stony Creek

Impairment Cause	Impairment Source	Category	Assessed Use	Date Listed
Cause Unknown, Turbidity	Small Residential Runoff	5	Aquatic Life	2002
Water Flow/Variability	Habitat Modification, Road Runoff, Removal of Vegetation	4c	Aquatic Life	2002
Siltation	Road Runoff, Habitat Modification, Removal of Vegetation	5	Aquatic Life	2002

3.2 Indian Creek

The headwaters of Indian Creek are located just outside of the western Township boundary, flowing in a southerly direction under South Trooper Road near the Jeffersonville Golf Club. Indian Creek flows in a southerly direction and into the Schuylkill River. Indian Creek is listed as impaired for sediment, water/flow variability and cause unknown. Table 3 below lists the impairment information for Indian Creek from the 2014 Integrated Report.

There are thirty-two (32) MS4 outfalls that discharge to Indian Creek. Indian Creek lies within the Mingo Creek-Schuylkill River HUC 12 boundary. Refer to Appendices for MS4 mapping.

Table 3: 2014 Integrated Report – Indian Creek

Impairment Cause	Impairment Source	Category	Assessed Use	Date Listed
Water/Flow Variability	Removal of Vegetation, Road Runoff	4c	Aquatic Life	2002
Cause Unknown	Golf Courses, Small Residential Runoff	5	Aquatic Life	2002
Siltation	Road Runoff	5	Aquatic Life	2002

3.3 Unnamed Tributaries to Schuylkill River

There is one (1) unnamed tributary (UNT) to the Schuylkill River listed as impaired for sediment. This UNT originates in the southeastern portion of the Township near Riverside Cemetery and flows in a southwesterly direction into the Schuylkill River. The entire length of the UNT to the Schuylkill River is listed as impaired for water/flow variability and sediment. Table 4 below lists the impairment information for the UNT from the 2014 Integrated Report.

There are seven (7) MS4 outfalls that discharge to the UNT to the Schuylkill River. The UNT to the Schuylkill River lies within the Mingo Creek-Schuylkill River HUC 12. Refer to Appendices for MS4 mapping.

Table 4: 2014 Integrated Report – UNTs to Schuylkill River

Impairment Cause	Impairment Source	Category	Assessed Use	Date Listed
Water/Flow Variability	Channelization, Urban Runoff/Storm Sewers	4c	Aquatic Life	2002
Siltation	Habitat Modification	5	Aquatic Life	2002

4.0 Pollutant Reduction

Per the MS4 permit and PRP Instructions document (3800-PM-BCW0100k Rev. 3/2017), the following sections are addressed and described below: Public Participation, Storm Sewersheds, Pollutants of Concern, Existing Sediment Loading, Proposed Best Management Practices (BMPs), Funding Mechanisms, and Operations and Maintenance.

4.1 Public Participation

The PRP was updated in May 2019 to address comments received from the PA DEP in a letter dated February 1, 2018 and informally throughout 2018 and 2019. The proposed BMPs changed as a result of addressing these comments.

West Norriton Township made the PRP available to the public to review and provide comment for thirty (30) days, initiated by a public notice published in the Times Herald on June 5, 2019. The original PRP was presented at the Board of Commissioners workshop meeting on June 13, 2017. The updated PRP was presented at the Board of Commissioners meeting on July 9, 2019. One (1) comment was received on July 12, 2019 following the presentation. No revisions were made to the PRP as a result of the comment. A copy of the public notice published in the Times Herald, the BOC meeting minutes, and the response to the public comment is included in Appendix A.

4.2 Storm Sewersheds

Storm sewersheds that drain to each of the seventy-three (73) outfalls were manually delineated in ArcMap 10.6 using two (2) foot topographic contours from the 2006-2008 PAMAP Program data published by the Pennsylvania Department of Conservation and Natural Resources (DCNR), while referencing Google Street View and multiple sources of aerial imagery. The terms “Storm Sewershed” and “Planning Area” will be used interchangeably throughout this report.

“Parsing” is defined by the PRP Instructions Attachment A, entitled “Parsing Guidelines for MS4s in Pollutant Reduction Plans”, as a “process in which land area is removed from a Planning Area in order to calculate the actual or target pollutant loads that are applicable to an MS4.” The examples cited include:

1) The land area associated with non-municipal stormwater NPDES permit coverage that exists within the urbanized area of a municipality;
2) Land area associated with PennDOT roadways and the Pennsylvania Turnpike (roads and right of ways);
3) Lands associated with the production area of a Concentrated Animal Feeding Operation that is covered by an NPDES permit;

4) Land areas in which stormwater runoff does not enter the MS4. If an accurate storm sewershed map is developed, these lands may be parsed or excluded as part of that process.

Land areas that have been parsed from the Planning Area during the development of this PRP fall under category #4 as describe above. These parsed areas have been further categorized as the following and identified on the Storm Sewershed Map in Appendix E: Land area consisting of entirely privately-owned land or infrastructure that drains directly to a surface water (labeled as "Land areas in which stormwater runoff does not enter the MS4");

The following table (Table 5) includes a list of outfalls and the associated storm sewershed acreage that drain to each outfall. Also listed is the receiving sediment-impaired stream for each outfall and United States Geological Survey (USGS) National Hydrography Dataset (NHD) Hydrologic Unit Code (HUC) 12 watershed.

Table 5: Storm Sewershed Acreage by Outfall

Receiving Impaired Stream	HUC 12	Outfall Number	Storm Sewersheds (acres)
Stony Creek	Stony Creek	1	2.98
		2	2.66
		3	4.42
		4	9.51
		5	0.54
		6	1.14
		7	1.05
		8	3.28
		9	1.17
		10	1.06
		11	2.19
		12	30.92
		13	48.01
		14	0.37
		15	14.82
		16	1.54
		22	40.44
		33	87.67
		45	0.10
		46	0.08
		47	34.55
		48	18.64
		52	36.69
		58	6.78
		59	33.01
		60	4.31
		61	22.09
		62	38.09
		63	327.25
		69	63.79
		70	3.96

Table 5: Storm Sewershed Acreage by Outfall

Receiving Impaired Stream	HUC 12	Outfall Number	Storm Sewersheds (acres)
		71	6.48
		72	2.18
		73	17.84
Indian Creek	Mingo Creek-Schuylkill River	17	2.82
		18	43.47
		32	10.27
		34	1.24
		35	0.25
		36	0.25
		37	1.49
		38	0.17
		39	1.47
		40	0.19
		41	5.18
		42	1.85
		43	15.46
		44	12.87
		51	3.28
		54	47.35
		55	6.97
		56	35.49
		57	16.92
		64	34.44
		65	12.12
		66	20.99
		67	6.57
		68	109.90
		74	5.72
		75	1.13
		76	18.42
		77	16.84
		78	43.88
		79	81.52
		80	30.24
		81	35.24
UNT to Schuylkill River		25	5.97
		26	2.62
		27	8.61
		28	62.91
		29	2.99
		30	8.51
		53	3.18
		TOTAL:	**1,594.79**

4.3 Pollutants of Concern

There is one (1) pollutant of concern that West Norriton Township is required to address: sediment. To meet the requirements, a minimum ten (10) percent sediment reduction has been demonstrated

in this plan. Though not required, existing loading and BMP reduction calculations were also provided for phosphorous and nitrogen (Appendix C).

4.4 Existing Sediment Loading

To determine existing sediment loading to Stony Creek, Indian Creek and the UNT to the Schuylkill River, the general methodology described in the DEP guidance document entitled "Pollution Reduction Plan: A Methodology" was utilized.

Per the "Pollutant Aggregation Suggestions for MS4 Requirements Table Instructions" (dated April 4, 2017) and the "Pollutant Aggregation Suggestions for MS4 Requirements Table (Municipal)" (revised October 23, 2018), West Norriton Township may achieve the ten (10) percent sediment pollutant reduction across the entire Planning Area (i.e. storm sewersheds), as opposed to a 10 percent reduction in the Planning Areas for each receiving impaired surface water. This is due to Stony Creek, Indian Creek, and the UNT to the Schuylkill River all sharing a common pollutant (sediment) with the downstream HUC 10.

Utilizing ArcGIS 10.6, 2011 National Land Cover Dataset (NLCD) data, the acreage of each land cover classification type within the storm sewersheds was calculated. The aggregate NLCD statistics within the storm sewersheds is compiled below (Table 6) with a breakdown of the area by land cover classification type. Refer to Appendix F for the Land Cover Map.

Table 6: NLCD 2011 Land Cover to Impervious/Pervious Conversion within Planning Area

NLCD Land Cover Classification	Area (acres)	Percent Impervious	Impervious Area (acres)	Pervious Area (acres)
Developed, Open Space	617.23	19	117.27	499.96
Developed, Low Intensity	609.06	49	298.44	310.62
Developed, Medium Intensity	234.23	79	185.04	49.19
Developed, High Intensity	84.83	100	84.83	0.00
Hay/Pasture	15.12	0	0.00	15.13
Cultivated Crops	0.82	0	0.00	0.82
Shrub/Scrub	1.29	0	0.00	1.29
Mixed Forest	4.01	0	0.00	4.01
Deciduous Forest	28.20	0	0.00	6.34
TOTAL:	**1594.79**	-	**685.58**	**887.35**

"Developed" land cover classifications were then converted to percent impervious coverage based on the NLCD 2011 definitions. The impervious percentages used are as follows:

- Developed, Open Space – 19% impervious
- Developed, Low Intensity – 49% impervious
- Developed, Medium Intensity – 79% impervious
- Developed, High Intensity – 100% impervious

All other land cover classifications were assumed to be 100 percent pervious. The "Developed Land Loading Rates for PA Counties" (Attachment B of the PRP Instructions) for "All Other Counties" were then applied for impervious developed and pervious developed land categories. This table is attached as Appendix B.

The existing sediment loading quantified from the entire Planning Area was 1,495,893.88 lbs./yr. A more detailed breakdown is located in Table 7 below. Please refer to Appendix C for supporting calculations.

Table 7: Existing Sediment Loading for Stormwater Outfalls to Sediment Impaired Streams

Receiving Waters Impaired by Sediment	HUC 12	Category	Area (ac)	TSS [Sediment] (lbs/yr)
Stony Creek/Indian Creek/UNT to Schuylkill River	Stony Creek/Mingo Creek-Schuylkill River	Impervious, Developed	685.58	1,260,781.62
		Pervious, Developed	887.35	235,112.26
		SUBTOTAL:	**1,559.05**	**1,495,893.88**
		Existing BMP Reduction:		51,558.22
		TOTAL:	**1,559.05**	**1,444,335.66**
		Required 10% Reduction		**144,433.56**

Using the pollutant removal efficiency rates specified in the PA DEP NPDES Stormwater Discharges from Small MS4s BMP Effectiveness Values Table (Revised 6/2018), seven (7) existing BMPs were credited to reduce the existing sediment loading to 1,444,335.66 lbs/yr, which resulted in a required 10 percent reduction of 144,433.56 lbs/yr. Five (5) of these existing BMPs are listed on the Township Post Construction Stormwater Management (PCSM) BMP Inventory and are inspected annually. Three (3) of these BMPs are being proposed as retrofit projects and are further described below in the Proposed BMPs section of this report (Section 4.5). Each existing BMP is described below and summarized in Table 8. Please refer to Appendix C for supporting calculations and the Storm Sewershed Map in Appendix E for BMP locations. Individual maps of the existing BMPs and their drainage areas are located in Appendix D.

Oakland Farms Basin

This dry extended detention basin is located in the Oakland Farms development, south of Wagon Wheel Road between house numbers 126 and 130 Wagon Wheel Road. The basin is associated with Outfall #69 and identified as BMP #2 on the Township PCSM BMP Inventory. The basin is functioning, and is operated and maintained by West Norriton Township. The total drainage area to the basin is 60.48 acres; it provides a total sediment pollutant load reduction of 26,436.67 lbs./yr.

Figure 3: Oakland Farms Basin

Fairways Basin

This dry extended detention basin is located in the Fairways at Green Meadows community, located north of Egypt Road and east of Mill Road. The basin is associated with Outfall #66 and identified as BMP #6 on the Township PCSM BMP Inventory. The basin is functioning properly, and is operated and maintained by Fairways Residential LP. The total drainage area to the basin is 7.14 acres; it provides a total sediment pollutant load reduction of 3,981.39 lbs./yr.

Figure 4: Fairways Basin

Wawa Basin

This dry extended detention basin is located behind the Wawa gas station located at 2544 W. Main Street, southeast of Trooper Road. The basin is associated with Outfall #78 and identified as BMP #14 on the Township PCSM BMP Inventory. The basin is functioning properly, and is operated and maintained by Wawa Inc. The total drainage area to the basin is 3.99 acres; it provides a total sediment pollutant load reduction of 3,423.95 lbs./yr.

Figure 5: Wawa Basin

Yocum Roofing Basin

This dry extended detention basin is located behind the residence of 48 S. Trooper Road. The basin is associated with Outfall #78 and identified as BMP #9 on the Township PCSM BMP Inventory. The basin is functioning properly, and is operated and maintained by Frank Yocum. The total drainage area to the basin is 1.90 acres. The total sediment pollutant load reduction is 1,191.51 lbs./yr.

Figure 6: Yocum Roofing Basin

Table 8: Existing BMP Sediment Reduction

BMP Name	Drainage Area (ac)	TSS [Sediment] Reduction
Oakland Farms Basin	60.48	26,436.67
Fairways Basin	7.14	3,981.39
Wawa Basin	3.99	3,423.95
Yocum Roofing Basin	1.90	1,191.51
*Burnside Village Basin	37.81	6,857.71
*Blue Dove Basin	45.39	6,614.20
*Alexander Drive Basin	37.81	3,052.79
TOTAL:	**194.52**	**51,558.22**

*BMP is being retrofitted as a proposed BMP

4.5 Proposed Best Management Practices (BMPs)

West Norriton Township proposes to meet the required 10 percent sediment load reduction for Stony Creek, Indian Creek, and the UNT to the Schuylkill River by implementing five (5) BMPs.

The proposed BMPs include , a basin retrofit on the northeast side of Sterigere Street at the intersection of Bishop Drive (referred to as Burnside Village Basin Retrofit), a basin retrofit located on the southeastern end of Boulevard of the Generals (referred to as Blue Dove Basin Retrofit), a basin retrofit on the corner of where Alexander Drive meets Burnside Ave (referred to as Alexander Drive Basin Retrofit), a stream restoration project along an unnamed tributaries to Indian Creek on the Jeffersonville Golf Club property (referred to as Jeffersonville Golf Club Stream Restoration Phase I), and an additional stream restoration project on the Jeffersonville Golf Club property (referred to as Jeffersonville Golf Club Stream Restoration Phase II). Maps of the proposed BMPs and their drainage areas are located in Appendix D. The BMP locations are also illustrated on the Storm Sewershed/Planning Area Map in Appendix E and the Land Cover Map in Appendix F.

All of the projects will provide water quality improvement and real-world benefit, while meeting the mandated pollutant reduction requirements. This analysis was performed in ArcMap 10.6 using aerial imagery, two (2)-foot topographic contours, and hydrological data. Site visits were conducted to collect information and measurements of existing BMPs where applicable, to support the BMP pollutant reduction calculations.

Reductions from the proposed new BMPs (Jeffersonville Golf Club Stream Restoration Phases I and II) were calculated using the pollutant removal efficiency rates specified in the BMP Effectiveness Values Table. The existing pollutant loading from the drainage areas to the stream restorations were included in the Planning Areas and factored into the existing pollutant loading.

Reductions from the proposed retrofit of existing BMPs (Burnside Village Basin Retrofit, Blue Dove Basin Retrofit, and Alexander Drive Basin Retrofit) were also calculated using the pollutant removal efficiency rates specified in the BMP Effectiveness Values Table. The rates for the BMPs in existing condition were subtracted from the rates that reflected the proposed BMP condition to reflect the overall improvement as a result of the retrofit. The existing pollutant loading from the drainage areas to the BMPs were included in the Planning Area and factored into the existing pollutant loading. Please refer to Appendix C for supporting calculations. Calculations for phosphorous and nitrogen loading have also been provided, though not required.

Sediment load reductions achieved through the proposed implementation of these BMPs are located in Table 8 below. An overall reduction of ten (10) percent has been achieved.

Table 8: Sediment Load Reductions from Proposed BMPs

HUC12	BMP Name	Drainage Area (ac)	TSS Reduction		
			Lbs/yr	% Reduction	% of Required Reduction
Mingo Creek-Schuylkill River	Jeffersonville Golf Club Stream Restoration Phase I	944 L.F.	42,366.72	2.83	28.32
	Jeffersonville Golf Club Stream Restoration Phase II	350 L.F.	19,582.87	1.31	13.09
	Blue Dove Basin Retrofit	45.39	33,070.94	2.21	22.11
Stony Creek	Burnside Village Basin Retrofit	87.56	34,289.67	2.29	22.92
	Alexander Drive Basin Retrofit	37.81	15,263.94	1.02	10.20
TOTAL:		182.32	144,574.14		
			OVERALL:	9.66%	96.65%

The proposed BMPs are described in more detail below.

Burnside Village Basin Retrofit

Burnside Village Basin is located on the northeast side Sterigere Street at the intersection of Bishop Drive. This retrofit consisted of converting the existing dry detention basin to a dry extended detention basin and installing a forebay, swale, and micropool. Construction of this project was completed in September 2017. The basin has a drainage area of 87.55 acres and will achieve a total sediment reduction of 34,289.67 lbs/yr. The impaired receiving stream for the basin retrofit is Stony Creek, which is located in the Stony Creek HUC 12.

Blue Dove Basin Retrofit

Blue Dove Basin is located on the southeastern end of Boulevard of the Generals behind an industrial facility. The proposed retrofit consists of converting the existing dry detention basin to a dry extended detention basin with a combination forebay, swale and micro pool areas. The basin has a drainage area of 45.39 acres and will achieve a total sediment reduction of 33,070.94 lbs/yr. The impaired receiving stream for the basin retrofit is the Indian Creek, which is part of the Mingo Creek-Schuylkill River HUC12.

Jeffersonville Golf Club Stream Restoration Phase I

A stream restoration project is proposed along three (3) sections of tributaries to Indian Creek within the Jeffersonville Golf Club property near Holes #2, 15 and 17/18. The lengths of stream restoration will be 292 feet, 270 feet, and 382 feet, respectively. These stretches of stream are significantly eroded and will be restored and revegetated. The stream restoration segment at Hole #2 has a

drainage area of 217 acres and will achieve a total sediment reduction of 13,104.96 lbs/yr. The stream restoration segment at Hole #15 has a drainage area of 32 acres and will achieve a total sediment reduction of 12,117.60 lbs/yr. The stream restoration segment at Holes #17/18 has a drainage area of 28 acres and will achieve a total sediment reduction of 17,144.16 lbs/yr. The impaired receiving stream is Indian Creek, which is located in the Mingo Creek/Schuylkill River HUC 12. The design of this project is complete. Design and permitting is complete and is anticipated to be constructed in 2019.

Jeffersonville Golf Club Stream Restoration Phase II Stream Restoration

A stream restoration project is proposed along a 350 linear foot section of a headwater tributary of Indian Creek within Jeffersonville Golf Club. The proposed project approach will involve floodplain restoration, restoring the stream corridor and creating substantial wetlands within the floodplain along the entire length of the restoration. The length of the proposed stream restoration will be a minimum of 350 feet, achieving a total sediment reduction of 19,582.87 lbs/yr. Reductions were quantified using the sediment removal efficiency rate of 44.88 lbs/ft/yr for Stream Restoration and 60 percent sediment removal efficiency rate for Wet Ponds/Wetlands for the areas draining to the wetlands that will be created within the floodplain from the BMP Effectiveness Values Table. The impaired stream is Indian Creek, which is located in the Mingo Creek/Schuylkill River HUC 12.

Alexander Drive Basin Retrofit

The basin to be retrofitted is located on the corner of where Alexander Drive meets Burnside Avenue. The proposed retrofit consists of converting the existing dry detention basin into a dry extended detention basin/wet pond. A concept plan was completed for this project in May 2019. The basin has a drainage area of 37.81 acres. The proposed retrofit will achieve a total sediment reduction of 15,263.94 lbs/yr. The impaired receiving stream for the basin retrofit is the Stony Creek, which is part of the Stony Creek HUC 12.

4.6 Funding Mechanisms

The funding mechanisms and estimated costs for the implementation of each proposed BMP are included in Table 9.

Table 9: Proposed BMP Funding Mechanisms

Proposed BMP	Property Owner	Funding Mechanism
Burnside Village Basin Retrofit	West Norriton Township	Part of a 2015 Growing Greener Grant for $220,876
Blue Dove Basin Retrofit	KI Real Estate Valley Forge, LLC	West Norriton Township General Fund
Jeffersonville Golf Club Stream Restoration Phase I	West Norriton Township	Part of a 2015 Growing Greener Grant for $220,876

Jeffersonville Golf Club Phase II	West Norriton Township	West Norriton Township General Fund
Alexander Drive Basin Retrofit	West Norriton Township	West Norriton Township General Fund

4.7 Operations and Maintenance

To ensure the long-term effectiveness of these proposed BMPs, operation and maintenance (O&M) is crucial. The chart below (Table 9) outlines the responsible party and the necessary O&M practices required for each proposed BMP (Pennsylvania Stormwater BMP Manual, December 30, 2006).

Table 10: Proposed BMP O&M Responsibilities

BMP	Owner	Responsible Party for O&M	O&M Responsibilities
Burnside Village Basin Retrofit	West Norriton Township	West Norriton Township	• Inspect at least 2x per year • Clean inlets at least 2x per year • Maintain vegetation • Remove invasive species • Prohibit vehicular access • Avoid excessive compaction by mowers • Drain-down time < 72 hours • Mow as appropriate (remove clippings) • Remove accumulated sediment
Blue Dove Basin Retrofit	KI Real Estate Valley Forge, LLC	KI Real Estate Valley Forge, LLC	
Alexander Drive Basin Retrofit	West Norriton Township	West Norriton Township	
Jeffersonville Golf Club Stream Restoration Phases I and II	West Norriton Township	West Norriton Township	• Inspect at least 2x per year • Avoid excess use of fertilizers, pesticides, or other chemicals • Mow surrounding area as appropriate (remove clippings) • Remove invasive species • Remove debris

5.0 Conclusion

The required ten (10) percent sediment reduction has been achieved through the proposed implementation of the Burnside Basin Retrofit and the Jeffersonville Golf Club Stream Restoration Project. These BMPs will be implemented within five (5) years of the PA DEP approval date of this Pollutant Reduction Plan (PRP).

6.0 Definitions

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, structural controls (e.g., infiltration trenches), design criteria, maintenance procedures, and other management practices to prevent or reduce pollution to the waters of the Commonwealth. BMPs include Erosion and Sedimentation Control Plans, Post Construction Stormwater Management Plans, MS4 TMDL

Plans, Stormwater Management Act Plans, and other treatment requirements, operating procedures and practices to control runoff, spillage or leaks, sludge or waste disposal, drainage from raw material storage, and methods to reduce pollution, to recharge groundwater, to enhance stream base flow and to reduce the threat of flooding and stream bank erosion. [NPDES Stormwater Discharges from Small MS4s General Permit 5/2016 (PAG-13)]

Municipal Separate Storm Sewer System (MS4): All separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems pursuant to 40 CFR §§ 122.26(b)(18), or designated as regulated under 40 CFR § 122.26(a)(1)(v). [PAG-13]

National Pollutant Discharge Elimination System (NPDES): A permit issued under 25 Pa. Code Chapter 92a (relating to National Pollutant Discharge Elimination System permitting, monitoring and compliance) for the discharge or potential discharge of pollutants from a point source to surface waters. [PAG-13]

Outfall: A "Point Source" as defined by 40 CFR § 122.2 is the point where an MS4 discharges stormwater to other surface waters of this Commonwealth. This does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream and are used to convey waters of the Commonwealth (40 CFR § 122.26 (b) (9)). [PAG-13]

Owner or operator: The owner or operator of any "facility" or "activity" subject to regulation under the NPDES program. [PAG-13]'

Parsing: A process in which land area is removed from a Planning Area in order to calculate the actual or target pollutant loads that are applicable to an MS4. [NPDES from Small MS4 PRP Instructions-Attachment A]

Planning Area: All of the storm sewersheds that an MS4 must calculate existing loads and plan load reductions for. [NPDES from Small MS4 PRP Instructions]

Pollutant: Any contaminant or other alteration of the physical, chemical, biological, or radiological integrity of surface water which causes or has the potential to cause pollution as defined in section 1 of The Clean Streams Law, 35 P.S. § 691.1. [PAG-13]

Storm Sewershed: The catchment area that drains into the storm sewer system based on the surface topography in the area served by the storm sewer. (Source: NPDES Stormwater Discharges from Small MS4s General Permit [PAG-13]

Stormwater: Runoff from precipitation, snow melt runoff and surface runoff and drainage. "Stormwater" has the same meaning as "Storm Water." (Source: NPDES Stormwater Discharges from Small MS4s General Permit [PAG-13]

Urbanized Area (UA): Land area comprising one or more places (central place(s)) and the adjacent densely settled surrounding area (urban fringe) that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile, as defined by the United States Bureau of the Census and as determined by the latest available decennial census. The UA outlines the extent of automatically regulated areas. UA maps are available at: http://www.epa.gov/npdes/stormwater/urbanmaps,
or at: http://www.epa.gov/enviro/html/em/index.html. [PAG-13]

Appendix A

Public Comment and Responses

21ST CENTURY media

digital first MEDIA

PHILADELPHIA GROUP

AFFIDAVIT OF PUBLICATION

307 Derstine Avenue • Lansdale, PA 19446

WEST NORRITON TOWNSHIP
1630 W MARSHALL STREET
NORRISTOWN, PA 19403
Attention:

STATE OF PENNSYLVANIA,
COUNTY OF MONTGOMERY

The undersigned Anne Kenny, being duly sworn the he/she is the principal clerk of The Times Herald, Times Herald Digital, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:

WEST NORRITON TOWNSHIP

Published in the following edition(s):

The Times Herald	06/05/19
Times Herald Digital	06/05/19

WEST NORRITON TOWNSHIP
MONTGOMERY COUNTY, PA

PUBLIC NOTICE

The West Norriton Township Pollutant Reduction Plan for Stony Creek, Indian Creek, and unnamed tributaries to the Schuylkill River has been updated and is available for public review on the Township website at http://www.westnorritontwp.org/ and by request at the Township Building at 1630 W. Marshall St., Jeffersonville, PA 19403. Written comments from the public will be accepted for a period of 30 days from the date of this public notice. Verbal and written comments will also be accepted during the Board of Commissioners meeting scheduled for July 9, 2019 at 7:00pm at the Township Building. The Pollutant Reduction Plan describes proposed measures to be taken to reduce sediment pollution to Stony Creek, Indian Creek, and unnamed tributaries to the Schuylkill River within West Norriton Township and is a requirement of the Township's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit.
NTH 6/5 1-a

Sworn to the subscribed before me this 6/5/19.

Jacqueline A Kelly

Notary Public, State of Pennsylvania
Acting in County of Montgomery

Commonwealth of Pennsylvania - Notary Seal
Jacqueline A. Kelly, Notary Public
Montgomery County
My commission expires July 27, 2020
Commission number 1083443
Member, Pennsylvania Association of Notaries

Advertisement Information

Client Id: 882782 **Ad Id:** 1813791 **PO:** prp **Sales Person:** 093302

West Norriton Township
Regular Meeting
July 9, 2019
7:00 PM

1. Call To Order And Pledge Of Allegiance
2. Presentation Of W. Main Street Corridor Study By Maggie Dobbs Of Montgomery County Planning Commission
3. Presentation Of Pollution Reduction Plan (PRP) By Beth Uhler Of Cedarville Engineering
4. Approval Of Minutes

   June 4, 2019 - Work Session; and June 11, 2019 - Board of Commissioners Meeting
5. Report Of Bills - Donna Horn

   Documents:

   FINANCE - JUNE 2019.PDF
6. Department Reports
   a. Administration & Finance - Jason Bobst
   b. Public Safety - Chief A. D. Mabry

      Documents:

      POLICE - JUNE 2019.PDF
   c. Public Works & Planning - Michael Valyo

      Documents:

      PUBLIC WORKS - JUNE 2019.PDF
      BLDG. PERMIT REPORT - JUNE 2019.PDF
   d. Parks & Recreation - Jonathan Dzedzy

      Documents:

      RECREATION - JUNE 2019.PDF
   e. Jeffersonville Golf Club - Michael Housley

      Documents:

      GOLF - JUNE 2019.PDF
   f. Engineering

f.1. Sanitary Sewer Engineer - TJ Figaniak

Documents:

SEWER - 06-2019.PDF

f.2. Township Engineer - Erik Garton

Documents:

ENGINEER - JUNE 2019.PDF

7. Commissioners Comments

8. Public Comment

   a. Recognize individuals that are taxpayers or residents of West Norriton Township wishing to offer comment.
   b. Require the name and address of such persons wishing to comment.
   c. Permit each individual at minimum one (1) opportunity to speak. The President may require an individual who has already spoken to wait until all others wishing to speak have had the opportunity before permitting an additional opportunity to speak. Once all others have had the opportunity to speak, the President shall determine whether time would allow for additional comment from the individual wishing to speak. Such a determination shall be based solely on the factor of time and shall not be based on the content or viewpoint of the particular individual (s) seeking additional opportunity to speak.
   d. Provide for a three (3) minute maximum for each individual to offer public comment **specifically related to agenda items only**. There shall be no ceding or assigning of time. In no case shall a time limit of fewer than two (2) minutes be designated. It may be requested that a spokesperson from a group address the Board of Commissioners.
   e. Preserve order by prohibiting disruptive conduct including, but not limited to, speaking by any person who is not, at that time, taking part in public comment.

9. Discussion Items:

   a. Proposed 2019 Capital Borrowing

   b. Additional Allotment To Jefferson Fire Company No. 1

   c. Norristown Municipal Waste Authority 2003 Consent Order & Agreement And Amendment Of 2008

      Documents:

      20190625135732.PDF

   d. Membership In PA League Of Cities

   e. Amendment To Fee Schedule For Use & Occupancy Inspections

10. New Business

   a. Motion To Adopt Ordinance 2019-735 Amending Special Events License Requirements And Permitting Guidelines

      Documents:

ORDINANCE - AMENDING SPECIAL EVENT PERMITS.DOC

b. Motion To Adopt Resolution #19-1634 Authorizing Issuance Of Individual Procurement Cards

Documents:

RESOLUTION 19-1634.PDF

11. Schedule Of Meetings

a. Environmental Advisory Council - August 7th @ 7:00 PM; b. Zoning Hearing Board - None c.

12. Adjournment

www.westnorritontwp.org

July 9,2019

The regular monthly meeting of the Board of Commissioners of West Norriton Township was convened at 7:00 PM on the above date by President Miller. Commissioners Eckles, Kennedy, McKenzie and Milazzo were in attendance. Also, present were: Jason Bobst; Dan Grieser, Esquire; Kathy Frederick; A. Dale Mabry; Michael Kelly; Donna Horn; Michael Valyo; Michael Housley; T.J. Figaniak; and Ed Brown. There were nine (9) people in the audience, including the press.

After reciting the Pledge of Allegiance, the meeting proceeded.

Presentations:
W. Main Street Corridor Study

Maggie Dobbs of the Montgomery County Planning Commission presented the final master vision plan from the W. Main Street Corridor Study. Ms. Dobbs explained the Commission's study and identified the section of W. Main Street which comprises the area. The presentation included slides depicting, among other things: current conditions, land uses, zoned districts, transportation, building setbacks, design guidelines, interim improvements and implementation. According to Ms. Dobbs, the real changes come with the Township's adoption of regulations via resolution, zoning, and land development ordinances. In response to Ms. Milazzo's inquiry about the adoption process, Mr. Bobst stated that steps include a formal Resolution to adopt the Main Street Corridor Study and, thereafter, moving forward with zoning regulations.

Pollution Reduction Plan

Beth Uhler of Cedarville Engineering presented the West Norriton Township Pollutant Reduction Plan (PRP) as part of the NPDES MS4 Program. It was explained by Ms. Uhler that the NPDES MS4 is a federal program administered by the state and implemented by municipalities to recognize and reduce stormwater sediment. The current sediment reduction guideline is 10% over a five (5) year permitting term. As relates directly to West Norriton Township, Ms. Uhler stated that the retrofits of the Burnside Basin, Alexander Drive Basin, and Blue Dove Basin, as well as the stream restoration at JGC are some of the BMP's (Best Management Practices) counting toward our 10% reduction requirements.

In response to an inquiry by Ms. Milazzo regarding the Plan approval date, Ms. Uhler stated that, although the DEP has informally accepted the PRP, it is not yet approved; therefore, the 5 year term has not "officially" started, but that the Township has already met 7% of the 10% reduction requirement and "should be in very good shape."

Minutes Approval

Upon motion of Ms. Milazzo, seconded by Mr. McKenzie and unanimously passed by the Board were the minutes of its work session of June 4th and the Board's regular meeting of June 11th.

Report of Bills
Approval of checks

Ms. Horn read the Finance Committee Report and requested approval of: General Fund and Golf Club payroll checks in the amount of $33,582.05; payroll vouchers in the amount of $245,861.09; and the Payment Approval Report in the amount of $506,571.47.

Committee Reports: Administration & Finance

Mr. Bobst enumerated and highlighted the items on the Agenda under New Business and stated that the Township is in a healthy financial condition, with the biggest drivers to that condition being deed transfer taxes (102% above projected), increased building permits (over 70% of projection already collected) and interest received (up 64%) due to changing banking institutions. According to Mr. Bobst, the only pending item is the police arbitration award.

Also, the addition of new items to the Agenda were requested by Mr. Bobst as follows:

- *Withdrawal of pending litigation in the Court of Common Pleas of Montgomery County against Trinity Broadcasting, lessee of the radio station at JGC; and*

- *Termination of the lease with Trinity Broadcasting for the radio station at JGC for failure to pay.*

Thereafter, it was announced by Mr. Bobst that he received notice from "The Times Herald" that West Norriton Township received its Best of Montgomery County awards for "Best Community" and "Best Summer Camp".

Treasurer Horn did not present her report at the meeting; however, she has submitted her summary which shows cash balances in the various funds as follows:

	May 31st	*June 30th*
General Fund	*10,632,949.78*	*10,678,986.90*
PLGIT 10105000	*14,971.59*	*14,999.02*
PLGIT CD	*0.00*	*0.00*
Continental CD	*0.00*	*0.00*
Golf Fund	*577.46*	*111,016.46*
Escrow Fund	*476,273.49*	*508,229.80*
Sinking Fund	*6,128.07*	*6,135.57*
Liquid Fuels	*546,547.62*	*541,702.91*
Capital Reserve PLGIT	*21,308.10*	*21,547.35*
Capital Reserve CD	*0.00*	*0.00*
Capital Reserve	*0.00*	*0.00*
Sewer Capital Acct	*1,808,265.26*	*1,808,472.77*
Vehicle Replacement Fund	*526,201.93*	*673,374.60*
Police Pension Citizens	*176,715.17*	*188,430.55*
Non-Uniform Pension Citizens	*2,950.78*	*3,927.73*
Grants, DUI	*0.00*	*0.00*
Grants, Misc.	*115,596.66*	*115,734.43*
Traffic Impact Fee	*459,338.85*	*459,886.29*

Public Safety

Chief Mabry highlighted his public safety report and reminded all residents to lock their vehicle doors and bikes that the summer season sees and uptick in thefts.

In response to an inquiry by Mr. Miller, Chief Mabry confirmed that the newly hired police officers are all doing well in their positions.

Public Works & Planning *The highlights of the Public Works and Building-Plumbing reports were presented by Mr. Valyo.*

It was noted by Mr. Valyo that the 2019 Street Paving Project is due to be finished tomorrow, which project is paid for by liquid fuels funds and not taxpayers' money, and that the bid opening for the purchase of the new leaf machine is tomorrow.

Recreation *The Recreation report was prepared and highlighted by Mr. Dzedzy, who announced the showing of "Ralph Breaks the Internet" at the upcoming movie night on August 24th.*

Jeffersonville Golf Club *Mr. Housley presented the monthly and quarterly golf report and was "pleased" to announce that every month in the 2nd quarter of 2019 beat the corresponding month in 2018, and that June of 2019 was the course's best month ever. Also, it was mentioned by Mr. Housley that the new sign is fantastic and the course looks great.*

Also, Mr. Bobst mentioned possible project funding opportunities/grants through the state for improvements at the golf club, which opportunities/grants, according to Mr. Bobst, are supported by our local representatives.

Sanitary Sewer *The highlights of the monthly Sanitary Report of Gilmore & Associates were presented by Mr. Figaniak, which included the I & I work and the DEP's lifting of its moratorium. According to Mr. Figaniak, we need to continue to maintain the sewer system and "don't take our foot off the gas."*

Engineer *The engineer's report of Gilmore & Associates was prepared and highlighted by Mr. Garton who mentioned that the intersection improvements meetings were recently held with the residents whose properties will be directly impacted. In response to an inquiry by Mr. Kennedy, Mr. Garton stated that there will be no severe impact to the roadway during construction.*

Upon motion of Ms. Eckles, seconded by Ms. Milazzo and unanimously passed, the Report of Bills and all monthly Department Reports were approved.

Commissioners' Comment *Ms. Milazzo commented that she was fortunate to attend the PSATC conference last month at which Mr. Kennedy received an award for his 12+ years of service as a Township*

Commissioner. Ms. Milazzo also congratulated Township staff for helping the residents vote us as Montgomery County's Best Community.

Public Comment *Mary Ellen Moran of 714 Port Indian Road stated that she is surprised that the Blue Dove Basin is on the list of "accomplishments" as regards the PRP since, in her opinion, the basin doesn't operate properly. It was mentioned by Mr. Brown that typically construction is stabilized upon its completion and not early on in the process…as is the case with the Blue Dove Basin. Mr. Miller noted that he met with State Representative Webster to implore his help with stormwater and environmental issues as he "wants to use all the tools in our arsenal to address issues."*

There being no further public comment offered, upon motion of Mr. McKenzie, seconded by Ms. Milazzo and unanimously approved, the public comment portion of the meeting was closed.

Discussion Items *Items presented by Mr. Bobst for discussion:*

- *Proposed 2019 Capital Borrowing – Mr. Bobst prepared a power point presentation of proposed projects in the Township and the estimated costs thereof, including: Burnside Avenue property purchase; Centennial Park parking lot; parking lot and restrooms at the Jefferson Firehouse recreation site; Padden Park parking lot; Padden Park pavilion, restroom and playground; road paving at Regents Park, Sterigere Street and the Township building for a total of $3.6M for all projects. It was stated by Mr. Bobst that he is not looking to raise taxes for these projects, only use debt service. Ms. Milazzo suggested the use of speed bumps in Regents Park to deter speeding while Mr. Miller inquired about the status of the DCNR grant for the purchase of the Burnside Avenue property and the freeing up of money in the event the grant application is successful. Also, Ms. Eckles inquired about an even distribution of priority for funds between public works and recreation. Per Mr. Bobst, borrowing options to be presented and discussed at a future time.*

- *Additional Allotment to the Jefferson Fire Company No. 1 of one month, $14,500.00, to close the gap between the Fire Company's expenses and its budget allotment from the Township*

- *The Norristown Municipal Waste Authority Consent Order & Agreement of 2003 and Amendment thereto of 2008 – DEP moratorium lifted;*

- *Membership in PA League of Cities – PSATC runs the PA League of Cities and the potential savings in w/c rates and insurance costs is greater than the $1,489.11 dues. According to Mr. Miller, membership is a "no brainer";*

- *Amending Fee Schedule for increase in U&O Inspection fee from $75.00 to $150.00. The current fee of $75.00 was implemented in 2004 and has not increased, despite neighboring municipalities' fees ranging from $150.00 - $200.00.*

New Business

Upon motion of Mr. Miller, seconded by Mr. McKenzie and unanimously agreed, the Board adopted Ordinance No. 2019-735 Amending Special Events License Requirements and Permitting Guidelines (copy attached).

Upon motion of Mr. Miller, seconded by Ms. Milazzo and unanimously agreed, the Board adopted Resolution #19-1634 Authorizing Issuance of Individual Procurement Cards (copy attached).

Upon motion of Ms. Milazzo, seconded by Ms. Eckles and unanimously agreed, the Board authorized staff to withdrawal litigation at MCCCP Docket #2018-26096 against Trinity Broadcasting.

Upon motion of Ms. Milazzo, seconded by Ms. Eckles and unanimously agreed, the Board authorized staff to take appropriate action to terminate the lease with Trinity Broadcasting.

Upon motion of Mr. Kennedy, seconded by Mr. Miller and unanimously agree, the Board approved a one-time additional allotment to the Jefferson Fire Company No. 1 of $14,500.00.

Schedule of Meetings

Mr. Bobst announced that upcoming meetings are scheduled as follows: EAC on August 7th at 7:00 PM; Human Relations Commission on July 25th at 7:00 PM; and no meetings of the Planning Commission or Zoning Hearing Board.

Adjournment

There being no further business, at 9:05 PM, on motion of Ms. Milazzo, seconded by Ms. McKenzie, the public meeting was adjourned.

Kathy Frederick
Assistant Secretary

Public Comment received by the Township via email on July 12, 2019 in response the Pollutant Reduction Plan (PRP) presentation by CEDARVILLE Engineering Group, LLC at the July 9, 2019 Board of Commissioners meeting:

Response to Presentation of Pollution Reduction Plan

West Norriton Township has vast differences in its topography, from flat areas to rolling hills. There are at least 47 basins to collect water during rainstorms. Because of land development in the area and a lack of adequate environmental standards in the past, the water-runoff downhill has become a real issue for our township. Poor maintenance of basins and erosion have cause significant pollution in the Schuylkill River.

During the work session of the West Norriton Township Board of Commissioners held on February 6, 2018, the new ownership team representing Lot #227 in the Valley Forge Business Center (the "Blue Dove Basin property") submitted a request for a land development waiver. They were requesting zoning relief with regard to the riparian buffer corridor boundaries for construction of a new building and parking lot. West Norriton Township expedited the developers' paperwork because the Blue Dove Basin was in serious disrepair, and the Township's Board of Commissioners bypassed the normally-anticipated scheduling of a public meeting that would review plans by the Township's own planning commission and allow public scrutiny and comment. Subsequent to the Township's approval of the waiver, the developer performed some repairs to the basin but also cut down many trees on the property. They constructed a berm and an outlet that leads to the Indian Creek below. This creek is a secondary tributary to the Schuylkill River.

The riparian corridor ordinance states that trees are not to be removed within 25 feet from streams; however, in the case of this project, the construction is within 5 feet (as the crow flies). I have spoken about this many times in the Public Comment portion of our Township meetings and have been routinely "brushed off." The public hearing for this zoning variance was originally scheduled to be held in March of 2018 but was delayed by one month because of a snowstorm. Unfortunately, I was not able to attend the rescheduled hearing in April because I had a previously scheduled engagement out of town.

I believe the developer has tried to circumvent West Norriton Township on a number of issues to include directly approaching Pennsylvania's Department of Environmental Protection to obtain their needed EDU's (essentially bypassing the Township's interim review). I have listened to their wood chipper for at least two weeks as they cut down and chipped the trees to enable construction of their new building and parking lot. I spoke before the Board of Commissioners at a township meeting and informed them that the basin was not holding water; the Township Engineer stated he would "check it out." He reported at the next meeting that there was not a problem there. But this is not accurate.

Every time there are substantial rainstorms affecting my neighborhood, the water that is to be retained in the Blue Dove Basin runs straight through the property in question and around their reconstructed catch-basin, cascading down the adjacent steep hill/ravine and into the Indian Creek located directly below. Their property, located above that hill, seems to be eroding worse than before the berm was supposedly "fixed," as reported by the township's engineering consultant. I reported again at a township meeting that the basin was not functioning as intended. I noted in my public comments that the developer was in the process of constructing their new buildings and flattening the area for the parking lot; the township engineer indicated that was OK and that the property owner would not be able to receive their "certificate of occupancy" until they fixed the basin.

For the past year, the banks of my neighbors' property along the Indian Creek have eroded and many large trees have fallen. This does not seem to be a concern of the Township Engineer. I notified West Norriton's Environmental Advisory Council (EAC) of the problem and they "looked into it.", they concluded that the basin was no operational. I also spoke directly with State Representative Joe Webster on West Norriton Day in May 2019 and his staff members have investigated the matter. They informed that the Township was working to resolve the issue. They suggested that I contact the Environmental Protection Agency as they could no longer pursue the matter.

During the West Norriton Township meeting held on July 9, 2019, Ms. Beth Uhler of Cedarville Engineering gave the firm's MS4-related presentation to the West Norriton Board of Commissioners. In it she stated that the Blue Dove Basin was one of the key reasons we were getting our MS4 permit renewed. I was dumbfounded! I spoke with her after her presentation and she seems "in the dark' with regard to the amount of mature trees lost as a result of construction activities on Lot #227 and the zoning variance the developer received to construct new buildings and impervious surfaces on the property. She believes the Township is doing a great job….

I have stepped up to act as an advocate for the needs of the local environment in my unique and historic residential environment of Port Indian. I have observed approximately forty mature trees cut down that had previously sustained the soil and reduced streambank erosion. The latest batch of environmental problems affecting my community seem to fall on deaf ears in West Norriton Township.

I regularly attend township meetings and did not hear of the citizens' chance to provide public comments regarding the renewal of the MS4 permit application until the regularly-scheduled Board of Commissioners' meeting held this past Tuesday (July 9, 2019). Ms. Uhler stated the citizens have already had one month to respond (between June 12 and July 12), but there was no public notice about this comment period. Nothing has been recently posted on the homepage of the Township's website about MS4 permitting, nor has an email been sent out to those of us signed up to receive important updates from West Norriton Township's administrative team.

I remain deeply concerned about the future of my neighborhood, the Indian Creek, and the Schuylkill River . The continue to be seriously impacted by the ongoing failures of the Blue Dove Basin in the Valley Forge Business Center.

Response to the Public Comment:

An emergency repair was completed by the property owner of Blue Dove Basin in 2018 and included repairs to the basin berm, primary riser spillway, and dredging of sediment from the basin. This activity was reviewed and approved by the Pennsylvania Department of Environmental Protection (PA DEP), Montgomery County Conservation District (MCCD), and West Norriton Township. The proposed retrofit portion of the project is still pending.

Appendix B

Developed Land Loading Rates for PA Counties

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.

Appendix C

Supporting Calculations

Conversion from NLCD 2011 Land Use Designation to Impervious and Pervious Areas

MUNICIPALITY: West Norriton Township
MS4 SEWER SHED: Indian Creek/Stoney Creek/UNT to Schuylkill
COUNTY: Montgomery

Developed Land:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	617.23	19	117.27	499.96
Developed, Low Intensity	609.06	49	298.44	310.62
Developed, Medium Intensity	234.23	79	185.04	49.19
Developed, High Intensity	84.83	100	84.83	
Hay/Pasture	15.12	0		15.12
Cultivated Crops	0.82	0		0.82
Shrub/Scrub	1.29	0		1.29
Mixed Forest	4.01	0		4.01
Deciduous Forest	28.20	0		6.34
Total	**1594.79**		**685.58**	**887.35**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP

CEDARVILLE
Engineering Group, LLC

Existing Loads using Chesapeake Bay Loading Rates

MUNICIPALITY: West Norriton Township
MS4 SEWER SHED: Indian Creek/Stony Creek/UNT to Schuylkill River
COUNTY: Montgomery

Developed Land:

		Pollutant Loading Rates[1]			Pollutant Load		
Land Use	Area (ac)	TN (lbs/ac/yr)	TP (lbs/ac/yr)	TSS [Sediment] (lbs/ac/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	685.58	23.06	2.28	1,839.00	15809.47	1563.12	1260781.62
Pervious, Developed	887.35	20.72	0.84	264.96	18385.89	745.37	235112.26
Indian Creek Total Pollutant Load					**34,195.37**	**2,308.50**	**1,495,893.88**

CEDARVILLE
Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Oakland Farms Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	Wagon Wheel Rd
GPS LOCATION:	Lat: 40.1432 / Long: -75.3812
TOTAL DRAINAGE AREA TREATED (ac):	60.48
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	34.86	19	6.62	28.24
Developed, Low Intensity	22.14	49	10.85	11.29
Developed, Medium Intensity	0.43	79	0.34	0.09
Hay/Pasture	3.05	0		3.05
		0		
Total	**60.48**		**17.81**	**42.67**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	17.81	21.15	1.46	1,839.00	20%	20%	60%	75.34	5.20	19653.43
Pervious, Developed	42.67	14.09	0.36	264.96	20%	20%	60%	120.24	3.07	6783.24
							Total Pollutant Reduction	**195.58**	**8.27**	**26,436.67**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Fairways Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	101 Fairway Lane
GPS LOCATION:	Lat: 40.1320 / Long: -75.3907
TOTAL DRAINAGE AREA TREATED (ac):	7.14
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	4.41	19	0.84	3.57
Developed, Low Intensity	0.09	49	0.04	0.05
Developed, Medium Intensity	2.42	79	1.91	0.51
Developed, High Intensity	0.22	100	0.22	
		0		
Total	**7.14**		**3.01**	**4.13**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	3.01	21.15	1.46	1,839.00	20%	20%	60%	12.75	0.88	3325.43
Pervious, Developed	4.13	14.09	0.36	264.96	20%	20%	60%	11.63	0.30	655.97
							Total Pollutant Reduction	**24.38**	**1.18**	**3,981.39**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Wawa Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	2544 W. Main Street
GPS LOCATION:	Lat: 40.1404 / Long: -75.3895
TOTAL DRAINAGE AREA TREATED (ac):	3.99
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	0.47	19	0.09	0.38
Developed, Low Intensity	0.38	49	0.19	0.19
Developed, Medium Intensity	1.77	79	1.40	0.37
Developed, High Intensity	1.28	100	1.28	
Deciduous Forest	0.09	0		0.09
Total	**3.99**		**2.95**	**1.04**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	2.95	21.15	1.46	1,839.00	20%	20%	60%	12.49	0.86	3259.22
Pervious, Developed	1.04	14.09	0.36	264.96	20%	20%	60%	2.92	0.07	164.73
							Total Pollutant Reduction	**15.41**	**0.94**	**3,423.95**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Yocum Roofing Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	48 S. Trooper Road, Norristown PA
GPS LOCATION:	Lat: 40.1404 / Long: -75.390
TOTAL DRAINAGE AREA TREATED (ac):	1.9
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	0.45	19	0.09	0.36
Developed, Low Intensity	0.56	49	0.27	0.29
Developed, Medium Intensity	0.61	79	0.48	0.13
Developed, High Intensity	0.10	100	0.10	
Deciduous Forest	0.18	0		0.18
Total	**1.90**		**0.94**	**0.96**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	0.94	21.15	1.46	1,839.00	20%	20%	60%	3.98	0.28	1039.18
Pervious, Developed	0.96	14.09	0.36	264.96	20%	20%	60%	2.70	0.07	152.33
							Total Pollutant Reduction	**6.68**	**0.34**	**1,191.51**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Burnside Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	Sterigere St
GPS LOCATION:	Lat: 40.1414 / Long: -75.3679
TOTAL DRAINAGE AREA TREATED (ac):	87.552
BMP EFFECTIVENESS VALUE TYPE:	Dry Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	47.89	19	9.10	38.79
Developed, Low Intensity	39.02	49	19.12	19.90
Developed, Medium Intensity	0.75	79	0.59	0.16
Deciduous Forest	0.01	0		0.01
Total	**87.55**		**28.81**	**58.86**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	28.81	21.15	1.46	1,839.00	5%	10%	10%	30.47	4.21	5298.16
Pervious, Developed	58.86	14.09	0.36	264.96	5%	10%	10%	41.47	2.12	1559.55
							Total Pollutant Reduction	**71.93**	**6.33**	**6,857.71**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Blue Dove Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	General Arnold Ave & Boulevard of the Generals (Blue Dove Basin)
GPS LOCATION:	Lat: 40.1220 / Long: -75.3956
TOTAL DRAINAGE AREA TREATED (ac):	45.39
BMP EFFECTIVENESS VALUE TYPE:	Dry Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	2.35	19	0.45	1.90
Developed, Low Intensity	8.13	49	3.98	4.15
Developed, Medium Intensity	19.43	79	15.35	4.08
Developed, High Intensity	14.60	100	14.60	
Shrub/Scrub	0.04	0		0.04
Deciduous Forest	0.84	0		0.84
Total	**45.39**		**34.38**	**11.01**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	34.38	21.15	1.46	1,839.00	5%	10%	10%	36.36	5.02	6322.46
Pervious, Developed	11.01	14.09	0.36	264.96	5%	10%	10%	7.76	0.40	291.72
							Total Pollutant Reduction	**44.11**	**5.42**	**6,614.19**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Existing BMPs

BMP NAME:	Alexander Drive Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Existing BMP
LOCATION:	Alexander Drive
GPS LOCATION:	Lat: 40.1467 / Long: -75.3684
TOTAL DRAINAGE AREA TREATED (ac):	37.81
BMP EFFECTIVENESS VALUE TYPE:	Dry Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	13.84	19	2.63	11.21
Developed, Low Intensity	17.95	49	8.80	9.15
Developed, Medium Intensity	0.63	79	0.50	0.13
Developed, High Intensity	1.11	100	1.11	
Shrub/Scrub	1.21	0		1.21
Deciduous Forest	3.07	0		3.07
Total	**37.81**		**13.03**	**24.78**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4]			Pollutant Load Reduction TN (lbs/yr)	Pollutant Load Reduction TP (lbs/yr)	Pollutant Load Reduction TSS [Sediment] (lbs/yr)
Impervious,Developed	13.03	21.15	1.46	1,839.00	5%	10%	10%	13.78	1.90	2396.22
Pervious, Developed	24.78	14.09	0.36	264.96	5%	10%	10%	17.46	0.89	656.57
							Total Pollutant Reduction	**31.24**	**2.79**	**3,052.79**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Proposed BMPs

BMP NAME:	Burnside Village Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Retrofit Facility
LOCATION:	Sterigere Street
GPS LOCATION:	Lat: 40.1414 / Long: -75.3679
TOTAL DRAINAGE AREA TREATED (ac):	87.67
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	47.89	19	9.10	38.79
Developed, Low Intensity	39.02	49	19.12	19.90
Developed, Medium Intensity	0.75	79	0.59	0.16
Deciduous Forest	0.01	0		0.01
Total	**37.81**		**28.81**	**58.86**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4] (Proposed Retrofit BMP[5] - Existing Dry Detention Basin)			Pollutant Load Reduction		
								TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	28.81	21.15	1.46	1,839.00	15%	10%	50%	91.40	4.21	26492.08
Pervious, Developed	58.86	14.09	0.36	264.96	15%	10%	50%	124.40	2.12	7797.59
							Total Pollutant Reduction	**215.80**	**6.33**	**34,289.67**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table
5. Assumed the retrofit was a dry extended detention basin

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Proposed BMPs

BMP NAME:	Blue Dove Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Retrofit Facility
LOCATION:	General Arnold Ave & Boulevard of the Generals (Blue Dove Basin)
GPS LOCATION:	Lat: 40.1220 / Long: -75.3956
TOTAL DRAINAGE AREA TREATED (ac):	45.39
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	2.35	19	0.45	1.90
Developed, Low Intensity	8.13	49	3.98	4.15
Developed, Medium Intensity	19.43	79	15.35	4.08
Developed, High Intensity	14.60	100	14.60	
Shrub/Scrub	0.04	0		0.04
Deciduous Forest	0.84	0		0.84
Total	**45.39**		**34.38**	**11.01**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4] (Proposed Retrofit BMP[5] - Existing Dry Detention Basin)			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	34.38	21.15	1.46	1,839.00	15%	10%	50%	109.07	5.02	31612.32
Pervious, Developed	11.01	14.09	0.36	264.96	15%	10%	50%	23.27	0.40	1458.62
							Total Pollutant Reduction	**132.34**	**5.42**	**33,070.94**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table
5. Assumed the retrofit was a dry extended detention basin

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Proposed BMPs

BMP NAME:	Jeffersonville Golf Club Stream Restoration- Phase I
MUNICIPALITY:	West Norriton
MS4 SEWERSHED	Indian Creek
COUNTY:	Montgomery
BMP TYPE:	New BMP
LOCATION:	Jeffersonville Golf Club
GPS LOCATION:	Lat: 40.1366 / Long: -75.3838
TOTAL DRAINAGE AREA TREATED (ac):	
BMP EFFECTIVENESS VALUE TYPE:	Stream Restoration

Stream Restoration - Pollutant Reduction:

		BMP Effectiveness Value[1]			Pollutant Load Reduction		
Location	Restoration Length (ft)	TN (lbs/ft/yr)	TP (lbs/ft/yr)	Sediment (lbs/ft/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Hole 2	292.00	0.075	0.068	44.88	21.90	19.86	13104.96
Hole 15	270.00	0.075	0.068	44.88	20.25	18.36	12117.60
Hole 17 & 18	382.00	0.075	0.068	44.88	28.65	25.98	17144.16
Total	**944.00**				**70.80**	**64.19**	**42,366.72**

1. Per PADEP NPDES BMP Effectiveness Values Table

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Proposed BMPs

BMP NAME:	Jeffersonville Golf Club Stream Restoration- Phase II
MUNICIPALITY:	West Norriton
MS4 SEWERSHED	Indian Creek
COUNTY:	Montgomery
BMP TYPE:	New BMP
LOCATION:	Jeffersonville Golf Club Stream Restoration- Phase II
GPS LOCATION:	Lat: 40.1366 / Long: -75.3838
TOTAL DRAINAGE AREA TREATED (ac):	
BMP EFFECTIVENESS VALUE TYPE:	Stream Restoration

Stream Restoration - Pollutant Reduction:

		BMP Effectiveness Value[1]			Pollutant Load Reduction		
Location	Restoration Length (ft)	TN (lbs/ft/yr)	TP (lbs/ft/yr)	Sediment (lbs/ft/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Near Hole 8	350.00	0.075	0.068	44.88	26.25	23.80	15708.00
Total	**350.00**				**26.25**	**23.80**	**15,708.00**

1. Per PADEP NPDES BMP Effectiveness Values Table

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Proposed BMPs

BMP NAME:	Jeffersonville Golf Club Stream Restoration- Phase II Constructed Wetlands
MUNICIPALITY:	West Norriton
MS4 SEWERSHED	Indian Creek
COUNTY:	Montgomery
BMP TYPE:	New BMP
LOCATION:	Jeffersonville Golf Club Stream Restoration- Phase II
GPS LOCATION:	Lat: 40.1366 / Long: -75.3838
TOTAL DRAINAGE AREA TREATED (ac):	11.45
BMP EFFECTIVENESS VALUE TYPE:	Wetlands

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	11.45	19	2.18	9.27
Total	**37.81**		**2.18**	**9.27**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4] for the Proposed BMP[5]			Pollutant Load Reduction TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious,Developed	2.18	21.15	1.46	1,839.00	20%	45%	60%	9.20	1.43	2400.45
Pervious, Developed	9.27	14.09	0.36	264.96	20%	45%	60%	26.14	1.50	1474.42
							Total Pollutant Reduction	**35.34**	**2.93**	**3,874.87**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table
5. Assumed the retrofit was a wetland

CEDARVILLE Engineering Group, LLC

Pollutant Removal Reductions using PADEP BMP Effectiveness Value Table for Proposed BMPs

BMP NAME:	Alexander Drive Basin
MUNICIPALITY:	West Norriton Township
MS4 SEWERSHED	Indian Creek/Stony Creek/UNT Schuylkill River
COUNTY:	Montgomery
BMP TYPE:	Retrofit Facility
LOCATION:	Alexander Drive
GPS LOCATION:	Lat: 40.1467 / Long: -75.3684
TOTAL DRAINAGE AREA TREATED (ac):	37.81
BMP EFFECTIVENESS VALUE TYPE:	Dry Extended Detention Basin/Wet Ponds

Developed Land Imp/Pervious Calculations:

Land Use[1]	Area (ac)	% Impervious[2]	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	13.84	19	2.63	11.21
Developed, Low Intensity	17.95	49	8.80	9.15
Developed, Medium Intensity	0.63	79	0.50	0.13
Developed, High Intensity	1.11	100	1.11	
Shrub/Scrub	1.21	0		1.21
Deciduous Forest	3.07	0		3.07
Total	**37.81**		**13.03**	**24.78**

Developed Land - Pollutant Reduction:

Land Use		Pollutant Loading Rates[3]			BMP Effectiveness Value[4] (Proposed Retrofit BMP[5] - Existing Dry Detention Basin)			Pollutant Load Reduction TN (lbs/yr)	Pollutant Load Reduction TP (lbs/yr)	Pollutant Load Reduction TSS [Sediment] (lbs/yr)
Impervious,Developed	13.03	21.15	1.46	1,839.00	15%	35%	50%	41.34	6.66	11981.09
Pervious, Developed	24.78	14.09	0.36	264.96	15%	35%	50%	52.37	3.12	3282.85
							Total Pollutant Reduction	**93.71**	**9.78**	**15,263.94**

1. NLCD 2011 Land Use and Areas
2. Highest % of impervious used from each NLCD 2011 definition per PADEP
3. From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
4. Per PADEP NPDES BMP Effectiveness Values Table
5. Assumed the retrofit was a dry extended detention basin/wet pond

CEDARVILLE Engineering Group, LLC

Pollutant Load Reduction by Existing BMPs

MUNICIPALITY: West Norriton Township
MS4 SEWER SHED: Indian Creek, UNT to Schuylkill River, Stony Creek
COUNTY: Montgomery

Existing BMP Name	BMP Drainage Area (ac)	Pollutant Reduction by BMPs		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Oakland Basin	60.48	195.58	8.27	26,436.67
Fairways Basin	7.14	24.38	1.18	3,981.39
Wawa Basin	3.99	15.41	0.94	3,423.95
Yocum Roofing Basin	1.9	6.68	0.34	1,191.51
Burnside Village Basin	37.81	71.93	6.33	6,857.71
Blue Dove Basin	45.39	44.11	5.42	6,614.20
Alexander Drive Basin	37.81	31.24	2.79	3,052.79
Total	**194.52**	**389.33**	**25.27**	**51,558.22**

PRP MS4 Sewershed	Storm sewershed Area (ac)	Existing Pollutant without BMPs			Pollutant Load with Existing BMPs		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Indian Creek, UNT to Schuylkill River, Stony Creek	1594.79	34195.37	2308.50	1495893.88	33,806.04	2,283.23	1,444,335.66
Total	**1594.79**	**34,195.37**	**2,308.50**	**1,495,893.88**	**33,806.04**	**2,283.23**	**1,444,335.66**

Sediment Load Reduction by Proposed BMPs

MUNICIPALITY: West Norriton
MS4 SEWER SHED: Indian Creek, UNT to Schuylkill River, Stony Creek
COUNTY: Montgomery

BMP Name	BMP Drainage Area (ac)	Pollutant Reduction by BMPs		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Jeffersonville GC Stream Restoration Phase I	944 L.F.	70.80	64.19	42,366.72
Burnside Village Basin Retrofit	87.67	489.82	35.69	34,289.67
Blue Dove Basin Retrofit	45.39	561.51	56.96	33,070.94
Alexander Drive Basin Retrofit	37.81	472.07	32.84	15,263.94
Jeffersonville GC Stream Restoration Phase II	350 L.F.	24.00	21.76	15,708.00
Jeffersonville GC Stream Restoration Phase II Wetlands	11.45	35.34	2.93	3,874.87
Total	**182.32**	**1594.2**	**189.682**	**144,574.14**

MS4 Sewershed	Storm sewershed Area (ac)	Existing Pollutant without BMPs			Pollutant Load with Proposed BMPs			% Reduction		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)	TN	TP	TSS [Sediment]
Indian Creek/Stony Creek/UNT to Schuylkill River	1594.79	33806.04	2283.23	1444335.66	32211.84	2093.55	1299761.52	4.72%	8.31%	10.01%
Total	**1594.79**	**33,806.04**	**2,283.23**	**1,444,335.66**	**32,211.84**	**2,093.55**	**1,299,761.52**	**4.72%**	**8.31%**	**10.01%**

Appendix D

Existing and Proposed BMP Maps

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
   -West Norriton Township

POLLUTANT REDUCTION PLAN
EXISTING BMPs

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing

- Planning Area
- PCSM BMPs
- Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown

- Streams
- Located Tributaries
- Township Roads
- State Roads
- Index Contours
- Parcels
- Township Owned Parcels
- Township Boundary

Oakland Basin

1 inch = 250 feet

0 125 250 500 Feet

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CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: FEBRUARY 2019

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
-Fairways Residential LP

10 Fairways Basin

MILL RD

EGYPT RD

PORT INDIAN RD

POLLUTANT REDUCTION PLAN EXISTING BMPs

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing

- Planning Area
- PCSM BMPs
- Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown
- Streams
- Located Tributaries
- Township Roads
- State Roads
- Index Contours
- Parcels
- Township Owned Parcels
- Township Boundary

Fairways Basin

1 inch = 100 feet

0 50 100 200 Feet

CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: FEBRUARY 2019

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
   -Frank Yocum
   Wawa, Inc.

TROOPER RD

MAIN ST

7
Yocum Roofing Basin

8
Wawa Basin

POLLUTANT REDUCTION PLAN
EXISTING BMPs

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing

Planning Area
PCSM BMPs
Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown

Streams
Located Tributaries
Township Roads
State Roads

Index Contours
Parcels
Township Owned Parcels
Township Boundary

Yocum Basin
Wawa Basin

1 inch = 100 feet

0 50 100 200 Feet

CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: FEBRUARY 2019

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
-West Norriton Township
Sterigere Street
Jeffersonville, PA 19403

POLLUTANT REDUCTION PLAN
PROPOSED BMPs

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing

Planning Area
PCSM BMPs
Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown

Streams
Located Tributaries
Township Roads
State Roads

Index Contours
Parcels
Township Owned Parcels
Township Boundary

Burnside Village Basin Retrofit

1 inch = 250 feet

0 125 250 500 Feet

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CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: FEBRUARY 2019

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
   -KI Real Estate Valley Forge LLC

GENERAL WASHINGTON AVE

BOULEVARD OF THE GENERALS

GENERAL ARMISTEAD AVE

GENERAL ARNOLD AVE

PORT INDIAN RD

Blue Dove Basin Retrofit

37
38
3
54
35
36

POLLUTANT REDUCTION PLAN PROPOSED BMPs

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing

Planning Area
PCSM BMPs
Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown

Streams
Located Tributaries
Township Roads
State Roads

Index Contours
Parcels
Township Owned Parcels
Township Boundary

Blue Dove Basin Retrofit

1 inch = 250 feet

0 125 250 500 Feet

CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: FEBRUARY 2019

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
   -West Norriton Township

POLLUTANT REDUCTION PLAN
PROPOSED BMPs

2c Jeffersonville Phase I Hole 15

5 Jeffersonville Golf Course Phase II

2b Jeffersonville Phase I Hole 17 and 18

2a Jeffersonville Phase I Hole 2

9 Fairways Basin

78 51 32 57 79 17 42 65 44 43 80 56

TROOPER RD
LAWN AVE
ROSE AVE
POTTS AVE
MAIN ST
GALBRAITH AVE
MILL RD
SCHOOL LN
EGYPT RD

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing
- Planning Area
- Phase II Wetland Drainage Area
- PCSM BMPs
- Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown
- Streams
- Located Tributaries
- Township Roads
- State Roads
- Index Contours
- Parcels
- Township Owned Parcels
- Township Boundary

Jeffersonville Golf Course Phase I & II Stream Restoration

1 inch = 250 feet

0 125 250 500 Feet

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CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: MAY 2019

NOTES:

1. Drainage area to the proposed BMP equals the storm sewershed/ planning area.

2. Property Owners:
   -West Norriton Township

POLLUTANT REDUCTION PLAN
PROPOSED BMPs

Legend

Outfalls
- Impaired
- Not Impaired

BMPs
- Proposed
- Existing

Planning Area
PCSM BMPs
Pre 2003 BMPs

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown

Streams
Located Tributaries
Township Roads
State Roads

Index Contours
Parcels
Township Owned Parcels
Township Boundary

Alexander Dr Basin Retrofit

1 inch = 250 feet

0 125 250 500 Feet

CEG CEDARVILLE

West Norriton Township, Montgomery County, Pennsylvania

MAP UPDATED: FEBRUARY 2019

Appendix E

Storm Sewershed/Planning Area Map

DEP MS4 AGGREGATED REQUIREMENTS TABLE

WEST NORRITON TWP	PAG133006	Mingo Creek-Schuylkill River, Stony Creek Mingo Creek-Schuylkill River, Plymouth Creek-Schuylkill River	Indian Creek, Stony Creek, Unnamed Tributaries to Schuylkill River Schuylkill River PCB TMDL	Appendix E-Siltation Appendix C-PCB

BEST MANAGEMENT PRACTICES (BMPs)

Number	Name	Status	Owner	Ownership
1	Burnside Village Basin Retrofit	Proposed	West Norriton Township	Township
2a	Jeffersonville GC Stream Restoration Phase I Hole 2	Proposed	West Norriton Township	Township
2b	Jeffersonville GC Stream Restoration Phase I Hole 17 & 18	Proposed	West Norriton Township	Township
2c	Jeffersonville GC Stream Restoration Phase I Hole 15	Proposed	West Norriton Township	Township
3	Blue Dove Basin Retrofit	Proposed	KI Real Estate Valley Forge LLC	Private
4	Alexander Drive Basin Retrofit	Proposed	West Norriton Township	Township
5	Jeffersonville GC Stream Restoration Phase II	Proposed	West Norriton Township	Township
6	Yocum Roofing Basin	Existing	West Norriton Township	Township
7	Wawa Basin	Existing	Wawa, Inc.	Private
8	Oakland Basin	Existing	West Norriton Township	Township
9	Fairways Basin	Existing	Fairways Residential LP	Private

WORCESTER

EAST NORRITON

LOWER PROVIDENCE

NORRISTOWN

UPPER MERION

N

W E

S

NOTES:
1. Land cover data is derived from the National Land Cover Database 2011 (NLCD 2011).
2. The entire Township is within the 2010 Urbanized Area.

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DATE: 2/11/2019

DRAWN BY: AR

1 inch = 450 feet

0 450 900 Feet

CEG CEDARVILLE

Wes Norriton Township
POLLUTANT REDUCTION PLAN PLANNING AREA MAP
MONTGOMERY COUNTY, PA

Legend

BMPs
- Proposed
- Existing

Outfalls
- Impaired
- Not Impaired

Planning Area

Parsed Areas
- Land Area in which Stormwater Runoff Does Not Enter the MS4

Township Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Township Stormwater Conveyances
- Culvert
- Infiltration Trench
- Pipe
- Swale

State Stormwater Structures
- Culvert
- Inlet
- Manhole
- Outflow
- Unknown
- Riser

State Stormwater Conveyances
- Culvert
- Pipe

Private Stormwater Structures
- Culvert
- Inflow
- Inlet
- Manhole
- Outflow
- Riser
- Unknown

Private Stormwater Conveyances
- Culvert
- Pipe
- Swale

Unknown Stormwater Structures
- Unknown

- PCSM BMPs
- Pre 2003 BMPs
- Township Roads
- State Roads
- Streams
- Located Tributaries
- Township Owned Parcels
- Parcels
- Subwatersheds
- Township Boundary

Appendix F

Land Cover Map

DEP MS4 AGGREGATED REQUIREMENTS TABLE

WEST NORRITON TWP	PAG133006	Mingo Creek-Schuylkill River, Stony Creek Mingo Creek-Schuylkill River, Plymouth Creek-Schuylkill River	Indian Creek, Stony Creek, Unnamed Tributaries to Schuylkill River Schuylkill River PCB TMDL	Appendix E-Siltation Appendix C-PCB

BEST MANAGEMENT PRACTICES (BMPs)

Number	Name	Status	Owner	Ownership
1	Burnside Village Basin Retrofit	Proposed	West Norriton Township	Township
2a	Jeffersonville GC Stream Restoration Phase I Hole 2	Proposed	West Norriton Township	Township
2b	Jeffersonville GC Stream Restoration Phase I Hole 17 & 18	Proposed	West Norriton Township	Township
2c	Jeffersonville GC Stream Restoration Phase I Hole 15	Proposed	West Norriton Township	Township
3	Blue Dove Basin Retrofit	Proposed	KI Real Estate Valley Forge LLC	Private
4	Alexander Drive Basin Retrofit	Proposed	West Norriton Township	Township
5	Jeffersonville GC Stream Restoration Phase II	Proposed	West Norriton Township	Township
6	Yocum Roofing Basin	Existing	West Norriton Township	Township
7	Wawa Basin	Existing	Wawa, Inc.	Private
8	Oakland Basin	Existing	West Norriton Township	Township
9	Fairways Basin	Existing	Fairways Residential LP	Private

NOTES:
1. Land cover data is derived from the National Land Cover Database 2011 (NLCD 2011).
2. The entire Township is within the 2010 Urbanized Area.

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DATE: 2/11/2019

DRAWN BY: AR

1 inch = 450 feet

0 450 900 Feet

CEG CEDARVILLE

Wes Norriton Township
POLLUTANT REDUCTION PLAN
LAND COVER MAP
MONTGOMERY COUNTY, PA

Legend

BMPs
- Proposed
- Existing

Outfalls
- Impaired
- Not Impaired

Land Cover
- 21- Developed, Open Space
- 22- Developed, Low Intensity
- 23- Developed, Medium Intensity
- 24- Developed, High Intensity
- 41- Deciduous Forest
- 43- Mixed Forest
- 52- Shrub/Scrub
- 81- Hay/Pasture
- 82- Cultivated Crops
- 90- Woody Wetlands
- Planning Area

Parsed Areas
- Land Area in which Stormwater Runoff Does Not Enter the MS4

- PCSM BMPs
- Pre 2003 BMPs
- Township Roads
- State Roads
- Streams
- Located Tributaries
- Township Owned Parcels
- Parcels
- Subwatersheds
- Township Boundary