Derry Township Municipal Separate Storm Sewer System (MS4)

Pollutant Reduction Plan
FINAL

Located in

Derry Township, Westmoreland County, Pennsylvania
(NPDES Permit No. PAI136136)

September 2017
Revised: March 2018
Revised August 2018

Permittee:
Derry Township Supervisors
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1. EXECUTIVE SUMMARY

This Pollutant Reduction Plan was prepared as required by the Commonwealth of Pennsylvania's Department of Environmental Protection (PADEP) as part of Derry Township's National Pollutant Discharge Elimination System (NPDES) Individual Permit for stormwater discharges from small Municipal Separate Storm Sewer Systems (MS4) into Waters of the Commonwealth impaired by siltation and/or nutrients as determined in the PADEP report entitled "Pennsylvania Integrated Water Quality Monitoring and Assessment Report (2014)."

Waters of the Commonwealth impaired by siltation and/or nutrients within Derry Township that also receive stormwater discharge from the Township's MS4 include McGee Run and its tributaries that are impaired by siltation, Saxman Run and its tributaries impaired by nutrients and siltation and Union Run and its tributaries impaired by suspended solids due to AMD. Planning areas that incorporate all MS4 sewersheds to each of the impaired waterways were delineated based on available LiDAR topographic mapping from PA DCNR. The total combined sewershed area evaluated for these impaired streams is 3,107 acres. Existing Total Suspended Solids (TSS), Total Nitrogen (TN) and Total Phosphorus (TP) loading rates into each impaired waterway based on types and areas of land uses present within each sewershed area were then calculated. PADEP mandates that TSS loads from planning areas for waterways impaired by siltation must be reduced by at least 10% over the next five year permit term commencing in March 2018 and extending to March 2023. PADEP also mandates that TP loads from sewershed areas for waterways impaired by nutrients must be reduced by at least 5% over the same five year permit term. The total minimum required TSS and TP load reduction across all evaluated sewershed areas was determined to be 149,269 pounds per year (lb/yr) and 61 lb/yr, respectively.

Reduction in the TSS and TP loads for each of the planning areas is achieved through the employment of various structural and non-structural stormwater Best Management Practices (BMPs) that, through third-party independent studies, were found to provide certain TSS and TP removal efficiencies. These removal efficiencies, also referred to as BMP Effectiveness Values, can be applied to the TSS and TP loads to each proposed BMP and a corresponding TSS and TP load reduction can be calculated. Using this methodology, a combination of BMPs that include thirteen (13) new structural BMPs, stream restoration along 300 linear feet of Saxman Run and the cleaning of 80 storm inlets per year is sufficient to effect a load reduction of 177,371 lb/yr of TSS and 179 lb/yr of TP, which exceed the minimum required load reductions. The total estimated implementation cost of this pollutant reduction plan is $449,410.17. When dispersed over the five-year implementation period given an annual interest rate of 5%, the annual cost amounts to $103,803 per year.

2. INTRODUCTION

In 2003, Derry Township was required to permit its Municipal Separate Storm Sewer System (MS4) with the Commonwealth of Pennsylvania's Department of Environmental Protection (PADEP) under the PADEP's National Pollutant Discharge Elimination System (NPDES) program for stormwater discharges from small MS4s (communities with populations less than 100,000) within urbanized areas of Pennsylvania as determined from the 2010 Census by the U.S. Census Bureau. This permit must be renewed by the Township every five years with the next permit renewal to take place in March 2018. As part of the permit renewal application, which must be submitted to PADEP by September 16, 2017, a Pollutant Reduction Plan (PRP) must be prepared by Derry Township and made available for public review and comment at least thirty (30) days prior to the permit renewal application submission deadline. After the thirty day comment period, the public comments will be responded to and the comments and responses will be submitted with the PRP.

Pollutant Reduction Plans provide a strategy for municipalities or other MS4 permittees to reduce the annual quantity of pollutants from entering rivers, streams, lakes, wetlands or other natural water bodies through their storm sewer systems for those systems that lie wholly or partially within urbanized areas as identified by the US Census Bureau's 2010 US Census. The specific pollutants targeted for reduction were identified in prior surface water quality investigations spearheaded by the PADEP and published in a report entitled "Pennsylvania Integrated Water Quality Monitoring and Assessment Report (2014)," often referred to more simply as the Integrated Report. This report summarizes water quality assessments that were performed for all major surface waters within Pennsylvania to determine which waterways have degraded or impaired water quality, the cause of the impairment and the source of the impairment. For many surface waters within Derry Township, these waters were found to be impaired by excessive siltation, sediment or suspended solids as well as excessive nutrients such as Nitrogen and Phosphorous.

This Pollutant Reduction Plan has been prepared to meet the requirements set forth by the PADEP and the U.S. Environmental Protection Agency (USEPA) for reducing sediment and nutrient pollutant loads from the Township's MS4 for nine different and discrete sewersheds of the Township. This strategy was employed due to the fact that 11.65 square miles of the Township's 97.24 total square miles lie within urbanized areas and the capital cost to implement a township-wide pollutant reduction plan would be cost-prohibitive, particularly over the five-year period in which it is expected that this plan be fully implemented.

These nine sewersheds are all located within watersheds whose surface waters are impaired by excessive sediments and/or nutrients wherein the PADEP mandates that a plan to reduce the amounts of these pollutants from entering the surface waters through the Township's MS4 be prepared and implemented. The sewersheds cover some of the most densely populated and/or urbanized areas of the Township. The selected sewersheds include the villages of Hillside and New Derry, as well as the more densely populated surrounding areas of Ethel Springs Lake, St. Clair Street, Derbytown/McFarland, Malone Road, Sulphur Run, Lower Saxman Run, and Upper Saxman Run.

3. GENERAL PERMIT INFORMATION

Table 1: General MS4 Permit Information

Permittee Name:	Derry Township Supervisors	NPDES Permit No:	PAI 136136
Mailing Address:	5321 Route 982	Effective Date:	March 10, 2014
City, State, Zip	Derry, PA 15627	Expiration Date:	March 15, 2018
MS4 Contact Person:	Vince DeCario David Slifka Jim Prohaska	Renewal Date:	September 16, 2017
Title:	Township Supervisors	Municipality:	Derry Township
Phone:	724-694-8835	County:	Westmoreland
Email:	vdecario@derrytownship.com dslifka@derrytownship.com jprohaska@derrytownship.com	Consultant Name:	Gibson-Thomas Engineering Co., Inc.
Permittee Web Address:	http://derrytownship.com	Consultant Contact Information:	1004 Ligonier Street Latrobe, PA 15650 724-539-8562 Attn: Doug Siler, P.E.

4. POLLUTANT REDUCTION PLAN REQUIREMENTS

The Derry Township MS4 has outfalls, or points of discharge, into several Waters of the Commonwealth that have been identified in the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report (Integrated Report) List 5: Pollutants as having some form of impairment. Depending on the type of impairment, the PADEP has established a specific protocol for MS4 permittees to follow in order to track and/or reduce these impairments. These protocols are presented in Appendices A through E of the PADEP PAG-13 General Permit for Stormwater Discharges from Small MS4s (PADEP Document No. 3800-PM-BCW0100d). This document is provided in Attachment A. A list of impaired waterways that receive stormwater discharge from the Derry Township MS4, their associated impairments and the corresponding pollutant control protocol as described in the PADEP PAG-13 General Permit document are listed as follows:

Table 2: MS4 Receiving Waters and Impairments

Watershed (HUC10)	Impaired Water of the Commonwealth	Impairment	PAG-13 Pollutant Control Protocol (1)
Conemaugh River	McGee Run and its Tributaries	Siltation, Excessive Algal Growth	Appendix E
Loyalhanna Creek	Saxman Run and its Tributaries	Metals, Siltation, Suspended Solids, Nutrients	Appendices A, E
Loyalhanna Creek	Loyalhanna Creek and its Tributaries	Metals, Siltation, Suspended Solids	Appendices A, E
Conemaugh River	Trout Run	Organic Enrichment/Low D.O.	Appendix E

(1) See PADEP document No. 3800-PM-BCW0100d in Attachment A for detailed descriptions of each Pollutant Control Protocol

Appendix E of the PADEP PAG-13 General Permit for Stormwater Discharges from Small MS4s mandates that an MS4 permittee that has storm outfalls from urbanized areas into waterways impaired by sediments or nutrients must demonstrate how the annual sediment pollutant loads will be decreased by at least ten percent (10%) over the course of the permittee's five-year permit period as well as nutrients be reduced by at least five percent (5%) based on Total Phosphorous (TP) loads.

Means for reducing these pollutant loads can include some combination of engineered structures and/or broader-based land management approaches or policies. These means are often referred to as Best Management Practices (BMPs), wherein structural BMPs may include engineered and constructed stormwater management facilities such as infiltration basins, detention ponds, rain gardens, bioswales, as well as other structural means for controlling stormwater pollutants such as stream restoration, permeable pavement and green roofs. Non-structural BMPs include operations and maintenance practices such as street sweeping, inlet and storm pipe cleaning, fixing and stabilizing roadside swales, grounds maintenance, policies for application of chemicals or stockpiling of material, tree planting and establishment of riparian buffers along stream banks.

Various structural BMPs will be utilized in this Pollutant Reduction Plan to provide a cost-effective approach for obtaining the 10% sediment load reduction and/or 5% TP load reduction (where applicable) from the Township's MS4 into surface waters impaired by these pollutants.

5. DRAINAGE AREA DESCRIPTION

The Derry Township MS4 permit applies only to the portions of its MS4 that lie wholly or partially within urbanized areas, or which receive storm water runoff from lands that are wholly or partially within urbanized areas. Derry Township has a total land area of 96.3 square miles, of which 11.65 square miles are considered urbanized according to the 2010 US Census. The regulated portions of the Derry Township MS4 lie within two distinct major HUC10 watersheds: the Loyalhanna Creek watershed and the Conemaugh River watershed. The urbanized area of Derry Township draining to Loyalhanna Creek is 9.2 square miles. The contributing impaired waters include Saxman, Run, and Loyalhanna Creek. The total area of the township's urbanized areas within the Conemaugh watershed is approximately 3.2 square miles and includes major tributaries Trout Run and McGee Run.

The following table summarizes the physical characteristics and the impairment pollutants of each sewershed studied in this PRP. This table provides the total sewershed area as delineated using 2-foot topographic Light Detection and Ranging (LiDAR) mapping available from the PA Department of Conservation of Natural Resources (DCNR) overlaid with mapping of the Township's storm sewer system. Areas of undeveloped land cover, developed impervious land cover and developed pervious land cover were obtained by overlaying each sewershed with the PAMAP Program Land Cover for Pennsylvania, 2005 (the most recent available land cover data) land use/land cover Geographic Information System (GIS) shapefile data created by Penn State University and made available through the Pennsylvania Spatial Database Access (PASDA) website.

Table 3: Derry Township PRP MS4 Sewershed Characteristics

Sewershed Name	Major Watershed / Minor Watershed	Sewershed Location at approx. discharge pt (Lat/Long)	Predominant Land Use / Land Cover	Impairment Pollutant(s) and Pollutant Load Reduction Requirement	Developed Impervious Area within Sewershed (Acres)	Developed Pervious Area within Sewershed (Acres)	Undeveloped Area within Sewershed (Acres)	Total Sewershed Area (Acres)
Derbytown /McFarland	Loyalhanna Creek / Lower Loyalhanna	40°19'31"/ 79°23'31.4"	Low-Density Residential	Suspended Solids – Reduce Annual Load by 10%	15.4	45.5	170.0	231.0
Lower Saxman Run	Loyalhanna Creek / Saxman Run	40°19'26.0"/ 79°22'40.1"	Low -Density Residential	Siltation, Suspended Solids – Reduce Annual Load by 10%; Nutrients – Reduce Annual Organic Load by 5% for Total Phosphorus; Metals – No Load Reductions Required	215.9	314.6	769.5	1300.1
St Clair Street	Loyalhanna Creek / Saxman Run	40°18'53.9"/ 79°22'16.6"	Commercial / Light Industrial	Siltation, Suspended Solids – Reduce Annual Load by 10%; Metals – No Load Reductions Required	39.6	21.9	15.1	76.6
Sulphur Run	Loyalhanna Creek	40°18'26.4"/ 79°22'13.4"	Low-Density Residential	Siltation, Suspended Solids – Reduce Annual Load by 10%; Metals – No Load Reductions Required	91.7	211.7	404.7	708.2
Upper Saxman Run	Loyalhanna Creek / Saxman Run	40°19'19.1"/ 79°18'54.6"	Low-Density Residential	Siltation, Suspended Solids – Reduce Annual Load by 10%; Nutrients – Reduce Annual Organic Load by 5% for Total Phosphorus; Metals – No Load Reductions Required	29.4	99.9	143.6	272.8

Sewershed Name	Major Watershed / Minor Watershed	Sewershed Location at approx. discharge pt (Lat/Long)	Predominant Land Use / Land Cover	Impairment Pollutant(s) and Pollutant Load Reduction Requirement	Developed Impervious Area within Sewershed (Acres)	Developed Pervious Area within Sewershed (Acres)	Undeveloped Area within Sewershed (Acres)	Total Sewershed Area (Acres)
Hillside	Conemaugh River / Trout Run	40°22'19.7"/ 79°16'02.1"	Wooded	Organic Enrichment, Low Dissolve Oxygen (DO) – Reduce Annual Organic Load by 5% for Total Phosphorus	0.4	7.3	29.0	36.7
New Derry East	Conemaugh River/ UNT to McGee Run and McGee Run	40°20'33.5"/ 79°18'27.3"	Maintained Open Space	Suspended Solids – Reduce Annual Load by 10%; Metals – No Load Reductions Required	17.3	16.4	148.3	181.9
Ethel Springs Lake	Conemaugh River / McGee Run	40°20'9.6" / 79°18'30.5"	Low-Density Residential	Siltation, Excessive Algal Growth – Reduce Annual Load by 10%	26.9	43.7	93.3	163.9
Malone Road	Loyalhanna Creek /Union Run	40°20'40.1" / 79°19'26.2"	Low-Density Residential	Suspended Solids – Reduce Annual Load by 10%; Metals – No Load Reductions Required	24.4	35.3	76.3	136.0
TOTALS					**461.0**	**796.4**	**1,849.9**	**3,107.2**

A. Previous Impairments

With its report entitled "TMDLs for Streams Impaired by Acid Mine Drainage in the Kiskiminetas-Conemaugh River Watershed, Pennsylvania," dated January 29, 2010, the US EPA Region III Office finalized TMDLs for the Kiskiminetas-Conemaugh River Watershed for certain pollutants found to be the principal causes of impairment for the streams and rivers within the Kiskiminetas-Conemaugh River watershed. The primary source of impairment of water quality in this watershed is Acid Mine Drainage (AMD) with the particular pollutants identified as contributing to the impairment to be Iron (Fe), Mangenese (Mn), Aluminum (Al) and sediments (as Total Suspended Solids, or TSS).

Pursuant to a letter from Mr. David B. McGulgan, Associate Director of the US EPA Water Protection Division to Mr. Stuart Gansell, Director of the PADEP Bureau of Watershed Management, the US EPA recognizes that discharges of AMD through MS4s do not necessarily result in any additional environmental harm as opposed to AMD discharging directly into receiving waters, and that redirection of the AMD discharge away from the MS4 may potentially lead to increased threats to the health, safety and welfare of the public as well as to public and private property. The US EPA also recognizes that many municipalities with permitted MS4s have no feasible options for treatment and/or disposal of AMD. Based on these remarks from the US EPA, this TMDL Strategy does not address the wasteload allocations for Iron, Mangenese, Aluminum or pH that are provided in the Kiski-Conemaugh, Sewickley Creek and Turtle Creek TMDL reports. These AMD-related pollutants were not caused by any direct or indirect actions of the Township. Therefore, this TMDL strategy focuses only on the sediment wasteload allocation for the northeastern portion of the Township's regulated MS4 that lies within the Kiskiminetas River watershed since the Township, its residents and businesses do contribute to sediment loadings into the Loyalhanna Creek watershed.

The Kiskiminetas-Conemaugh River Watershed TMDL report concluded through its analysis of the Kiski-Conemaugh watershed model that a direct correlation exists between the total iron loads and the sediment loads and that by meeting the targeted percent reduction factor for sediment wasteloads, iron load wasteload allocations will be met.

B. MS4 Map

An overall MS4 map for Derry Township as well as larger-scale maps of the sewershed and storm system of each of the ten sewershed study areas is provided in Attachment B.

6. STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (BMPS)

Below is a partial list of various structural and non-structural BMPs and their generic descriptions that have been evaluated for use in this Pollutant Reduction Plan to meet the pollutant load reduction requirements for each studied MS4 sewershed. For a more comprehensive list of stormwater BMPs and more detailed descriptions of these practices, please refer to the Pennsylvania Stormwater Best Management Practices Manual (PA Stormwater BMP Manual, 2006) developed through a cooperative effort between the PADEP and a consortium of public, private and institutional experts on stormwater management. The pollutant removal efficiencies, also referred to as effectiveness values, of the BMPs discussed below are taken from PADEP Document No. 3800-PM-BCW0100m entitled "National Pollutant Elimination System (NPDES) Stormwater Discharges from Small Municipal Separate Storm Sewer Systems BMP Effectiveness Values."

A. Rain Gardens and Bioretention Ponds

Rain gardens and bioretention ponds are structural BMPs targeted toward capturing and treating stormwater runoff. These BMPs consist of a planted impoundment area for stormwater to collect and an underlying soil media mix and stone bed to promote evapotranspiration and infiltration which in turn improve water quality. The ponding depth within the impoundment areas of rain gardens typically is limited to 12" to provide rapid draw down within 72 hours for safety since these facilities are typically located closer to areas of pedestrian and vehicular traffic circulation. Bioretention ponds are similar to rain gardens but typically are further removed from pedestrian and vehicular traffic and as such will accommodate deeper ponding depths that will allow for peak rate control of stormwater runoff as well as the infiltration and water quality treatment. The footprint for these BMPs should generally provide a maximum impervious loading ratio of 3:1, meaning for every 3 square feet of impervious cover tributary to these BMPs, 1 square foot of pond bottom area should be provided. Native vegetation with high pollutant resistance should be used. The subsurface bed can be made of a variety of materials with high infiltration and storage capacity, but typically comprise of a soil media bed consisting of a blend of sand, organic material and topsoil followed by a bed of fine-free quarried stone ½" to ¾" in size. The soil media bed can typically be 18" to 30" thick and the stone bed anywhere from 12" to 48" in thickness. The subsurface media should be amended as needed to have an infiltration rate comparable to Hyrdrologic Group B-type soils. The internal water storage layer improves treatment of nitrogen by providing an anaerobic zone resulting in greater denitrification, volume reduction benefits by enhancing infiltration, thermal load reduction, and retrofit flexibility to overcome hydraulic head constraints and help avoid existing utilities. PADEP reports that these BMPs have pollutant removal efficiencies of

55% to 90% for sediments and 45% to 85% for TP depending on the underlying soil type and underdrain scenario.

B. Infiltration Basins

Infiltration basins are structural BMPs that collect and store stormwater runoff for infiltration into the groundwater table, thereby reducing the volume of direct runoff into the receiving streams. Infiltration basins often consist of shallow impoundments that are typically impound runoff no deeper than 2 or 3 feet. The basin bottom will often consist of a 2 to 4 foot thick bed of clean stone with a mean stone size of ½" to ¾". This stone bed will allow collected stormwater to percolate into the subgrade soils below the basin. Depending on the types of native soil, depth to bedrock and the groundwater levels below the basin, an underdrain may be installed in the stone bed of the basin to allow the basin to slowly yet fully drain between storm events. PADEP reports that these BMPs have pollutant removal efficiencies of 55% to 90% for sediments and 45% to 85% for TP depending on the underlying soil type and underdrain scenario.

C. Extended Detention Basin

Extended detention basins differ from infiltration basins in that extended detention basins do not provide a stone bed below the pond bottom that promotes infiltration. Extended detention basins are used in areas where in-situ soils have poor permeability, high groundwater levels persist and/or depths to bedrock are shallow. All storage is provided within the basin itself. An outlet control structure that is typically provided in the basin has a small-diameter dewatering orifice or shallow underdrain to allow the detained stormwater in the basin to slowly drain from the basin over a period of 24 to 72 hours. This period of extended detention provides pollutant removal by allowing time for settling of pollutants or for microbial or plant uptake of excess nutrients in the detained stormwater. PADEP reports that these BMPs have pollutant removal efficiencies of 60% for sediments and 20% for TP.

D. Wet Ponds/Constructed Wetlands

These structural BMPs collect stormwater runoff and retain it within an impoundment that includes a permanent pool. Often the edges of the permanent pool are planted with a host of native vegetation that can thrive in various depths of permanent or intermittent inundation. Shallow earthen benches are also often provided around the perimeter of the permanent pool to better promote a variety of plant species and to provide a measure of safety for people. Stormwater retention volume is provided above the permanent pool elevation to allow settlement and removal of grit and sediments and any nutrients or chemicals adsorbed or adhered to these sediments. Outlet structures are often provided to allow the retained stormwater to discharge slowly over a 24 to 72 hour period to receiving

waters. PADEP reports that these BMPs have pollutant removal efficiencies of 60% for sediments and 45% for TP.

E. Disconnection of Impervious Areas

This control measure is a non-structural BMP and involves disconnecting impervious areas from the regulated MS4 system. This includes disconnecting downspouts that discharge to the MS4 system and impervious areas that are directly connected and eventually flow to the MS4 system. For example, roof runoff travels through the downspout of a building and then is discharged to the paved parking lot. Runoff then travels across the parking lot to the storm drain system. This situation does not allow for the runoff to infiltrate or be treated by passing through a vegetated area. No removal efficiencies are reported by PADEP for this BMP.

F. Infiltration Trench

Infiltration trenches are typically a smaller, more linear version of infiltration basins. This feature is composed of a continuously perforated pipe within a stone filled trench with a level bottom. Infiltration trenches are well suited to provide groundwater recharge and water quality benefits in a large variety of applications. The trench is typically no more than 3'- 8' wide and 6' deep. The trench size has a maximum drainage area three times the footprint of the trench to provide a maximum impervious loading ratio of 3:1. The trench should be placed on relatively flat grades and soils with suitable infiltration capabilities. The trench should be covered with at least 6" of topsoil and native vegetation. This feature was not proposed because alternatives were available, but this feature works well in combination with other BMPs beneath vegetated filters, to connect inlets, and to provide rooftop disconnection. PADEP reports that these BMPs have pollutant removal efficiencies of 95% for sediments and 85% for TP.

G. Open Space/Riparian Buffer Restoration

Open space restoration applies to land conversions and involves the removal of impervious surfaces (e.g. buildings) in favor of vegetation. The Chesapeake Bay program recognizes a change in the land use as a way of reducing pollutants off the landscape. In addition to open space restoration, riparian buffer restoration is an equally effective method of reducing pollutant discharge to waterways. Buffers create habitat, promote infiltration, and reduce pollution runoff by providing a minimum distance between the water resource and development. At locations of open space restoration associated with the flood-prone property buyout program, riparian buffer restoration is recommended. These sites will be investigated to determine the feasibility of revegetating the properties with native trees and shrubs. Access pathways to the water will be maintained at each location as needed. PADEP reports that these BMPs have pollutant removal efficiencies of 50% for sediments and 50% for TP.

H. Tree Planting

This non-structural BMP is a simple means for stormwater management that involves little if any design and engineering yet can provide multiple benefits for a watershed. After the trees are planted, it is important to establish a tree maintenance program and provide frequent care of the trees for the first three years. Reforestation in general will be considered as a complementary practice to the installation of planned BMPs as well as during each annual assessment. However, larger individual areas have also been identified within the MS4 permit area as feasible for reforestation, or possibly a complete land use change. In addition to reforestation, street tree plantings and tree plantings in public parks are highly recommended for urbanized areas. Special attention should be given to replacing street trees where they have been removed due to damage or disease. Urban street trees offer significant runoff reduction benefits because of canopy interception, evaporo-transpiration, and infiltration. Selection of tree species should be carefully done to match the appropriate tree with the site, focusing on native trees and trees with wildlife benefits, and trees that are disease-resistant. Where feasible given site constraints, larger tree species that have relatively greater stormwater benefit should be favored over smaller ornamental-style species that have more modest benefits. Additional benefits of street and park tree plantings include shade, aesthetic improvement to the community, and wildlife habitat. The Pennsylvania TreeVitalize program is a recommended source of funding, information and training for urban tree plantings. PADEP reports that these BMPs have pollutant removal efficiencies of 20% for sediments and 15% for TP.

I. Stream Restoration

This control measure involves restoring and/or stabilizing degraded and eroded banks of natural receiving waterways within watershed that have experienced significant urbanization. Oftentimes, streams in urbanized areas, particularly areas where little if any stormwater management infrastructure is present, have developed steep, high channel banks as high volumes and rates of urban runoff cause these natural waterways to run full more frequently and at higher velocities than before their watersheds became urbanized. This bed and bank erosion is a significant source of sedimentation and siltation of downstream waterways as well as cause of property loss and damages to those properties through which these impaired streams pass. PADEP reports that streambank have pollutant load reduction values of 44.88 pounds per linear foot of stream per year (lb/ft/yr) for sediments and 0.068 lb/ft/yr for TP.

In order for stream restoration projects to be credited for pollutant load reductions, these projects must meet qualifying siting and design criteria as defined in the PADEP document "Considerations of Stream Restoration Projects in Pennsylvania for Eligibility as an MS4 Best Management Practice," June 22, 2017. These qualifying criteria include documented evidence of existing and ongoing bed or bank erosion; preference given to first through

third order streams (larger scale waterways require additional documentation); restoration of at least 100 linear feet of stream channel as well as both sides of the channel where needed; sufficient treatment of upstream impervious areas to address peak flows; reestablishment of hydraulic connectivity of the stream to its floodplain; employment of a variety of stabilization techniques (but credit cannot be given for sections of hard-armoring); and establishment of a permanent 35-foot-minimum riparian buffer. A further discussion on these qualifying criteria is provided by the Chesapeake Stormwater Network and Center for Watershed Protection entitled "Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects," latest revision date September 8, 2014.

J. Storm Sewer Inlet and Pipe Cleaning

Storm drain systems need to be cleaned regularly. Routine cleaning reduces the amount of pollutants, trash and debris both in the storm drain system and in receiving waters. Clogged drains and storm drain inlets can cause the drains to overflow, leading to increased erosion. Benefits of cleaning include increased dissolved oxygen, reduced levels of bacteria, and support of instream habitat. Areas with relatively flat grades or low flows should be given special attention because they rarely achieve high enough flows to flush themselves.

For pollutant load reduction associated with inlet cleaning for this report, it is assumed that an average volume of debris removed from each inlet per year is 1 inch deep by 2 feet wide by 4 feet long (area of typical PADOT standard roadside inlet box). This amounts to a volume of 0.664 cubic feet per year. Assuming the sediment debris has a specific gravity of 2.5 (or a specific weight of 156 pounds per cubic foot) and the solids ratio of the bulk debris is 0.60, then the average solids loading rate in each inlet is 62.0 pounds per year - equating to a bulk sediment unit weight of 93 pounds per cubic foot. This unit solids loading rate per inch of sediment depth of 62.0 lb/yr multiplied by the number of inlets to be cleaned will provide the total bulk solids volume to be removed. The total bulk solids of 62.0 lb/inlet/year was further broken down into inorganic solids and organic solids using the assumption that 50% of the total solids are inorganic, 40% are organic solids and the remaining 10% or debris (leaves, grass, litter, etc.). The dry solids weight for inorganics was further assumed to be 70% of the total wet inorganic weight and the dry solids for organics was assumed to be 20% of the total wet organic weight as per DEP PRP Instructions.

PADEP reports that for inorganic solids, sediments on average make up 99.67 percent of these solids, with Total Nitrogen making up 0.27 percent and Total Phosphorus making up 0.06 percent of these solids. PADEP reports that for organic solids, sediments on average make up 98.77 percent of these solids, with Total Nitrogen making up 1.11 percent and Total Phosphorus making up 0.12 percent of these solids. PADEP also mandates that storm inlet cleaning can be credited with no more than 50% of the total required pollutant load

reduction amount. Therefore, this BMP cannot be the sole BMP applied to an MS4 planning area.

Standard Operating Procedure for Storm Inlet Cleaning: Sediments and other debris within storm inlets will be removed by Township personnel public works by hand and assisted by backhoe which will load the material into a public works dump truck. Prior to removing the material from each inlet, the depth of the sediment will be measured and recorded onto the Inlet Cleaning Log as provided in Attachment D along with the inlet box ID number, box location and box size. The weight of the sediment collected from each box is then computed on the log based on the estimated bulk unit weight of the sediment, sediment depth and inlet box size. Due to the potential for these sediments to include trash and other manmade wastes, collected sediments shall be transported and disposed at a landfill permitted to receive municipal waste. The estimated weight of sediments removed shall be periodically calibrated based on the weight of the material disposed of at the landfill.

K. Green Infrastructure/Low Impact Development

These control measures involve incorporating means of reducing, capturing, harnessing or retaining stormwater runoff at or near the points of origin of the runoff into building architecture, site design or landscape plans. Examples of green infrastructure and low impact development include green roofs, pervious pavement surfaces, cisterns, rain barrels, minimizing roadway widths, depressed traffic islands and curb bumpouts, streetside vegetated swales, clustered developments, minimizing of disturbed area and protection of environmentally sensitive features such as waterways and wetlands, steep slopes, floodplains, mature forest and highly permeable soils. Some of these measures such as green roofs and permeable pavement, can carry with them a high cost associated with construction and other measures may be in conflict with local zoning ordinances. However, the municipality is to encourage private developers to consider these control measures with future development. Additionally, public-private partnerships may be able to effect stormwater retrofitting of existing commercial properties employing some of these measures. The pollutant load reduction benefits from these measures is realized through the reduction of developed impervious land cover within the MS4 sewersheds and the conversion of developed land cover back to less impervious or more natural conditions.

7. EXISTING STRUCTURAL STORMWATER MANAGEMENT BMPS

Three of the nine sewershed study areas harbor existing structural stormwater management BMPs that have significant drainage areas relative to the total sewershed area for their respective sewersheds. There is an existing structural stormwater management BMP within the Sulphur Run sewershed area of the township as well as several vegetated channels capturing stormwater runoff.

A. Derbytown/McFarland

The Derbytown/McFarland sewershed consists mostly of forested area and low density residential neighborhood. No existing structural stormwater management BMPs lie within the 231 acre Derbytown/McFarland MS4 Sewershed.

B. Lower Saxman Run

Lower Saxman Run is one of the largest and most densely populated sewersheds in Derry Township. The Lower Saxman Run MS4 sewershed study area includes one existing structural stormwater management BMP that captures a portion of the MS4 sewershed. The Red Cut Lodge Road stormwater detention pond is located in the northwest quadrant of the Lower Saxman Run sewershed and captures runoff from approximately 14.67 acres of the sewershed area. The pond currently functions as a dry detention basin with no structures to provide water quality treatment. The ruoff from the sewershed is captured by a 2.5 mile stretch of Saxman Run to the north that ends discharging into the Loyalhanna Creek. There are many areas along this portion of Saxman Run that would benefit from stream restoration. Outside of Lower Saxman Run's sewershed located north along Saxman Run at 84 Lumber there is a private dry detention basin. At the northwest section of the sewershed at there is an industrial area that also appears to house a private detention basin. Both basins capture a negligible amount of urbanized area runoff and therefore were not examined any further.

C. St Clair Street

No existing structural stormwater management BMPs lie within the St Clair Street MS4 Sewershed. This is the smallest, but most densely populated MS4 Sewershed in Derry Township. The western limit of this sewershed is bounded by the corporate limit of the City of Latrobe.

D. Sulphur Run Area

The Sulphur Run MS4 sewershed study area includes one existing structural stormwater management BMP that captures a portion of the MS4 sewershed. The Barnes House stormwater detention pond is located in the northwest quadrant of the Sulphur Run sewershed and captures runoff from approximately 4.91 acres of the sewershed area. The Barnes House Pond currently functions as a dry detention basin with no structures to provide water quality treatment. However, no documented evidence indicating that this pond has been adequately maintained has been obtained. Therefore, no pollutant load reduction credit was taken for this existing BMP.

E. Upper Saxman Run

No existing structural stormwater management BMPs lie within the Upper Saxman Run MS4 Sewershed. The discharge point into Saxman Run is centered in the western portion of the sewershed.

F. Village of Hillside

The Hillside MS4 sewershed is situated along the northern side of Trout Run and consists primarily of low-density residential land use. No existing structural stormwater management BMPs lie within the Hillside MS4 Sewershed. The downstream limit of the sewershed is State Route 217 on its western edge.

G. New Derry East

No existing structural stormwater management BMPs lie within the New Derry East MS4 Sewershed.

H. Ethel Springs Lake

No existing structural stormwater management BMPs lie within the Ethel Springs Lake MS4 Sewershed. The sewershed discharges into the northwest portion of Ethel Springs Lake, which then discharges to McGee Run. The sewershed has a natural low point to the northeast of the lake that receives stormwater from a portion of the Derry Area School District property that could be made into a detention pond.

I. Malone Road

The Malone Road sewershed consists mostly of forested area and low density residential neighborhoods. One 12-acre light industrial facility lies within this sewershed. No existing structural stormwater management BMPs lie within the Malone Road MS4 Sewershed.

Using the PADEP's Simplified Method for calculating pollutant loads in MS4 sewershed areas as presented in PADEP Document No. 3800-PM-BCW0100k, the following pollutant loading rates were utilized for the Developed Impervious, Developed Pervious and Undeveloped Land Covers in Derry Township:

Table 4: Pollutant Loading Rates by Land Cover Type

Land Cover Type	Total Nitrogen (lb/acre/yr)	Total Phosphorus (lb/acre/yr)	Total Sediments (lb/acre/yr)
Developed Impervious	23.06	2.28	1,839

Land Cover Type	Total Nitrogen (lb/acre/yr)	Total Phosphorus (lb/acre/yr)	Total Sediments (lb/acre/yr)
Developed Pervious	20.72	0.84	264.96
Undeveloped	10	0.33	234.6

Gross pollutant loads were calculated for total nitrogen (TN), total phosphorus (TP) and total sediments (also referred to as total suspended solids, or TSS) for each sewershed. Net pollutant loads were then calculated for each sewershed after factoring in the load reductions from any existing structural stormwater BMPs located within the sewershed. The minimum required load reductions for each sewershed were then computed from their net existing pollutant loads. Attachment C presents the gross and net pollutant load calculations which are summarized in Tale 5.

Table 5: MS4 Sewershed Gross and Net Pollutant Loads and Minimum Required Load Reductions

Sewershed Name	Gross Existing TN Load (lb/yr)	Gross Existing TP Load (lb/yr)	Gross Existing TSS Load (lb/yr)	Net Existing TN Load (lb/yr)	Net Existing TP Load (lb/yr)	Net Existing TSS Load (lb/yr)	Impairment Pollutant(s)	Min. Required Load Reduction(s) (lb/yr)
Derbytown/ McFarland	2,999	130	80,324	2,999	130	80,324	TSS – reduce by 10%	8,032
Lower Saxman Run	19,194	1,011	661,030	19,194	1,011	661,030	TSS – reduce by 10%; TP – reduce by 5%	TSS – 66,103 TP - 51
St Clair Street	1,519	114	82,241	1,519	114	82,241	TSS – reduce by 10%	8,224
Sulphur Run	10,549	521	319,697	10,549	521	319,697	TSS – reduce by 10%	31,970
Upper Saxman Run	4,182	198	114,141	4,182	198	114,141	TSS – reduce by 10%; TP – reduce by 5%	TSS – 11,414 TP - 10
Hillside	450	17	9,421	450	17	9,421	TSS – reduce by 10%; TP – reduce by 5%	TSS – 942 TP - 1
New Derry East	2,220	102	70,841	2,220	102	70,841	TSS – reduce by 10%	7,084
Ethel Springs Lake	2,459	129	82,955	2,459	129	82,955	TSS – reduce by 10%	8,296
Malone Road	2,057	110	72,037	2,057	110	72,037	TSS – reduce by 10%	7,204
TOTALS	**45,630**	**2,330**	**1,492,689**	**45,630**	**2,330**	**1,492,689**	**-**	**149,269 (TSS) 61 (TP)[1]**

[1] Total Phosphorus (TP) Load Reduction applicable only to the Lower, Upper Saxman Run and Hillside Sewershed Areas.

8. PROPOSED STORMWATER MANAGEMENT BMPS

Each sewershed was evaluated to determine the most practical and cost effective method for attaining the required pollutant load reduction. Most of proposed stormwater management BMPs include utilize land already owned and maintained by the Township. For the purpose of this plan, any existing BMPs for which documentation of past inspections, operation and maintenance cannot be provided and that are to be retrofitted as part of this plan can be treated as new structural BMPs as per guidance from the Department of Environmental Protection. No such records of inspection and maintenance of the existing BMPs within the MS4 sewersheds were found. Therefore, these undocumented existing BMPs are to be treated as new BMPs for the load reduction calculations used in this PRP.

A bioretention pond is proposed for the Holiday Acres townhome community within the Derbytown/McFarland sewershed. This townhome community lies in the upper reaches of the sewershed and was originally constructed without any stormwater management facilities. The bioretention pond will provide peak flow attenuation as water quality treatment for stormwater discharging from the site. Right-of-way will need to be acquired from the property owner by the Township for the construction and maintenance of this facility. The drainage area to this facility is 22.9 acres.

A dry extended detention pond is proposed at an existing low point in the Ethel Springs Lake Sewershed. The area is currently a point of collection of stormwater runoff from the Derry Area School District Middle School and High School campus. This collection point connects directly to Ethel Springs Lake via a culvert pipe which provides no flow attenuation or water quality treatment before the stormwater enters the lake. The proposed pond will have a drainage area of 14.7 acres. Water quality treatment of this runoff would provide a great benefit to the overall water quality of Ethel Springs Lake which serves as the source water for the Derry Borough Municipal Authority's potable water treatment and distribution system.

A current detention pond is located at Red Cut Lodge Road in the Lower Saxman Run sewershed. It captures and cleans stormwater from inlets along the roads of the housing development to the north of it. This basin has a drainage area of 14.67 acres within the urbanized area. There is a proposed retrofit to upgrade this existing BMP to an extended detention facility. Two other existing undocumented detention ponds within the Lower Saxman Run sewershed, Spring Crest Ponds 1 and 2, are proposed to be retrofitted to extended detention ponds as well.

New dry extended detention ponds are proposed for the Lower Saxman (Industrial Blvd and Towsnhip Public Works), Sulphur Run (Meadow Drive) and Upper Saxman Run (North Valley Street) sewersheds. The proposed Township Public Works pond will be located on property owned

by Derry Township. The three other proposed ponds are located on private property, wherein the Township would need to acquire the necessary rights-of-way from the respective property owners.

Vegetated open channels are proposed in the Lower Saxman, Upper Saxman, Hillside and Malone Road sewersheds. These channels were chosen to minimize impacts on residents since they can be constructed in large part within the limits of the rights-of-way of Township roads. They will collect and filter stormwater runoff from the roads as well as adjacent upland areas before the stormwater is discharged into their respective impaired receiving waterways.

Bioswales will enhance cleaning and infiltration of the stormwater by providing an amended soil mix in the bottom of the swales designed to promote infiltration and to furnish native inundation-tolerant plant species to promote root uptake. Similar to the vegetated open channels, these BMPs can be constructed for the most part within the right-of-way limits of the Township roads. Bioswales are proposed in the Lower Saxman, Saint Clair Street and New Derry East sewersheds.

Stream restoration is proposed for a 300 foot long segment of Saxman Run near the crossing of Main Street. Little open space is available for BMPs that require more land. There were areas where structural BMPs did not fulfill the required load reduction and these non-structural BMPs were necessary to meet the required load reduction. Stream restoration provides a plausible means for meeting the pollutant load reduction requirements for each MS4 planning area without the need for the Township to permanently acquire additional property. As per the PADEP project eligibility requirements, each proposed stream restoration site is 100 LF or longer and is for first- through third-order streams.

Storm sewer system solids removal are used in the township where either no existing structural stormwater management BMPs exist and where little open space is available for structural BMPs that require more land. There were also many areas where structural BMPs did not fulfill the required load reduction and the chosen non-structural BMPs were necessary to meet the required load reduction.

Table 6: MS4 Sewershed Proposed Stormwater Management BMPs and Load Reductions

Sewershed Name	Net Existing Load (TSS) (lb/yr)	Impairment Pollutant(s)	Min. Required Load Reduction(s) (lb/yr)	Proposed Stormwater Management BMP	Load Reduction(s) Provided (lb/yr)	Percent Load Reduction with Proposed BMP(s) (%)
Derbytown / McFarland	80,324	TSS – reduce by 10%	8,032	Bioretention Pond (BMP #1)	8,171	10.2
Lower Saxman Run	TSS – 661,031 TP – 1,011	TSS – reduce by 10%; TP – reduce by 5%	TSS – 66,103 TP - 51	Five New Dry Extended Detention Basins (BMP #'s 2, 3, 4, & 6) , Bioswale (BMP #5), Stream Restoration (BMP #7), Storm Sewer System Solids Removal (34 inlets/year)	TSS – 66,109 TP - 57	TSS – 10.0 TP – 5.6
St Clair Street	82,241	TSS – reduce by 10%	8,224	Bioswale (BMP #8), Storm Sewer System Solids Removal (26 inlets/year)	8,242	10.0
Sulphur Run	319,697	TSS – reduce by 10%	31,970	Dry Extended Detention Pond (BMP #9), Storm Sewer System Solids Removal (20 inlets/year)	40,435	12.7
Upper Saxman Run	TSS – 114,141 TP - 198	TSS – reduce by 10%; TP – reduce by 5%	TSS – 11,414 TP - 10	Dry Extended Detention Pond (BMP #10)	TSS – 18,634 TP - 11	TSS – 16.3 TP – 5.6
Hillside	TSS - 9,421 TP - 17	TSS – reduce by 10% TP – reduce by 5%	TSS – 942 TP - 1	Vegetated Open Channel (BMP #11)	TSS - 2,087 TP - 1	TSS - 22.2 TP – 5.0
New Derry East	70,841	TSS – reduce by 10%	7,084	Bioswale (BMP #12)	10,758	15.2
Ethel Springs Lake	82,955	TSS – reduce by 10%	8,296	Dry Extended Detention Pond (BMP #13)	11,154	13.4

Sewershed Name	Net Existing Load (TSS) (lb/yr)	Impairment Pollutant(s)	Min. Required Load Reduction(s) (lb/yr)	Proposed Stormwater Management BMP	Load Reduction(s) Provided (lb/yr)	Percent Load Reduction with Proposed BMP(s) (%)
Malone Road	72,037	TSS – reduce by 10%	7,204	Vegetated Open Channel (BMP #14)	11,782	16.4

To summarize, the proposed BMPs listed for each sewershed in Table 6 include thirteen (13) new structural BMPs, stream restoration along 300 linear feet of Saxman Run and the cleaning of 80 storm inlets per year. These BMPs are sufficient to effect a load reduction of 177,371 lb/yr of TSS and 179 lb/yr of TP, which exceed the minimum required load reductions of 149,269 lb/yr of TSS and 61 lb/yr of TP.

9. PRP IMPLEMENTATION COST ESTIMATE AND FUNDING MECHANISM(S)

The estimated cost for implementation of the proposed BMPs includes construction costs of the proposed structural BMPs as well as operations and maintenance costs of all nonstructural BMPs over the 5-year term of the permit period. This total estimated implementation cost is $49,410 for all proposed BMPs. Averaging this cost over the 5-year implementation period yields an annual anticipated cost of $103,803 assuming an annual interest rate of 5%. A breakdown of these costs is provided in Attachment D following the Proposed BMP Load Reduction Tables.

As this PRP is a five-year plan to be implemented from 2018 through 2022 under the Township's next NPDES MS4 permit term, the Township can distribute the capital costs of this plan across that five-year period. The Township Supervisors can appropriate approximately 20% of the total estimated capital cost of this plan into its annual budget for public works expenditures. The Township receives Act 13 Impact Fees from unconventional gas well operations within the Township. A portion of these fees can be applied toward this PRP implementation. In order to bridge any funding gaps based on available revenue, the Township will applying for low-interest Pennvest loans as well as pursue DCNR, Growing Greener and DEP Mariner East II grants and other grant money earmarked for watershed improvement projects.

10. BMP OPERATION AND MAINTENANCE RESPONSIBILITIES

All proposed new BMPs and existing BMPs that have been retrofitted will be operated and maintained by the Township. For stream restoration BMPs located on property owned by the Township, the Township shall own and maintain those BMPs. For stream restoration BMPs on properties not owned by the Township, the Township shall be responsible for maintenance of these BMPs for two (2) years after construction of these BMPs has been completed. After this two-year maintenance period, the responsibility for the routine maintenance of these BMPs would revert back to the property owner with right still granted to the Township to conduct any needed maintenance and seek compensation from the owner for any expenses incurred should the property owner fail to perform proper maintenance. Storm Sewer System Solids Removal within Township inlets shall be completed once yearly by the township. Inlets targeted for cleaning shall be placed on a rotational schedule based on need to assure that as many different inlets are maintained as possible over the 5-year implementation period of this plan.

BMP inspection and maintenance schedules for each type of proposed structural BMP are provided in Attachment D.

ATTACHMENT A - PADEP PAG-13 GENERAL PERMIT FOR STORMWATER DISCHARGES FROM SMALL MS4S (PADEP DOCUMENT NO. 3800-PM-BCW0100B)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

PAG-13
AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) APPROVAL OF COVERAGE

NPDES PERMIT NO.

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

is authorized to discharge from a regulated small municipal separate storm sewer system (MS4) located in , **County** to in Watershed(s) in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

APPROVAL OF COVERAGE TO DISCHARGE UNDER THIS GENERAL NPDES PERMIT IS AUTHORIZED BEGINNING ON . WHEN THE GENERAL PERMIT IS RENEWED, REISSUED OR MODIFIED, THE FACILITY OR ACTIVITY COVERED BY THIS APPROVAL FOR COVERAGE MUST COMPLY WITH THE FINAL RENEWED, REISSUED OR MODIFIED GENERAL PERMIT.

The authority granted by coverage under this General Permit is subject to the following further qualifications:

1. The permittee shall comply with the effluent limitations and reporting requirements contained in this General Permit.

2. Following initial coverage under this General Permit, the submission of Annual MS4 Status Reports in accordance with Part A III.D of the General Permit shall constitute the permittee's Notice of Intent (NOI) for continued coverage under the General Permit. The permittee shall be responsible for complying with the final renewed, reissued or amended General Permit. If the permittee is unable to comply with the renewed or amended General Permit, the permittee must submit an application for an individual NPDES permit within 90 days of publication of the final General Permit.

3. The NOI and its supporting documents are incorporated into this approval of coverage. If there is a conflict between the NOI or its supporting documents and the terms and conditions of this General Permit, the terms and conditions of this General Permit shall apply.

4. Failure to comply with the terms, conditions, or effluent limitations of this General Permit is grounds for enforcement action, permit termination or revocation.

5. (IF APPLICABLE) The permittee shall implement Pollutant Control Measures as specified in **Appendix (A, B and/or C)**.

6. (IF APPLICABLE) The permittee shall achieve pollutant loading reductions for **(sediment, Total Phosphorus and/or Total Nitrogen)** as specified in **Appendix (D or E)** by **(Date - 5 Years from Effective Date of Coverage)**.

This approval of coverage is authorized by:

Clean Water Program Manager
Regional Office
Department of Environmental Protection

PAG-13
AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq*. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq*., the Department of Environmental Protection (DEP) hereby authorizes, by this General Permit, the discharge of stormwater from regulated small municipal separate storm sewer systems (MS4s) to surface waters in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

Eligible dischargers who wish to be covered under this General Permit must submit a Notice of Intent (NOI) to DEP in accordance with the requirements of this General Permit, using the NOI form provided by DEP.

No new discharge may be commenced under this General Permit until the applicant complies with all of the following:

1. The applicant has submitted a complete Notice of Intent (NOI) in accordance with the requirements of this General Permit, using a NOI form provided by DEP.

2. The applicant has received a signed copy of the Approval of Coverage from DEP that authorizes coverage under the PAG-13 General Permit.

DEP may deny coverage under the PAG-13 General Permit and require submission of an application for an individual permit based on a review of the NOI or other relevant information, including monitoring data.

Once coverage is approved under the PAG-13 General Permit, coverage will continue when the PAG-13 General Permit is reissued, unless the permittee is otherwise notified by DEP. The submission each year of the Annual MS4 Status Report in accordance with Part A III.D of the General Permit shall constitute the permittee's NOI for continued coverage under the General Permit unless DEP notifies the permittee in writing that the submission of a new NOI is required.

SCOPE

The PAG-13 General Permit is intended to provide NPDES permit coverage to regulated small MS4s for discharges of stormwater to surface waters. Permittees operating under this General Permit have been either automatically designated as regulated by the U.S. Environmental Protection Agency (EPA) pursuant to 40 CFR § 122.32(a)(1) or designated as regulated by DEP under 40 CFR § 122.32(a)(2).

NOI REQUIREMENTS

Deadlines for NOI

MS4 permittees with existing NPDES permit coverage, MS4s that previously have been waived by DEP, and MS4s newly designated as a result of the 2010 census that are seeking coverage under this PAG-13 General Permit or a waiver must submit and DEP must receive an administratively complete and acceptable NOI by September 16, 2017. MS4s authorized to discharge under an individual NPDES permit who are seeking coverage under this General Permit may continue to discharge in accordance with the individual permit while their NOI and associated documents are being reviewed by DEP.

Contents of the NOI

The NOI shall be signed in accordance with the signatory requirements of this General Permit and shall contain the information required in the NOI form.

Where to Submit the NOI

An NOI is to be submitted to the regional office of DEP that has jurisdiction over the county where the MS4 is located.

DISCHARGES AUTHORIZED BY THIS GENERAL PERMIT

Except where specifically prohibited under the "Discharges Not Authorized by this General Permit" section, this General Permit authorizes the discharge of stormwater to surface waters from regulated small MS4s. In addition, the following non-stormwater discharges are authorized by this General Permit as long as such discharges do not cause or contribute to pollution as defined in Pennsylvania's Clean Streams Law:

1. Discharges or flows from firefighting activities.

2. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC).

3. Non-contaminated irrigation water, water from lawn maintenance, landscape drainage and flows from riparian habitats and wetlands.

4. Diverted stream flows and springs.

5. Non-contaminated pumped ground water and water from foundation and footing drains and crawl space pumps.

6. Non-contaminated HVAC condensation and water from geothermal systems.

7. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized.

8. Non-contaminated hydrostatic test water discharges, if such discharges do not contain detectable concentrations of TRC.

In the event existing outfall(s) are identified during the term of General Permit coverage that were not identified on maps submitted as part of the NOI (where required), the permittee shall identify the outfall(s) in the subsequent Annual MS4 Status Report that is submitted to the DEP office that approved permit coverage. In the event new stormwater outfalls are proposed, the permittee shall submit written notification to the DEP office that approved permit coverage at least 60 days prior to commencing a discharge, unless such discharges would meet one or more of the criteria specified in the "Discharges Not Authorized By This General Permit" section, in which case an individual permit application must be submitted and an individual permit obtained prior to commencing a discharge.

DISCHARGES NOT AUTHORIZED BY THIS GENERAL PERMIT

The following discharges are <u>not</u> authorized under the PAG-13 General Permit, and DEP may deny coverage under the General Permit when one or more of the following conditions exist:

1. The discharge, individually or in combination with other similar discharges, is or has the potential to be a contributor of pollution, as defined in the Pennsylvania Clean Streams Law, which is more appropriately controlled under an individual permit.

2. The discharger is not, or will not be, in compliance with one or more of the conditions of the General Permit.

3. The applicant has failed and continues to fail to comply or has shown a lack of ability or intention to comply with a regulation, permit, schedule of compliance or order issued by DEP.

4. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source.

5. Categorical point source effluent limitations are promulgated by the EPA for those point sources covered by the General Permit.

6. The discharge is not, or will not, result in compliance with an applicable effluent limitation or water quality standard.

7. Other point sources within the MS4 require issuance of an individual permit, and issuance of both an individual and a General Permit for the facility would constitute an undue administrative burden on DEP.

8. The discharge from the regulated small MS4 is or would be to a surface water classified as a High Quality (HQ) or an Exceptional Value (EV) water under 25 Pa. Code Chapter 93 (relating to Water Quality Standards).

9. The discharge contains toxic or hazardous pollutants, or any other substance which, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause or contribute to an increase in mortality or morbidity in either an individual or the total population, or pose a substantial present or future hazard to human health or the environment when discharged into surface waters.

10. The discharge individually or cumulatively has the potential to cause significant adverse environmental impact or have been determined by DEP to have caused impairment to the surface waters receiving the discharge(s).

11. The discharge would adversely affect a listed endangered or threatened species or its critical habitat.

12. The MS4 is covered by an individual permit, and coverage under this General Permit would result in less stringent effluent limitations or terms and conditions.

13. DEP determines that the denial of coverage is necessary for any other reason to ensure compliance with the Federal Clean Water Act, the Pennsylvania Clean Streams Law or DEP regulations.

14. The regulated MS4 is a large or medium MS4 as defined in 40 CFR §§ 122.26(b)(4) or (7).

15. The permittee is implementing a local or tribal Qualifying Local Program (QLP) pursuant to 40 CFR 122.44(s) that is not the state's program as outlined in 25 Pa. Code Chapter 102.

16. The regulated small MS4 is assigned a wasteload allocation (WLA) (either specific to the MS4 or general) in a Total Maximum Daily Load (TMDL) approved by the U.S. Environmental Protection Agency (EPA) for local surface waters, where the pollutant(s) of concern are nutrients (i.e., nitrogen and/or phosphorus) and/or sediment (i.e., siltation or total suspended solids), and the MS4 is identified in the "MS4 Requirements Table" (see definitions) as needing to complete a TMDL Plan.

17. The regulated small MS4 1) discharges to waters impaired for nutrients and/or sediment without an EPA-approved TMDL or discharges to the Chesapeake Bay watershed; 2) is identified in DEP's "MS4 Requirements Table"; and 3) has not developed and submitted a Pollutant Reduction Plan (PRP) with the NOI to reduce pollutant loading for the cause(s) of impairment.

18. The discharge will be commingled with sources of non-stormwater unless such non-stormwater discharges are identified in the "Discharges Authorized by this General Permit" section of this General Permit or are in compliance with a separate NPDES permit and do not cause or contribute to pollution.

19. Stormwater discharges associated with industrial activity as defined in 40 CFR §§ 122.26(b)(14)(i)-(ix) and (xi).

20. Stormwater discharges associated with construction activity as defined in 40 CFR § 122.26(b)(14)(x) or 40 CFR § 122.26(b)(15).

THE AUTHORITY GRANTED BY THIS GENERAL PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. If the permittee submits a timely NOI for coverage under this General Permit (i.e., received by DEP on or before September 16, 2017) and the previous General Permit expires, the permittee is authorized to continue discharging under the terms and conditions of this General Permit. The permittee must comply with all terms and conditions in this General Permit with the exception of requirements that do not take effect until DEP's approval of coverage, as specified in this General Permit.

2. DEP may require a permittee with discharge(s) authorized by this General Permit to apply for and obtain an individual permit by notifying the permittee in writing that an individual permit application is required. Any interested person may petition DEP to take action under this paragraph.

   DEP's notice will include the following:

   - A brief statement of the reason(s) for this decision;
   - An individual permit application form;
   - A deadline for the owner or operator to submit the application; and
   - A statement that on the effective date of the individual permit, coverage under this General Permit shall automatically terminate.

   If a permittee fails to submit an individual permit application required by DEP under this paragraph in a timely manner, then the applicability of this General Permit to the permittee is automatically terminated at the end of day specified for submission of the application.

3. Any person authorized to discharge by this General Permit may request to be excluded from the coverage of this General Permit by applying for an individual permit.

4. When an individual permit is issued to a person whose discharge(s) are covered by this General Permit, the applicability of this General Permit is automatically terminated on the effective date of the individual permit. When an individual permit is denied to a person whose discharge(s) are covered by this General Permit, the person may continue discharging if all eligibility requirements under this General Permit are met.

5. This General Permit will expire 5 years from the date of its issuance. DEP will publish a notice in the *Pennsylvania Bulletin* of the draft reissued General Permit or of any amendments to this General Permit. After a comment period, notice of the final reissued or amended General Permit will be published in the *Pennsylvania Bulletin*. The permittee shall be responsible for complying with the final renewed, reissued or amended General Permit. If the permittee is unable to comply with the renewed, reissued or amended General Permit, the permittee must submit an application for an individual permit within 90 days of publication of the final renewed, reissued or amended General Permit.

6. If DEP decides to administratively extend this General Permit, DEP will publish a notice in the *Pennsylvania Bulletin*. The terms and conditions of the General Permit will continue during the period of administrative extension. Permittees with existing coverage under the General Permit will continue to have coverage, unless otherwise notified by DEP. DEP will not approve new coverage under the General Permit during the period of administrative extension.

7. Following approval of coverage under this General Permit, if the permittee encounters a condition affecting eligibility under this General Permit as identified above ("Discharges Not Authorized by this General Permit") and does not provide a remedy to correct that condition, coverage under this General Permit may be revoked in writing by DEP, and DEP may require the permittee to obtain an individual permit. Coverage under this General Permit may be revoked if there is evidence indicating potential or actual adverse impacts to water quality as a result of the permittee's discharge(s).

8. No condition of this General Permit shall release the permittee from any responsibility or requirements under other federal or Pennsylvania environmental statutes or regulations or local ordinances.

9. Following initial coverage under this General Permit, the submission of an Annual MS4 Status Report in accordance with Part A III.D of the General Permit shall constitute the permittee's Notice of Intent (NOI) for continued coverage under the General Permit. The permittee is authorized to discharge in accordance with the terms of the General Permit immediately upon submission of the Annual MS4 Status Report.

10. The permittee shall comply with the requirements of this General Permit in accordance with the schedules contained herein. A summary of the scheduled requirements contained in this General Permit is available (see Document ID No. 3800-PM-BCW0100l).

General Permit
(PAG-13) Issued

By 

Director
Bureau of Clean Water

Effective: **March 16, 2018**

Expires: **March 15, 2023**

PART A

EFFLUENT LIMITATIONS, REPORTING AND RECORDKEEPING REQUIREMENTS

I. EFFLUENT LIMITATIONS

A. This General Permit establishes effluent limitations in the form of implementation of a Stormwater Management Program (SWMP), as specified in Part C I of this General Permit, to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable. The permittee shall comply with Minimum Control Measures (MCMs) and best management practices (BMPs) in Part C I of this General Permit, which constitutes compliance with the standard of reducing pollutants to the maximum extent practicable.

B. All discharges from regulated small MS4s must comply with all applicable requirements established in accordance with 25 Pa. Code Chapters 91-96, 102, and 105 of DEP's rules and regulations. For all MS4s covered under this General Permit, DEP may, upon written notice, require additional BMPs or other control measures to ensure that the water quality standards of the surface waters receiving stormwater discharges are attained.

II. DEFINITIONS

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce pollutant loading to surface waters of this Commonwealth. The term includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The term includes activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities. (25 Pa. Code § 92a.2)

Clean Water Act (CWA) means the Federal Water Pollution Control Act, as amended, 33 U.S.C.A. §§ 1251 - 1387.

Cleaning Agent means any product, substance or chemical other than water that is used to clean the exterior surface of vehicles.

Designated Uses are those uses specified in 25 Pa. Code §§ 93.4(a) and 93.9a – 93.9z for each water body or segment whether or not they are being attained. (25 Pa. Code § 93.1)

Dry Weather means a condition in which there are no precipitation, snowmelt, drainage or other events producing a stormwater discharge for more than 48 consecutive hours.

Existing Permittee means any entity that has been designated as a regulated small MS4 and has previously obtained permit coverage under the PAG-13 General Permit or obtained an Individual NPDES MS4 Permit.

Existing Uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards. (25 Pa. Code § 93.1)

Illicit Connection means any physical connection to a municipal separate storm sewer system that can convey illicit discharges into the system and/or is not authorized or permitted by the permittee.

Illicit Discharge means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except non-stormwater discharges as described in the “Discharges Authorized by this General Permit” section of this General Permit. Examples of illicit discharges include dumping of motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, animal wastes, or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-stormwater waste into a municipal separate storm sewer system. Illicit discharges can be accidental or intentional.

Impaired Waters means surface waters that fail to attain one or more of its designated uses under 25 Pa. Code Chapter 93 and as listed in Categories 4 and 5 of Pennsylvania's Integrated Water Quality Monitoring and Assessment Report.

Integrated Water Quality Monitoring and Assessment Report means the report published every other year by DEP to report on the conditions of Pennsylvania's surface waters to satisfy sections 305(b) and 303(d) of the CWA.

Intermittent Stream means a body of water flowing in a channel or bed composed primarily of substrates associated with flowing water, which, during periods of the year, is below the local water table and obtains its flow from both surface runoff and groundwater discharges. (25 Pa. Code § 92a.2)

Load Allocation means the portion of a surface water's loading capacity that is assigned or allocated to existing and future nonpoint sources and natural quality. (25 Pa. Code § 96.1)

Low Impact Development (LID) means site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located on-site.

MS4 Requirements Table is a compilation of information regarding Pennsylvania MS4s, surface waters that receive stormwater discharges from MS4s, surface water impairments and TMDLs that is posted to DEP's website, www.dep.pa.gov/MS4. The MS4 Requirements Table has been assembled by DEP to assist MS4 permittees in determining applicable requirements for the development of plans and implementation of BMPs, as well as eligibility for the PAG-13 General Permit. In general, the MS4 Requirements Table will be updated prior to each renewal of this General Permit based on DEP's latest published Integrated Water Quality Monitoring and Assessment Report.

Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.26(b)(8))

Municipal Separate Storm Sewer System (MS4) means 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)(4), (b)(7), and (b)(16), respectively, or designated under 40 CFR § 122.26(a)(1)(v). (25 Pa. Code § 92a.32(a) and 40 CFR § 122.26(b)(18))

Municipality means a city, town, borough, county, township, school district, institution, authority or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes or other wastes. (25 Pa. Code § 92a.2)

New Permittee means any entity that has been designated as a regulated small MS4 and has not previously obtained permit coverage under the PAG-13 General Permit or obtained an Individual NPDES MS4 Permit.

NOI means the Notice of Intent for coverage under the NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems.

Non-Municipal Permittee means a regulated small MS4 that is not a municipality, e.g., military bases, large hospital or prison complexes, and highways and other thoroughfares.

Non-Structural BMPs means actions that involve management and source controls such as: (1) policies and ordinances that provide requirements and standards to direct growth to identified areas, promote redevelopment, protect areas such as wetlands and riparian areas, maintain and/or increase open space, provide buffers along water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation; (2) education programs for developers and the public about minimizing water quality impacts; (3) measures such as minimizing the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, street sweeping, and source control measures such as good housekeeping, maintenance, and spill prevention; and other BMPs as referenced in Chapter 5 of the Pennsylvania Stormwater BMP Manual (363-0300-002).

Ordinance means a law enacted by the government of a municipality.

Outfall means a point source as defined by 40 CFR § 122.2 at the point where a municipal separate storm sewer discharges to surface waters and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other surface waters and are used to convey surface waters. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.26(b)(9))

Owner or Operator means the owner or operator of any "facility" or "activity" subject to regulation under the NPDES program. (25 Pa. Code § 92a.3(b)(1) and 40 CFR § 122.2)

Permittee means the owner or operator of a regulated small MS4 authorized to discharge under the terms of this General Permit.

Point Source means a discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, Concentrated Aquatic Animal Production Facility (CAAP), Concentrated Animal Feeding Operation (CAFO), landfill leachate collection system, or vessel or other floating craft from which pollutants are or may be discharged. (25 Pa. Code § 92a.2)

Pollutant means 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 Pennsylvania Clean Streams Law, 35 P.S. § 691.1. (25 Pa. Code § 92a.2)

Qualifying Development or Redevelopment Project means an earth disturbance activity that requires an NPDES permit for stormwater discharges associated with construction activity per 25 Pa. Code Chapter 102.

Regulated Small MS4 means any small MS4 that is covered by the federal Phase II stormwater program, either through automatic nationwide designation under 40 CFR § 122.32(a)(1) (via the Urbanized Area criteria) or by designation on a case-by-case basis by DEP pursuant to 40 CFR § 122.32(a)(2). "Regulated small MS4s" are a subset of "small MS4s" as defined in this section.

Riparian Forest Buffer means an area of permanent vegetation consisting of native trees, shrubs, forbs and grasses along surface water that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and buffer land use activities from surface waters.

Small Municipal Separate Storm Sewer System (Small MS4) means an MS4, as defined in this section, that is not a large or medium MS4 pursuant to 40 CFR §§ 122.26(b)(4) and 122.26(b)(7). The term small MS4 includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.26(b)(16))

Standard Operating Procedure (SOP) means a policy or set of procedures that are enacted by a non-municipal permittee to implement a stormwater management program.

Storm Sewershed means the land area that drains to an individual MS4 outfall from within the jurisdiction of the MS4 permittee. The term "combined storm sewershed" means the drainage areas of all MS4 outfalls that discharge to a specific surface water or to waters within the Chesapeake Bay watershed.

Stormwater means runoff from precipitation, snow melt runoff and surface runoff and drainage. "Stormwater" has the same meaning as "storm water." (25 Pa. Code § 92a.2)

Structural BMPs means stormwater storage and management practices including, but not limited to, wet ponds and extended detention outlet structures; filtration practices such as grassed swales, sand filters and filter strips; infiltration practices such as infiltration basins and infiltration trenches; and other BMPs as referenced in Chapter 6 of the Pennsylvania Stormwater BMP Manual (363-0300-002).

Surface Waters means perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process. (25 Pa. Code § 92a.2)

Total Maximum Daily Load (TMDL) means the sum of individual waste load allocations for point sources, load allocations for nonpoint sources and natural quality and a margin of safety expressed in terms of mass per time, toxicity or other appropriate measures. (25 Pa. Code § 96.1)

Urbanized Area (UA) means 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.

Wasteload Allocation (WLA) means the portion of a surface water's loading capacity that is allocated to existing and future point source discharges. (25 Pa. Code § 96.1)

Water Quality Criteria means numeric concentrations, levels or surface water conditions that need to be maintained or attained to protect existing and designated uses. (25 Pa. Code § 93.1)

Water Quality Standards means the combination of water uses to be protected and the water quality criteria necessary to protect those uses. (25 Pa. Code § 92a.2)

III. MONITORING, REPORTING AND RECORDKEEPING

A. Where samples are collected and analyzed or measurements are taken under this General Permit, the permittee shall assure:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(j)(1))

2. Records of monitoring information shall include (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(j)(3)):

    a. The date, exact place, and time of sampling or measurements.
    b. The individual(s) who performed the sampling or measurements.
    c. The date(s) analyses were performed.
    d. The individual(s) who performed the analyses.
    e. The analytical techniques or methods used.
    f. The results of such analysis.

3. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 unless another method is required under 40 CFR Subchapters N or O. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(j)(4))

B. Records Retention – All records of monitoring activities and results, copies of all plans and reports required by this General Permit, and records of all data used to complete the application for this General Permit shall be retained by the permittee for at least 5 years from the date of the sample measurement, report or application. Such records must be submitted to DEP upon request or as required for annual reports. The permittee must make records available to the public at reasonable times during regular business hours. (25 Pa. Code § 92a.3(c), 40 CFR §§ 122.34(g)(2) and 122.41(j)(2))

C. Proper Operation and Maintenance (O&M) – The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), including stormwater BMPs, that are installed or used by the permittee to achieve compliance with the conditions of this permit. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(e))

D. Reporting Requirements

1. The permittee shall submit a complete Annual MS4 Status Report using DEP's annual report template (3800-FM-BPNPSM0491) to the DEP regional office that issued General Permit coverage approval by September 30 of each year.

   a. For existing permittees, the first annual report submitted to DEP under this General Permit shall have a reporting period starting from the end of the latest annual or progress report period (under the previous General Permit) to June 30, 2018. The first annual report is due by September 30, 2018. For new permittees, the first annual report is due by September 30 following the first year of General Permit coverage.

   b. Following the first annual report, the reporting period shall thereafter be July 1 - June 30, and the report shall be due by September 30.

2. In addition to the Annual MS4 Status Report submitted to the DEP regional office, a check or money order in the amount of $500.00, which is an installment of the NOI fee, shall be submitted to DEP's Central Office, made payable to "Commonwealth of Pennsylvania." The fee shall be submitted by September 30 of each year to the following address:

   PA Department of Environmental Protection
   Bureau of Clean Water
   Rachel Carson State Office Building
   400 Market Street, PO Box 8466
   Harrisburg, PA 17105-8466

   For existing permittees, the first fee is due by September 30, 2018. For new permittees, the first fee is due by September 30 following the first year of General Permit coverage.

3. The permittee shall submit the Annual MS4 Status Report and fee to DEP electronically upon receipt of written notification from DEP.

4. Unanticipated Non-Compliance or Potential Pollution Reporting

   a. Immediate Reporting - The permittee shall immediately report any incident causing or threatening pollution in accordance with the requirements of 25 Pa. Code §§ 91.33 and 92a.41(b) listed below:

      (i) If, because of an accident, other activity or incident a toxic substance or another substance which would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, the permittee shall immediately notify DEP by telephone of the location and nature of the danger. Oral notification to the Department is required as soon as possible, but no later than 4 hours after the permittee becomes aware of the incident causing or threatening pollution.

      (ii) If reasonably possible to do so, the permittee shall immediately notify downstream users of the waters of the Commonwealth to which the substance was discharged. Such notice shall include the location and nature of the danger.

      (iii) The permittee shall immediately take or cause to be taken steps necessary to prevent injury to property and downstream users of the waters from pollution or a danger of pollution and, in addition, within 15 days from the incident, shall remove the residual substances contained thereon or therein from the ground and from the affected waters of this Commonwealth to the extent required by applicable law.

b. The permittee shall report any non-compliance which may endanger health or the environment in accordance with the requirements of 40 CFR § 122.41(l)(6). These requirements include the following obligations:

(i) 24 Hour Reporting - The permittee shall orally report any non-compliance with this permit which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances.

(ii) Written Report - A written submission shall also be provided within 5 days of the time the permittee becomes aware of any non-compliance which may endanger health or the environment. The written submission shall contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance.

(iii) Waiver of Written Report - DEP may waive the written report on a case-by-case basis if the associated oral report has been received within 24 hours from the time the permittee becomes aware of the circumstances which may endanger health or the environment. Unless such a waiver is expressly granted by DEP, the permittee shall submit a written report in accordance with this paragraph. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(l)(6)(iii))

5. Other Non-Compliance

The permittee shall report all instances of non-compliance not reported under paragraph D.4 of this section or specific requirements of compliance schedules, at the time Annual Reports are submitted, on the Non-Compliance Reporting Form (3800-FM-BPNPSM0440). The reports shall contain the information listed in paragraph D.4.b.(ii) of this section. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(l)(7))

6. Signatory Requirements

a. Completed Annual Reports and all other reports, NOIs, and information submitted to DEP shall be signed and certified by either of the following applicable persons, as defined in 25 Pa. Code § 92a.22:

- For a corporation - by a principal executive officer of at least the level of vice president, or an authorized representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the NPDES form originates.
- For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.
- For a municipality, state, federal or other public agency - by a principal executive officer or ranking elected official.

b. If signed by a person other than the above, the person must be a duly authorized representative of the permittee. A person is a duly authorized representative only if:

- The authorization is made in writing by a person described in paragraph a., above, and submitted to DEP.
- The authorization specifies either an individual or a position having responsibility for the operation of the regulated system, facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

c. Changes in Signatory Authorization - If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the system or facility, a new authorization satisfying the requirements of paragraphs 6.a and 6.b, above, must be submitted to DEP prior to or together with any reports, information or NOI to be signed by an authorized representative.

PART B

STANDARD CONDITIONS

I. MANAGEMENT REQUIREMENTS

A. Compliance

The permittee must comply with all conditions of this General Permit. Any permit non-compliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(a))

B. Permit Modification, Termination, or Revocation and Reissuance

1. Permit coverage may be modified, terminated, or revoked and reissued during its term in accordance with Title 25 Pa. Code §§ 92a.72 and 92a.74 and 40 CFR § 122.41(f).

2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not stay any General Permit condition. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(f))

C. Duty to Provide Information

1. The permittee shall furnish to DEP, within a reasonable time, any information which DEP may request to determine whether cause exists for modifying, revoking and reissuing, or terminating coverage under this General Permit, or to determine compliance with this General Permit. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(h))

2. The permittee shall furnish to DEP, upon request, copies of records required to be kept by this General Permit. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(h))

3. Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in an NOI, or submitted incorrect information in an NOI or in any report to DEP, it shall promptly submit the correct and complete facts or information. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(l)(8))

4. The permittee shall give advance notice to the DEP office that approved permit coverage of any planned physical alterations or additions to the regulated small MS4. Notice is only required when: 1) the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR § 122.29(b), or 2) the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(l))

D. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(d))

II. PENALTIES AND LIABILITY

A. Violations of Permit Conditions

1. Any person violating Sections 301, 302, 306, 307, 308, 318 or 405 of the CWA or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative and/or criminal penalties as set forth in 40 CFR § 122.41(a)(2).

2. Any person or municipality, who violates any provision of this General Permit; any rule, regulation or order of DEP; or any condition or limitation of any permit issued pursuant to the Clean Streams Law, is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

B. Falsifying Information

Any person who does any of the following:

- Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or

- Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or non-compliance)

Shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 Pa.C.S.A. § 4904 and 40 CFR §§ 122.41(j)(5) and (k)(2).

C. Liability

1. Nothing in this General Permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance pursuant to Section 309 of the CWA or Sections 602, 603 or 605 of the Clean Streams Law.

2. Nothing in this General Permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under the CWA and the Clean Streams Law.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(c))

III. OTHER RESPONSIBILITIES

A. Right of Entry

Pursuant to Section 5(b) of Pennsylvania's Clean Streams Law (35 P.S. § 691.5(b)), 25 Pa. Code Chapter 92a and 40 CFR § 122.41(i), the permittee shall allow authorized representatives of DEP and EPA, upon the presentation of credentials and other documents as may be required by law:

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this General Permit; (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(i)(1))

2. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this General Permit; (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(i)(2))

3. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this General Permit; and (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(i)(3))

4. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Clean Streams Law, any substances or parameters at any location. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(i)(4))

B. Transfer of Permits

1. Transfers by modification. Except as provided in paragraph B.2 of this section, permit coverage may be transferred by the permittee to a new owner or operator only if this General Permit coverage has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.61(a))

2. Automatic transfers. As an alternative to transfers under paragraph 1 of this section, any NPDES permit may be automatically transferred to a new permittee if:

a. The current permittee notifies DEP at least 30 days in advance of the proposed transfer date in paragraph 2.b. of this section; (25 Pa. Code § 92a.3(c) and 40 CFR § 122.61(b)(1))

b. The notice includes the appropriate DEP transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them; (25 Pa. Code § 92a.3(c) and 40 CFR § 122.61(b)(2))

c. DEP does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue coverage under this General Permit, the transfer is effective on the date specified in the agreement mentioned in paragraph 2.b. of this section; and (25 Pa. Code § 92a.3(c) and 40 CFR § 122.61(b)(3))

d. The new permittee is in compliance with existing DEP issued permits, regulations, orders and schedules of compliance, or has demonstrated that any non-compliance with the existing permits has been resolved by an appropriate compliance action or by the terms and conditions of the permit (including compliance schedules set forth in the permit), consistent with 25 Pa. Code § 92a.51 (relating to schedules of compliance) and other appropriate DEP regulations. (25 Pa. Code § 92a.71)

3. In the event DEP does not approve transfer of coverage under this General Permit, the new owner or controller must submit a new NOI.

C. Property Rights - The approval of coverage under this General Permit does not convey any property rights of any sort, or any exclusive privilege. (25 Pa. Code § 92a.3(c) and 40 CFR § 122.41(g))

D. Duty to Reapply - The submission of the Annual MS4 Status Reports (3800-FM-BPNPSM0491) in accordance with Part A III.D of this General Permit constitutes the submission of an NOI for continued coverage under the General Permit. In addition, the permittee must submit an NOI (3800-PM-BCW0100b) to continue coverage under this General Permit when notified by DEP in writing.

E. Severability – The provisions of this General Permit are severable. If any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected.

PART C

SPECIAL CONDITIONS

I. STORMWATER MANAGEMENT PROGRAM (SWMP)

A. The permittee must develop, implement, and enforce an SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act and Pennsylvania Clean Streams Law, as described in paragraph B, below. There are six Minimum Control Measures (MCMs) that comprise the SWMP. Specific BMPs are identified under each MCM. The permittee shall demonstrate compliance with the SWMP through the submission of Annual MS4 Status Reports due by September 30 each year.

B. Minimum Control Measures (MCMs)

1. **MCM #1**: Public Education and Outreach on Stormwater Impacts. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.34(b)(1))

The permittee shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

a. **BMP #1**: Develop, implement and maintain a written Public Education and Outreach Program.

(1) For new permittees, a written Public Education and Outreach Program (PEOP) shall be developed and implemented within one year following approval of coverage under this General Permit, and shall be re-evaluated each year thereafter and revised as needed.

(2) For existing permittees, the existing PEOP shall be reviewed annually and revised as necessary.

The permittee's PEOP shall be designed to achieve measurable improvements in the target audience's understanding of the causes and impacts of stormwater pollution and the steps they can take to prevent it.

b. **BMP #2**: Develop and maintain lists of target audience groups that are present within the areas served by the permittee's regulated small MS4. In most communities, the target audiences shall include residents, businesses (including commercial, industrial and retailers), developers, schools, and municipal employees.

(1) For new permittees, the lists shall be developed within one year following approval of coverage under this General Permit, and reviewed and updated as necessary every year thereafter.

(2) For existing permittees, the lists shall continue to be reviewed and updated annually.

c. **BMP #3**: The permittee shall annually publish at least one issue of a newsletter, a pamphlet, a flyer, or a website that includes general stormwater educational information, a description of the permittee's SWMP, and/or information about the permittee's stormwater management activities. The list of publications and the content of the publications must be reviewed and updated at least once during each year of permit coverage. Publications should include a list of references (or links) to refer the reader to additional information (e.g., DEP and EPA stormwater websites, and any other sources that will be helpful to readers). The permittee must implement at least one of the following alternatives:

- Publish and distribute in printed form a newsletter, a pamphlet or a flyer containing information consistent with this BMP.

- Publish educational and informational items including links to DEP's and EPA's stormwater websites on the permittee's website.

(1) For new permittees, stormwater educational and informational items shall be produced and published in print and/or on the Internet within the first year of permit coverage.

(2) In subsequent years, and for existing permittees, the list of items published and the content in these items shall be reviewed, updated, and maintained annually.

The permittee's publications shall contain stormwater educational information that addresses one or more of the six MCMs.

d. **BMP #4**: Distribute stormwater educational materials and/or information to the target audiences using a variety of distribution methods, including but not limited to: displays, posters, signs, pamphlets, booklets, brochures, radio, local cable TV, newspaper articles, other advertisements (e.g., at bus and train stops/stations), bill stuffers, presentations, conferences, meetings, fact sheets, giveaways, and storm drain stenciling.

All permittees shall select and utilize at least two distribution methods annually. These are in addition to BMP #3, above.

2. **MCM #2**: Public Involvement / Participation. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.34(b)(2))

The permittee shall comply with applicable state and local public notice requirements when implementing a public involvement / participation program.

a. **BMP #1**: Develop, implement and maintain a written Public Involvement and Participation Program (PIPP) which describes various types of possible participation activities and describes methods of encouraging the public's involvement and of soliciting the public's input.

The PIPP for new permittees shall be developed and implemented within one year following approval of coverage under this General Permit. All permittees shall reevaluate the PIPP annually and make revisions as necessary.

The PIPP shall include, at a minimum:

(1) Opportunities for the public to participate in the decision-making processes associated with the development, implementation, and update of programs and activities related to this General Permit.

(2) Methods of routine communication to groups such as watershed associations, environmental advisory committees, and other environmental organizations that operate within proximity to the permittee's regulated small MS4s or surface waters receiving the permittee's discharges.

(3) Making Annual MS4 Status Reports and all other plans, programs, maps and reports required by this General Permit available to the public on the permittee's website, at the permittee's office(s), or by mail upon request.

b. **BMP #2**: The permittee shall advertise to the public and solicit public input on the following documents prior to adoption or submission to DEP:

- Stormwater Management Ordinances (for municipalities);
- Standard Operating Procedures (SOPs) (for non-municipal entities); and
- Pollutant Reduction Plans (PRPs), including modifications thereto.

(1) For Ordinances and SOPs, the permittee shall provide notice to the public; provide opportunities for public comment; document and evaluate the public comments; and document

the permittee's responses to the comments prior to finalizing the documents. The permittee shall provide this documentation to DEP upon request.

(2) For PRPs, public participation requirements are specified in Appendices D and E of this General Permit.

c. **BMP #3**: Regularly solicit public involvement and participation from the target audience groups using available distribution and outreach methods. This shall include an effort to solicit public reporting of suspected illicit discharges. Assist the public in their efforts to help implement the SWMP.

(1) The permittee shall solicit public involvement and participation from target audience groups on the implementation of the SWMP. The solicitation can take the form of public meetings or other events. The public shall be given notice in advance of each meeting or event. During the meetings or events, the permittee should present a summary of progress, activities, and accomplishments with implementation of the SWMP, and the permittee should provide opportunities for the public to provide feedback and input. The presentation can be made at specific MS4 events or during any other public meeting. Existing permittees shall conduct at least one public meeting that includes information on SWMP implementation by March 15, 2023; new permittees shall conduct at least one public meeting within 5 years following approval of General Permit coverage.

(2) The permittee shall document and report instances of cooperation and participation in MS4 activities; presentations the permittee made to local watershed organizations and conservation organizations; and similar instances of participation or coordination with organizations in the community.

(3) The permittee shall also document and report activities in which members of the public assisted or participated in the meetings and in the implementation of the SWMP, including education activities or organized implementation efforts such as cleanups, monitoring, storm drain stenciling, or others.

3. **MCM #3**: Illicit Discharge Detection and Elimination (IDD&E). (25 Pa. Code § 92a.32(a) and 40 CFR § 122.34(b)(3))

The permittee shall develop, implement and enforce a program to detect and eliminate illicit discharges into the permittee's regulated small MS4.

a. **BMP #1**: The permittee shall develop and implement a written program for the detection, elimination, and prevention of illicit discharges into the regulated small MS4. The program shall include the following:

- Procedures for identifying priority areas. These are areas with a higher likelihood of illicit discharges, illicit connections or illegal dumping. Priority areas may include areas with older infrastructure, a concentration of high-risk activities, or past history of water pollution problems.

- Procedures for screening outfalls in priority areas. The program shall include dry weather field screening of outfalls for non-stormwater flows, and sampling of dry weather discharges for selected chemical and biological parameters. Test results shall be used as indicators of possible discharge sources.

- Procedures for identifying the source of an illicit discharge when a contaminated flow is detected at a regulated small MS4 outfall.

- Procedures for eliminating an illicit discharge.

- Procedures for assessing the potential for illicit discharges caused by the interaction of sewage disposal systems (e.g., on-lot septic systems, sanitary piping) with storm drain systems.

- Mechanisms for gaining access to private property to inspect outfalls (e.g., land easements, consent agreements, search warrants) and for investigating illicit connections and discharges.

- Procedures for program documentation, evaluation and assessment. Records shall be kept of all outfall inspections, flows observed, results of field screening and testing, and other follow-up investigation and corrective action work performed under this program.

- Procedures for addressing information or complaints received from the public.

(1) For new permittees, the IDD&E program shall be developed during the first year of coverage under this General Permit and shall be implemented and evaluated each year thereafter.

(2) For existing permittees, the IDD&E program shall continue to be implemented and evaluated annually.

b. **BMP #2**: The permittee shall develop and maintain map(s) that show permittee and urbanized area boundaries, the location of all outfalls and, if applicable, observation points, and the locations and names of all surface waters that receive discharges from those outfalls. Outfalls and observation points shall be numbered on the map(s).

(1) For new permittees, the map(s) must be developed and submitted to DEP as an attachment to an Annual MS4 Status Report by September 30, 2022 or the fourth (4^{th}) Annual MS4 Status Report following approval of coverage under this General Permit, whichever is later.

(2) For existing permittees, the existing map(s) shall be updated and maintained as necessary during each year of coverage under this General Permit.

c. **BMP #3**: In conjunction with the map(s) created under BMP #2 (either on the same map or on a different map), the permittee shall develop and maintain map(s) that show the entire storm sewer collection system within the permittee's jurisdiction that are owned or operated by the permittee (including roads, inlets, piping, swales, catch basins, channels, and any other components of the storm sewer collection system), including privately-owned components of the collection system where conveyances or BMPs on private property receive stormwater flows from upstream publicly-owned components.

(1) For new permittees, the map(s) must be developed and submitted to DEP as an attachment to an Annual MS4 Status Report by September 30, 2022 or the fourth (4^{th}) Annual MS4 Status Report following approval of coverage under this General Permit, whichever is later.

(2) For existing permittees, the existing map(s) shall be updated and maintained as necessary during each year of coverage under this General Permit.

d. **BMP #4**: The permittee shall conduct dry weather screenings of its MS4 outfalls to evaluate the presence of illicit discharges. If any illicit discharges are present, the permittee shall identify the source(s) and take appropriate actions to remove or correct any illicit discharges. The permittee shall also respond to reports received from the public or other agencies of suspected or confirmed illicit discharges associated with the storm sewer system, as well as take enforcement action as necessary. The permittee shall immediately report to DEP illicit discharges that would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, in accordance with Part A III.D.4 of this General Permit.

(1) For new permittees, all of the identified regulated small MS4 outfalls shall be screened during dry weather at least twice within the 5-year period following approval of coverage under this General Permit.

(2) For existing permittees, each of the identified regulated small MS4 outfalls shall be screened during dry weather at least once by March 15, 2023. For areas where past problems have been reported or known sources of dry weather flows occur on a continual basis, outfalls shall be screened annually during each year of permit coverage.

(3) If a discharge is observed from any outfall during dry weather screenings, the discharge shall be inspected for color, odor, floating solids, scum, sheen, and substances that result in observed deposits in the surface waters. In addition, the discharge cannot contain substances that result in deposits in the receiving water or produce an observable change in the color, odor or turbidity of the receiving water.

If the discharge exhibits any of the above characteristics, or contains any other pollutants or causes an observed change in the surface waters, the permittee shall sample the discharge(s) for field and/or laboratory analysis of one or more common IDD&E parameters in order to determine if the dry weather flow is illicit. Possible parameters include, but are not limited to: pH, Conductivity, Fecal Coliform bacteria, Heavy Metals, Chemical Oxygen Demand (COD), 5-day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Oil and Grease, Total Residual Chlorine (TRC) and Ammonia-Nitrogen. Proper quality assurance and quality control procedures shall be followed when collecting, transporting or analyzing water samples. The permittee shall retain sample results with the inspection report in accordance with Part A III.B of this General Permit.

(4) Each time an outfall is screened, the permittee shall record outfall observations, regardless of the presence of dry weather flow. All outfall inspections shall be documented on the MS4 Outfall Field Screening Report form (3800-FM-BCW0521), or equivalent. The report must be signed by the inspector and be maintained by the permittee in accordance with Part A III.B of this General Permit. If an outfall flow is determined by the permittee to be illicit, the actions taken to identify and eliminate the illicit flow shall also be documented.

(5) The permittee shall summarize the results of outfall inspections and actions taken to remove or correct illicit discharges in Annual MS4 Status Reports.

(6) If the permittee determines that an outfall cannot be accessed due to safety or other reasons, the permittee shall establish an "observation point" at an appropriate location prior to the outfall where outfall field screening shall be performed. If observation points are established by the permittee, such points shall be identified on the map required under BMP #2 of this section.

(7) Permittees must ensure that outfalls are properly maintained in accordance with Part C I.B.6.b of this General Permit.

e. **BMP #5**: Enact a Stormwater Management Ordinance or SOP to implement and enforce a stormwater management program that includes prohibition of non-stormwater discharges to the regulated small MS4.

(1) Municipal permittees shall submit a copy of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4^{th}) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(2) Permittees that lack the authority to enact ordinances (non-municipal permittees and counties) shall develop and adopt an SOP that prohibits non-stormwater discharges consistent with this General Permit, and shall submit a copy of the SOP as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4^{th}) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(3) Notice must be provided to DEP of the approval of any waiver or variance by the permittee that allows an exception to non-stormwater discharge provisions of an ordinance or SOP. This

notice shall be submitted in the next Annual MS4 Status Report following approval of the waiver or variance.

f. **BMP #6**: Provide educational outreach to public employees, business owners and employees, property owners, the general public and elected officials (i.e., target audiences) about the program to detect and eliminate illicit discharges.

(1) During each year of permit coverage, appropriate educational information concerning illicit discharges shall be distributed to the target audiences using methods outlined under MCM #1. The permittee shall establish and promote a stormwater pollution reporting mechanism (e.g., a complaint line with message recording) by the end of the first year of General Permit coverage for the public to use to notify the permittee of illicit discharges, illegal dumping or outfall pollution. The permittee shall respond to all complaints in a timely and appropriate manner. The permittee shall document all responses, including the action taken, the time required to take the action, and whether the complaint was resolved successfully.

(2) Educational outreach may include: distribution of brochures and guidance for target audiences including schools; programs to encourage and facilitate public reporting of illicit discharges; organizing volunteers to locate and visually inspect outfalls and to stencil storm drains; and implement and encourage recycling programs for common wastes such as motor oil, antifreeze and pesticides.

4. **MCM #4**: Construction Site Stormwater Runoff Control. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.34(b)(4))

Permittees with coverage under the PAG-13 General Permit must rely on DEP's program for issuing NPDES permits for stormwater discharges associated with construction activities to satisfy MCM #4. In addition to relying on the state NPDES permit program for stormwater discharges associated with construction activities, the permittee shall implement the BMPs identified below.

a. **BMP #1**: The permittee may not issue a building or other permit or final approval to those proposing or conducting earth disturbance activities requiring an NPDES permit unless the party proposing the earth disturbance has valid NPDES Permit coverage (i.e., not expired) under 25 Pa. Code Chapter 102.

b. **BMP #2**: A municipality or county which issues building or other permits shall notify DEP or the applicable county conservation district (CCD) within 5 days of the receipt of an application for a permit involving an earth disturbance activity consisting of one acre or more, in accordance with 25 Pa. Code § 102.42.

c. **BMP #3**: Enact, implement and enforce an ordinance or SOP to require the implementation and maintenance of E&S control BMPs, including sanctions for non-compliance, as applicable.

(1) Municipal permittees shall enact, implement, and enforce an ordinance to require the implementation of E&S control BMPs, including sanctions for non-compliance. All municipal permittees shall submit a copy of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4^{th}) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(2) Permittees that lack the authority to enact ordinances shall develop, implement and enforce an SOP to require the implementation and maintenance of E&S control BMPs by September 30, 2022 (existing permittees) or the first Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

5. **MCM #5**: Post-Construction Stormwater Management (PCSM) in New Development and Redevelopment. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.34(b)(5))

Permittees with coverage under the PAG-13 General Permit must rely on DEP's program for issuing NPDES permits for stormwater discharges associated with construction activities to satisfy MCM #5. In addition to relying on the state NPDES permit program for stormwater discharges associated with construction activities, the permittee shall implement the BMPs identified below.

a. **BMP #1**: Enact, implement and enforce an ordinance or SOP to require post-construction stormwater management from new development and redevelopment projects, including sanctions for non-compliance.

   (1) Municipal permittees shall enact, implement, and enforce an ordinance to require the implementation of PCSM BMPs, including sanctions for non-compliance. All municipal permittees shall submit a copy of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

   (2) Permittees that lack the authority to enact ordinances shall develop, implement and enforce an SOP to require the implementation and maintenance of PCSM BMPs and submit the SOP to DEP by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

b. **BMP #2**: Develop and implement measures to encourage and expand the use of Low Impact Development (LID) in new development and redevelopment. Measures should also be included to encourage retrofitting LID into existing development. Guidance on implementing LID practices may be found on DEP's MS4 website, www.dep.pa.gov/MS4. Enact ordinances consistent with LID practices and repeal sections of ordinances that conflict with LID practices. Submission of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) will satisfy this BMP.

c. **BMP #3**: Ensure adequate O&M of all post-construction stormwater management BMPs that have been installed at development or redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale.

   An inventory of PCSM BMPs shall be developed by new permittees by the end of the first year of General Permit coverage and shall be continually updated during the term of coverage under the General Permit as development projects are reviewed, approved, and constructed. Existing permittees shall update and maintain its current inventory during the term of coverage under the General Permit. The permittee must track the following information in its PCSM BMP inventory:

   - All PCSM BMPs that were installed to meet requirements in NPDES Permits for Stormwater Discharges Associated with Construction Activities approved since March 10, 2003.
   - The exact location of the PCSM BMP (e.g., latitude and longitude, with street address).
   - Information (e.g., name, address, phone number(s)) for BMP owners and entities responsible for BMP O&M, if different from BMP owners.
   - The type of BMP and the year it was installed.
   - Maintenance required for the BMP type according to the Pennsylvania Stormwater BMP Manual or other manuals and resources.
   - The actual inspection/maintenance activities conducted for each BMP.
   - An assessment by the permittee if proper O&M has occurred during the year and if not, what actions the permittee has taken, or shall take, to address compliance with O&M requirements.

6. **MCM #6**: Pollution Prevention / Good Housekeeping. (25 Pa. Code § 92a.32(a) and 40 CFR § 122.34(b)(6))

   The permittee must develop and implement an O&M program that includes a training component and has the ultimate goal of preventing and reducing pollutant runoff from operations, facilities and activities under the control of the permittee (collectively, "operations"). The program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

   a. **BMP #1**: Identify and document all operations that are owned or operated by the permittee and have the potential for generating pollution in stormwater runoff to the regulated small MS4. This includes activities conducted by contractors for the permittee. Activities may include the following: street sweeping; snow removal/deicing; inlet/outfall cleaning; lawn/grounds care; general storm sewer system inspections and maintenance/repairs; park and open space maintenance; municipal building maintenance; new construction and land disturbances; right-of-way maintenance; vehicle operation, fueling, washing and maintenance; and material transfer operations, including leaf/yard debris pickup and disposal procedures. Facilities can include streets; roads; highways; parking lots and other large paved surfaces; maintenance and storage yards; waste transfer stations; parks; fleet or maintenance shops; wastewater treatment plants; stormwater conveyances (open and closed pipe); riparian buffers; and stormwater storage or treatment units (e.g., basins, infiltration/filtering structures, constructed wetlands, etc.).

      (1) New permittees shall create an inventory of all operations and land uses that may contribute to pollution in stormwater runoff within areas of operations that discharge to the regulated small MS4 by the end of the first year of General Permit coverage, and review and update the inventory annually thereafter.

      (2) All permittees must review and update the inventory each year of General Permit coverage, as necessary.

   b. **BMP #2**: Develop, implement and maintain a written O&M program for all operations that could contribute to the discharge of pollutants from the regulated small MS4, as identified under BMP #1. This program shall address stormwater collection or conveyance systems within the regulated MS4. The written O&M program shall stress pollution prevention and good housekeeping measures, contain site-specific information, and include the following:

      - Management practices, policies, and procedures shall be developed and implemented to reduce or prevent the discharge of pollutants to the regulated small MS4s. The permittee shall consider eliminating maintenance area discharges from floor drains and other drains if they have the potential to discharge to storm sewers.

      - Maintenance activities, maintenance schedules, and inspection procedures to reduce the potential for pollutants to reach the regulated small MS4s.

      - Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, salt / sand (anti-skid) storage locations and snow disposal areas. Controls for solid chemical products stored and utilized for the principal purpose of deicing roadways for public safety must be consistent with the BMPs for existing salt storage and distribution sites contained in the PAG-03 NPDES General Permit for Stormwater Discharges Associated with Industrial Activity.

      - Procedures for the proper disposal of waste, including dredge spoil, accumulated sediments, trash, household hazardous waste, used motor oil, street sweepings, and other debris.

      (1) New permittees shall develop and implement a written O&M program by the end of the first year of General Permit coverage and review and update the program each year thereafter.

(2) All permittees must review and update the written O&M program each year of General Permit coverage, as necessary.

c. **BMP #3**: Develop and implement an employee training program that addresses appropriate topics to further the goal of preventing or reducing the discharge of pollutants from operations to the regulated small MS4. The program may be developed and implemented using guidance and training materials that are available from federal, state or local agencies, or other organizations. All relevant employees and contractors shall receive training (i.e., public works staff, building, zoning, and code enforcement staff, engineering staff, police and fire responders, etc.). Training topics shall include operation, inspection, maintenance and repair activities associated with any of the operations identified under BMP #1. Training must cover all relevant parts of the permittee's overall stormwater management program that could affect operations, such as illicit discharge detection and elimination, construction sites, and ordinance requirements.

(1) New permittees shall develop and implement a training program that identifies the training topics that will be covered and what training methods and materials will be used by the end of the first year of General Permit coverage.

(2) All permittees must review and update the training program each year of General Permit coverage, as necessary.

(3) Employee training shall occur at least annually and shall be documented in writing and reported in Annual MS4 Status Reports. Documentation shall include the date(s) of the training, the names of attendees, the topics covered, and the training presenter(s).

II. POLLUTANT CONTROL MEASURES AND POLLUTANT REDUCTION PLANS

Permittees with coverage under this General Permit that discharge to impaired waters are required to implement Pollutant Control Measures (PCMs) and Pollutant Reduction Plans (PRPs), as applicable. Permittees are encouraged to consult DEP's MS4 Requirements Table, available at www.dep.pa.gov/MS4, to determine the applicability of PCMs under Appendices A, B, and C and PRPs under Appendices D and E of this General Permit.

A. PCMs are activities undertaken by the MS4 permittee to identify and control pollutant loading to impaired waters from MS4s, regardless of whether a TMDL has been approved. PCMs are BMPs and other strategies that are in addition to the permittee's SWMP identified in Part C I of this General Permit. PCMs must be implemented where the permittee 1) has at least one stormwater outfall that discharges to impaired waters, and 2) the "cause of impairment" is one or more of the causes listed in paragraphs A.1 through A.3, below.

1. Where surface waters are impaired for metals (e.g., Iron, Manganese and Aluminum) and/or pH associated with Abandoned Mine Drainage (AMD), the permittee shall implement the PCMs identified in **Appendix A** of this General Permit, in accordance with the schedule therein.

2. Where surface waters are impaired for Pathogens (e.g., Fecal Coliform), the permittee shall implement the PCMs identified in **Appendix B** of this General Permit, in accordance with the schedule therein.

3. Where surface waters are impaired for Priority Organic Compounds (e.g., Polychlorinated Biphenyls (PCBs), pesticides, or other organic compounds), the permittee shall implement the PCMs identified in **Appendix C** of this General Permit, in accordance with the schedule therein.

B. A PRP is a planning document prepared by the permittee which guides the selection and implementation of specific BMPs to reduce pollutant loading to surface waters. The objective of a PRP is to improve the condition of surface waters such that the waters eventually attain water quality standards and its designated and existing uses in accordance with 25 Pa. Code Chapter 93. A PRP shall be developed and submitted to DEP with the NOI if one or more of the following criteria are met:

1. At the time of the NOI submission, the permittee has at least one MS4 outfall that discharges to surface waters within the Chesapeake Bay watershed, or otherwise has at least one discharge to

storm sewers owned or operated by a different entity within the Chesapeake Bay watershed. Upon DEP's written approval of General Permit coverage, permittees shall implement the PRP in accordance with **Appendix D** of this General Permit.

2. At the time of the NOI submission, the permittee has at least one stormwater outfall that discharges to waters impaired for nutrients (i.e., nitrogen and/or phosphorus) and/or sediment (i.e., siltation), and a TMDL has not been approved for such waters, or a TMDL has been approved but no wasteload allocation (WLA) has been assigned by the TMDL for the permittee's discharge(s). Upon DEP's written approval of General Permit coverage, permittees shall implement the PRP in accordance with **Appendix E** of this General Permit.

III. OTHER REQUIREMENTS

A. Screenings and other solids collected by the permittee shall be handled, recycled and/or disposed of in compliance with the Solid Waste Management Act (35 P.S. §§ 6018.101 – 6018.1003), 25 Pa. Code Chapters 287, 288, 289, 291, 295, 297, and 299 (relating to requirements for landfilling, impoundments, land application, composting, processing, and storage of residual waste), federal regulation 40 CFR Part 257, The Clean Streams Law, and the Federal Clean Water Act and its amendments.

B. DEP may require monitoring of stormwater discharge(s) as may be reasonably necessary in order to characterize the nature, volume or other attributes of that discharge or its sources.

C. The permittee shall ensure that its SWMP, including its Stormwater Management Ordinance(s) or SOPs, is designed to prevent increased loadings of pollutants and to not cause or contribute to a violation of water quality standards by any discharge from its regulated small MS4.

D. The permittee shall develop and maintain adequate legal authorities, where applicable, and shall maintain adequate funding and staffing to implement this General Permit, including the SWMP contained in Part C I of this General Permit.

E. In accordance with 40 CFR § 122.35, the permittee may rely on another entity to satisfy NPDES permit obligations to implement a minimum control measure if: (1) the other entity, in fact, implements the control measure; (2) the particular control measure, or component thereof, is at least as stringent as the corresponding NPDES permit requirement; and (3) the other entity agrees to implement the control measure on the permittee's behalf. The permittee must specify in Annual MS4 Status Reports that it is relying on another entity to satisfy some of its NPDES permit obligations. The permittee remains responsible for compliance with permit obligations if the other entity fails to implement the control measure (or component thereof).

APPENDIX A

POLLUTANT CONTROL MEASURES FOR WATERS IMPAIRED BY METALS AND/OR pH ASSOCIATED WITH ABANDONED MINE DRAINAGE (AMD)

The permittee shall implement the following Pollutant Control Measures (PCMs) within the storm sewershed of any outfall that discharges to waters impaired due to metals (Iron, Manganese, Aluminum and others as applicable) and/or acidity (low pH) associated with Abandoned Mine Drainage (AMD), regardless of whether there is an approved TMDL.

A. Map and Inventory.

1. The permittee shall develop map(s) of the storm sewershed(s) associated with all outfalls that discharge to surface waters subject to Appendix A. The purpose is to identify the area the permittee is responsible for within its legal boundaries in developing a source inventory. For new permittees, the map(s) shall be submitted to DEP with an Annual MS4 Status Report that is due no later than two years following DEP's written approval of General Permit coverage. For existing permittees, the map(s) shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2019.

2. The permittee shall develop an inventory of all suspected and known anthropogenic (caused or produced by humans) sources of metals and/or acidity that are associated with AMD and that are located within the storm sewershed of outfalls discharging to surface waters subject to Appendix A. The inventory must identify whether the source is suspected or known, the basis for this determination, the responsible party (if known), and any corrective action the permittee has taken or plans to take for any of these sources. For new permittees, the inventory shall be submitted to DEP with an Annual MS4 Status Report that is due no later than three years following DEP's written approval of General Permit coverage. For existing permittees, the inventory shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2020.

B. The permittee shall complete an investigation of each suspected source. This investigation must include stormwater sampling if the investigation is required as part of implementing the IDD&E program under MCM #3 of the General Permit, and otherwise is voluntary. For new permittees, the results of the investigation shall be submitted to DEP with an Annual MS4 Status Report that is due no later than five years following DEP's written approval of General Permit coverage. For existing permittees, the results of the investigation shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2022.

C. Where it is determined that sources of metals and/or acidity are being discharged in stormwater from industrial sites into the permittee's MS4, the permittee shall notify DEP in writing within 90 days of the permittee's findings. DEP may require the owner or operator of the industrial site to submit an application for NPDES permit coverage and/or implement BMPs to reduce pollutant loadings. This written notification is required only once per industrial site.

D. The permittee shall document the progress of its investigations, source control efforts and BMPs to control sources of metals and/or acidity in its Annual MS4 Status Reports.

APPENDIX B

POLLUTANT CONTROL MEASURES FOR WATERS IMPAIRED BY PATHOGENS

The permittee shall implement the following Pollutant Control Measures (PCMs) within the storm sewershed of any outfall that discharges to waters impaired due to Pathogens (e.g., Fecal Coliform), regardless of whether there is an approved TMDL:

A. Map and Inventory.

1. The permittee shall develop map(s) of the storm sewershed(s) associated with all outfalls that discharge to surface waters subject to Appendix B. The purpose is to identify the area the permittee is responsible for within its legal boundaries in developing a source inventory. For new permittees, the map(s) shall be submitted to DEP with an Annual MS4 Status Report that is due no later than two years following DEP's written approval of General Permit coverage. For existing permittees, the map(s) shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2019.

2. The permittee shall develop an inventory of all suspected and known sources of bacteria in stormwater within the storm sewershed, at a minimum, that discharge to impaired waters. The inventory must identify whether the source is suspected or known, the basis for this determination, the responsible party (if known), and any corrective action the permittee has taken or plans to take for any of these sources. For new permittees, the inventory shall be submitted to DEP with an Annual MS4 Status Report is due no later than three years following DEP's written approval of General Permit coverage. For existing permittees, the inventory shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2020.

B. The permittee shall complete an investigation of each suspected source. This investigation must include stormwater sampling if the investigation is required as part of implementing the IDD&E program under MCM #3 of the General Permit, and otherwise is voluntary. For new permittees, the results of the investigation shall be submitted to DEP with an Annual MS4 Status Report that is due no later than five years following DEP's written approval of General Permit coverage. For existing permittees, the results of the investigation shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2022.

C. The permittee shall enforce ordinances that prohibit illicit and illegal connections and discharges of sewage to the MS4. Anytime an illicit and illegal connection or discharge of sewage into the MS4 is discovered by the permittee, the permittee shall report the finding in the subsequent Annual MS4 Status Report along with a description of corrective action by the permittee.

D. If not already established in its Stormwater Management Ordinance (municipal permittees) or SOP (non-municipal permittees), the permittee shall enact an ordinance or develop and adopt an SOP that requires proper management of animal wastes on property owned by the permittee. If an ordinance or SOP already exists that controls animal wastes, it must be attached to the first Annual MS4 Status Report due following the first year of coverage for new permittees and no later than September 30, 2018 for existing permittees (unless the ordinance or SOP was attached to the NOI for General Permit coverage). If a new ordinance or SOP is enacted or adopted, the new ordinance or SOP must be attached to the first Annual MS4 Status Report due following enactment or adoption, but no later than September 30, 2022.

E. The permittee shall document the progress of its investigations, source control efforts and BMPs to control sources of pathogens in its Annual MS4 Status Reports.

APPENDIX C

POLLUTANT CONTROL MEASURES FOR WATERS IMPAIRED BY PRIORITY ORGANIC COMPOUNDS

The permittee shall implement the following Pollutant Control Measures (PCMs) within the storm sewershed of any outfall that discharges to waters impaired due to Priority Organic Compounds, including but not limited to Polychlorinated Biphenyls (PCBs), Pesticides, and any other organic compound listed at 40 CFR Part 423, Appendix A, regardless of whether there is an approved TMDL:

A. Map and Inventory.

1. The permittee shall develop map(s) of the storm sewershed(s) associated with all outfalls that discharge to surface waters subject to Appendix C. The purpose is to identify the area the permittee is responsible for within its legal boundaries in developing a source inventory. For new permittees, the map(s) shall be submitted to DEP with an Annual MS4 Status Report that is due no later than two years following DEP's written approval of General Permit coverage. For existing permittees, the map(s) shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2019.

2. The permittee shall develop an inventory of all suspected and known anthropogenic (caused or produced by humans) sources of Priority Organic Compounds in stormwater within the drainage area of outfalls discharging to impaired waters. The inventory must identify whether the source is suspected or known, the basis for this determination, the responsible party (if known), and any corrective action the permittee has taken or plans to take for any of these sources. For new permittees, the inventory shall be submitted to DEP with an Annual MS4 Status Report that is due no later than three years following DEP's written approval of General Permit coverage. For existing permittees, the inventory shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2020.

B. The permittee shall complete an investigation of each suspected source. This investigation must include stormwater sampling if the investigation is required as part of implementing the IDD&E program under MCM #3 of the General Permit, and otherwise is voluntary. For new permittees, the results of the investigation shall be submitted to DEP with an Annual MS4 Status Report that is due no later than five years following DEP's written approval of General Permit coverage. For existing permittees, the results of the investigation shall be submitted to DEP with an Annual MS4 Status Report due no later than September 30, 2022.

C. Where it is determined that sources of Priority Organic Compounds are being discharged in stormwater from industrial sites into the permittee's MS4, the permittee shall notify DEP in writing within 90 days of the permittee's findings. DEP may require the owner or operator of the industrial site to submit an application for NPDES permit coverage and/or implement BMPs to reduce pollutant loadings. This written notification is required only once per industrial site.

D. The permittee shall document the progress of its investigations, source control efforts and BMPs to control sources of Priority Organic Compounds in its Annual MS4 Status Reports.

APPENDIX D

POLLUTANT REDUCTION PLAN REQUIREMENTS FOR DISCHARGES TO THE CHESAPEAKE BAY WATERSHED

MS4 permittees with at least one stormwater discharge to surface waters within the Cheseapeake Bay watershed must develop and submit a Chesapeake Bay Pollutant Reduction Plan (CBPRP) with the NOI to reduce the load of nutrients (nitrogen and phosphorus) and sediment to surface waters. In the event the permittee also has at least one stormwater discharge to local surface waters that are considered impaired for nutrients and/or sediment, the CBPRP may be combined with the PRP for localized nutrient and/or sediment impairment as described in Appendix E.

The CBPRP is approved upon DEP's approval of coverage under this General Permit. The permittee shall implement its approved CBPRP and comply with the following:

A. The permittee shall achieve the pollutant load reduction(s) (lbs/year) proposed in its CBPRP within 5 years following DEP's approval of coverage under the General Permit (identified on page 1 of the General Permit). The minimum percent reduction for pollutant loadings of sediment, Total Phosphorus (TP), and Total Nitrogen (TN) shall be 10%, 5%, and 3%, respectively, over the 5-year period following DEP's approval of coverage. Pollutant reduction efficiencies for selected BMPs shall be in accordance with the BMP Effectiveness Values document published by DEP (3800-PM-BCW0100m) or Chesapeake Bay Program Office expert panel reports. The permittee shall submit a report demonstrating implementation of the CBPRP as an attachment to the first Annual MS4 Status Report that is due following completion of the 5th year of General Permit coverage.

B. The BMPs proposed in the CBPRP for the term of General Permit coverage shall be implemented in accordance with the schedule in the CBPRP. In the event the permittee decides to modify the location, type or number of proposed BMPs or modify the storm sewershed map, the permittee shall submit an update to its CBPRP to DEP prior to implementing the changes. A modified CBPRP that meets the conditions of paragraphs 1 – 3 herein may be implemented upon submission to DEP unless DEP issues an objection in writing within 60 days.

C. Where submission of a modified CBPRP to DEP is required, the permittee shall solicit public involvement and participation, as follows:

   1. The permittee shall make a complete copy of the CBPRP available for public review.

   2. The permittee shall publish, in a newspaper of general circulation in the area, a public notice containing a statement describing the plan, where it may be reviewed by the public, and the length of time the permittee will provide for the receipt of comments. The public notice must be published at least 45 days prior to the deadline for submission of the PRP to DEP.

   3. The permittee shall accept written comments for a minimum of 30 days from the date of public notice.

   4. The permittee shall accept comments from any interested member of the public at a public meeting or hearing, which may include a regularly scheduled meeting of the governing body of the municipality or municipal authority that is the permittee.

   5. The permittee shall consider and make a record of the consideration of each timely comment received from the public during the public comment period concerning the plan, identifying any changes made to the plan in response to the comment.

   Modified CBPRPs submitted to DEP must include a copy of the newspaper notice, a copy of all written comments received from the public and a copy of the permittee's record of consideration of all timely comments received in the public comment period.

D. Progress with achieving the required pollutant load reductions shall be reported in each Annual MS4 Status Report.

APPENDIX E

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

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

The PRP is approved upon DEP's approval of coverage under this General Permit. The permittee shall implement its approved PRP and comply with the following:

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

B. The BMPs proposed in the PRP for the term of General Permit coverage shall be implemented in accordance with the schedule in the PRP. In the event the permittee decides to modify the location, type or number of proposed BMPs or modify the storm sewershed map, the permittee shall submit an update to its PRP to DEP prior to implementing the changes. A modified PRP that meets the conditions of paragraphs 1 – 3 herein may be implemented upon submission to DEP unless DEP issues an objection in writing within 60 days.

C. Where submission of a modified PRP to DEP is required, the permittee shall solicit public involvement and participation, as follows:

   1. The permittee shall make a complete copy of the PRP available for public review.

   2. The permittee shall publish, in a newspaper of general circulation in the area, a public notice containing a statement describing the plan, where it may be reviewed by the public, and the length of time the permittee will provide for the receipt of comments. The public notice must be published at least 45 days prior to the deadline for submission of the PRP to DEP.

   3. The permittee shall accept written comments for a minimum of 30 days from the date of public notice.

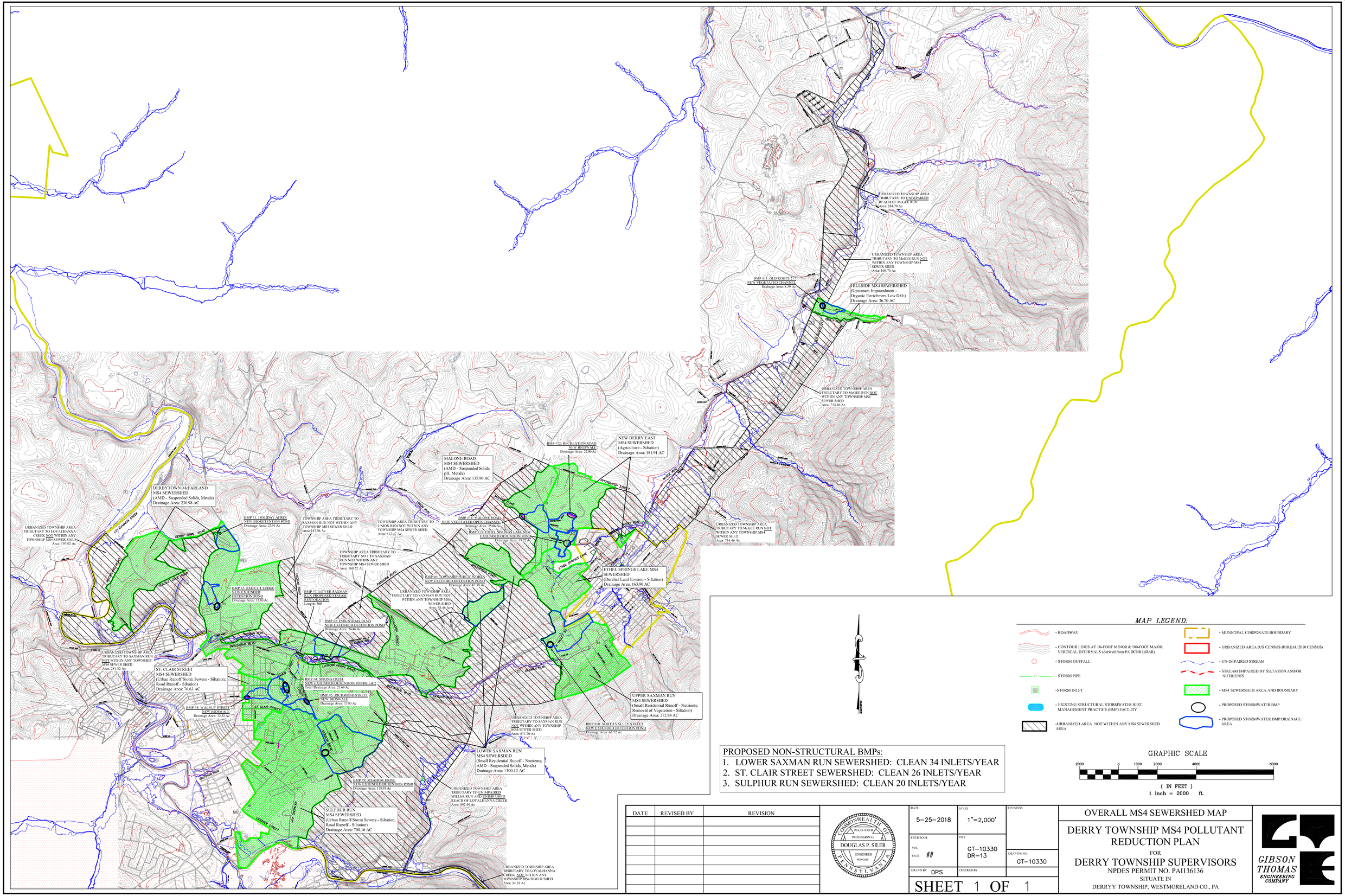
   4. The permittee shall accept comments from any interested member of the public at a public meeting or hearing, which may include a regularly scheduled meeting of the governing body of the municipality or municipal authority that is the permittee.

   5. The permittee shall consider and make a record of the consideration of each timely comment received from the public during the public comment period concerning the plan, identifying any changes made to the plan in response to the comment.

   Modified PRPs submitted to DEP must include a copy of the newspaper notice, a copy of all written comments received from the public and a copy of the permittee's record of consideration of all timely comments received in the public comment period.

D. Progress with achieving the required pollutant load reductions shall be reported in each Annual MS4 Status Report.

ATTACHMENT B - DERRY TOWNSHIP OVERALL MS4 SEWERSHED MAP



PROPOSED NON-STRUCTURAL BMPs:

1. LOWER SAXMAN RUN SEWERSHED: CLEAN 34 INLETS/YEAR
2. ST. CLAIR STREET SEWERSHED: CLEAN 26 INLETS/YEAR
3. SULPHUR RUN SEWERSHED: CLEAN 20 INLETS/YEAR

DATE	REVISED BY	REVISION

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — DOUGLAS P. SILER — ENGINEER — PE063689

DATE: 5-25-2018	SCALE: 1"=2,000'	REVISIONS:
FIELD BOOK VOL. / PAGE: ##	FILE: GT-10330 DR-13	DRAWING NO.: GT-10330
DRAWN BY: DPS	CHECKED BY:	

SHEET 1 OF 1

OVERALL MS4 SEWERSHED MAP

DERRY TOWNSHIP MS4 POLLUTANT REDUCTION PLAN

FOR

DERRY TOWNSHIP SUPERVISORS

NPDES PERMIT NO. PAI136136

SITUATE IN

DERRYY TOWNSHIP, WESTMORELAND CO., PA

GIBSON THOMAS ENGINEERING COMPANY

ATTACHMENT C - POLLUTANT LOADING RATES AND LOAD REDUCTION REQUIREMENTS FOR MS4 SEWERSHED STUDY AREAS WITHIN DERRY TOWNSHIP

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Derby Town - McFarland 230.98 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	1%	2.31	0.00	0.00	
Crops	*0%*	*0%*	*100%*	9%	0.00	0.00	20.79	
Grass	*0%*	*0%*	*100%*	22%	0.00	0.00	50.82	
Forest	*0%*	*0%*	*100%*	38%	0.00	0.00	87.77	
Water	*0%*	*0%*	*100%*	1%	0.00	0.00	2.31	
Bare	*0%*	*100%*	*0%*	6%	0.00	13.86	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	19%	5.27	30.72	7.90	
Commercial >75% Impervious	*85%*	*10%*	*5%*	4%	7.85	0.92	0.46	
TOTAL				**100%**	**15.43**	**45.50**	**170.05**	**230.98 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Lower Saxman Run 1300.12 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	6%	78.01	0.00	0.00	
Crops	*0%*	*0%*	*100%*	11%	0.00	0.00	143.01	
Grass	*0%*	*0%*	*100%*	15%	0.00	0.00	195.02	
Forest	*0%*	*0%*	*100%*	27%	0.00	0.00	351.03	
Water	*0%*	*0%*	*100%*	1%	0.00	0.00	13.00	
Bare	*0%*	*100%*	*0%*	6%	0.00	78.01	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	23%	35.88	209.32	53.82	
Residential 31-74% Impervious	*45%*	*40%*	*15%*	1%	5.85	5.20	1.95	
Commercial 5-30% Impervious	*30%*	*55%*	*15%*	1%	3.90	7.15	1.95	
Commercial 31-74% Impervious	*74%*	*15%*	*11%*	5%	48.10	9.75	7.15	
Commercial >75% Impervious	*85%*	*10%*	*5%*	4%	44.20	5.20	2.60	
TOTAL				**100%**	**215.95**	**314.63**	**769.54**	**1300.12 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

St Clair Street								76.63 AC
	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	8%	6.13	0.00	0.00	
Crops	*0%*	*0%*	*100%*	3%	0.00	0.00	2.30	
Grass	*0%*	*0%*	*100%*	3%	0.00	0.00	2.30	
Forest	*0%*	*0%*	*100%*	6%	0.00	0.00	4.60	
Bare	*0%*	*100%*	*0%*	3%	0.00	2.30	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	29%	2.67	15.56	4.00	
Commercial 5-30% Impervious	*30%*	*55%*	*15%*	1%	0.23	0.42	0.11	
Commercial >75% Impervious	*85%*	*10%*	*5%*	47%	30.61	3.60	1.80	
TOTAL				**100%**	**39.64**	**21.88**	**15.11**	**76.63 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Sulphur Run 708.16 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	4%	28.33	0.00	0.00	
Crops	*0%*	*0%*	*100%*	15%	0.00	0.00	106.22	
Grass	*0%*	*0%*	*100%*	12%	0.00	0.00	84.98	
Forest	*0%*	*0%*	*100%*	22%	0.00	0.00	155.80	
Water	*0%*	*0%*	*100%*	1%	0.00	0.00	7.08	
Bare	*0%*	*100%*	*0%*	3%	0.00	21.24	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	36%	30.59	178.46	45.89	
Commercial 5-30% Impervious	*30%*	*55%*	*15%*	2%	4.25	7.79	2.12	
Commercial 31-74% Impervious	*74%*	*15%*	*11%*	2%	10.48	2.12	1.56	
Commercial >75% Impervious	*85%*	*10%*	*5%*	3%	18.06	2.12	1.06	
TOTAL				**100%**	**91.71**	**211.74**	**404.71**	**708.16 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Upper Saxman Run 272.84 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	5%	13.64	0.00	0.00	
Crops	*0%*	*0%*	*100%*	1%	0.00	0.00	2.73	
Grass	*0%*	*0%*	*100%*	6%	0.00	0.00	16.37	
Forest	*0%*	*0%*	*100%*	37%	0.00	0.00	100.95	
Bare	*0%*	*100%*	*0%*	3%	0.00	8.19	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	48%	15.72	91.67	23.57	
TOTAL				**100%**	**29.36**	**99.86**	**143.62**	**272.84 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Hillside 36.7 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	1%	0.37	0.00	0.00	
Crops	*0%*	*0%*	*100%*	3%	0.00	0.00	1.10	
Grass	*0%*	*0%*	*100%*	34%	0.00	0.00	12.48	
Forest	*0%*	*0%*	*100%*	42%	0.00	0.00	15.41	
Bare	*0%*	*100%*	*0%*	20%	0.00	7.34	0.00	
TOTAL				**100%**	**0.37**	**7.34**	**28.99**	**36.70 AC**

New Derry East 181.91 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	1%	1.82	0.00	0.00	
Crops	*0%*	*0%*	*100%*	31%	0.00	0.00	56.39	
Grass	*0%*	*0%*	*100%*	36%	0.00	0.00	65.49	
Forest	*0%*	*0%*	*100%*	11%	0.00	0.00	20.01	
Water	*0%*	*0%*	*100%*	1%	0.00	0.00	1.82	
Bare	*0%*	*100%*	*0%*	1%	0.00	1.82	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	9%	1.96	11.46	2.95	
Commercial 5-30% Impervious	*30%*	*55%*	*15%*	1%	0.55	1.00	0.27	
Commercial 31-74% Impervious	*74%*	*15%*	*11%*	5%	6.73	1.36	1.00	
Commercial >75% Impervious	*85%*	*10%*	*5%*	4%	6.18	0.73	0.36	
TOTAL				**100%**	**17.25**	**16.37**	**148.29**	**181.91 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Ethel Springs Lake 163.9 AC

	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	9%	14.75	0.00	0.00	
Crops	*0%*	*0%*	*100%*	13%	0.00	0.00	21.31	
Grass	*0%*	*0%*	*100%*	12%	0.00	0.00	19.67	
Forest	*0%*	*0%*	*100%*	22%	0.00	0.00	36.06	
Water	*0%*	*0%*	*100%*	4%	0.00	0.00	6.56	
Bare	*0%*	*100%*	*0%*	4%	0.00	6.56	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	31%	6.10	35.57	9.15	
Commercial 5-30% Impervious	*30%*	*55%*	*15%*	1%	0.49	0.90	0.25	
Commercial >75% Impervious	*85%*	*10%*	*5%*	4%	5.57	0.66	0.33	
TOTAL				**100%**	**26.91**	**43.68**	**93.31**	**163.9 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	DerryTownship, Westmoreland County, PA		
PREPARED BY:	CW	DATE:	7/15/2018
CHECKED BY:	DPS	DATE:	7/15/2018

MS4 PRP SEWERSHED AREA LAND USE COVER DATA

Malone Road								135.96 AC
	% Dev Imperv	% Dev Perv	% Undev	% Cover	Imperv Area	Perv Area	Undev Area	
Roads	*100%*	*0%*	*0%*	7%	9.52	0.00	0.00	
Crops	*0%*	*0%*	*100%*	8%	0.00	0.00	10.88	
Grass	*0%*	*0%*	*100%*	14%	0.00	0.00	19.03	
Forest	*0%*	*0%*	*100%*	27%	0.00	0.00	36.71	
Bare	*0%*	*100%*	*0%*	1%	0.00	1.36	0.00	
Residential 5-30% Impervious	*12%*	*70%*	*18%*	28%	4.57	26.65	6.85	
Residential 31-74% Impervious	*45%*	*40%*	*15%*	13%	7.95	7.07	2.65	
Commercial >75% Impervious	*85%*	*10%*	*5%*	2%	2.31	0.27	0.14	
TOTAL				**100%**	**24.35**	**35.35**	**76.26**	**135.96 AC**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	Derry Township, Westmorland County, PA		
PREPARED BY:	CDW	DATE:	5/18/2018
CHECKED BY:	DPS	DATE:	5/30/2018

Total Net Existing Loads

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	461.0	14.8%	23.06	10,630	2.28	1,051	1,839.00	847,704
Developed Pervious	796.4	25.6%	20.72	16,500	0.84	669	264.96	211,001
Undeveloped	1849.9	59.5%	10.00	18,499	0.33	610	234.60	433,984
Total	3107.2	100.0%		**45,629**		**2,330**		**1,492,689**

Derbytown/McFarland - Lower Loyalhanna (Impairments: Suspended Solids)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	15.4	6.7%	23.06	356	2.28	35	1,839.00	28,375
Developed Pervious	45.5	19.7%	20.72	943	0.84	38	264.96	12,056
Undeveloped	170.0	73.6%	10.00	1,700	0.33	56	234.60	39,893
Total Gross	**231.0**	100.0%		**2,999**		**130**		**80,324**
Load Reductions								
								-
Total Net				2,999	-	130	-	80,324
Minimum Required Load Reduction(s)							10%	**8,032**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	Derry Township, Westmorland County, PA		
PREPARED BY:	CDW	DATE:	5/18/2018
CHECKED BY:	DPS	DATE:	5/30/2018

Lower Saxman Run - Saxman Run (Impairments: Metals, Siltation, Suspended Solids, Nutrients)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	215.9	16.6%	23.06	4,980	2.28	492	1,839.00	397,132
Developed Pervious	314.6	24.2%	20.72	6,519	0.84	264	264.96	83,364
Undeveloped	769.5	59.2%	10.00	7,695	0.33	254	234.60	180,534
Total Gross	**1300.1**	100.0%		**19,194**		**1,011**		**661,030**
Load Reductions								
								-
Total Net				19,194	-	1,011	-	661,030
Minimum Required Load Reduction(s)					5%	**51**	10%	**66,103**

St Clair Street - Loyalhanna Creek (Impairments: Metals, Siltation, Suspended Solids)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	39.6	51.7%	23.06	914	2.28	90	1,839.00	72,899
Developed Pervious	21.9	28.6%	20.72	453	0.84	18	264.96	5,797
Undeveloped	15.1	19.7%	10.00	151	0.33	5	234.60	3,545
Total Gross	**76.6**	100.0%		**1,519**		**114**		**82,241**
Load Reductions								
								-
Total Net								82,241
Minimum Required Load Reduction(s)							10%	**8,224**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	Derry Township, Westmorland County, PA		
PREPARED BY:	CDW	DATE:	5/18/2018
CHECKED BY:	DPS	DATE:	5/30/2018

Sulphur Run - a Trib to Loyalhanna Creek (Impairments: Metals, Siltation, Suspended Solids)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	91.7	13.0%	23.06	2,115	2.28	209	1,839.00	168,649
Developed Pervious	211.7	29.9%	20.72	4,387	0.84	178	264.96	56,103
Undeveloped	404.7	57.2%	10.00	4,047	0.33	134	234.60	94,946
Total Gross	**708.2**	100.0%		**10,549**		**521**		**319,697**
Load Reductions								
								-
Total Net				10,549	-	521	-	319,697
Minimum Required Load Reduction(s)							10%	**31,970**

Upper Saxman Run - Saxman Run (Impairments: Metals, Siltation, Suspended Solids, Nutrients)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	29.4	14.4%	23.06	677	2.28	67	1,839.00	53,989
Developed Pervious	99.9	54.6%	20.72	2,069	0.84	84	264.96	26,459
Undeveloped	143.6	31.0%	10.00	1,436	0.33	47	234.60	33,694
Total Gross	**272.8**	100.0%		**4,182**		**198**		**114,141**
Load Reductions								
								-
Total Net				4,182		198		114,141
Minimum Required Load Reduction(s)					5%	**10**	10%	**11,414**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	Derry Township, Westmorland County, PA		
PREPARED BY:	CDW	DATE:	5/18/2018
CHECKED BY:	DPS	DATE:	5/30/2018

Hillside - Trout Run (Impairments: Organic Enrichment/Low D.O.)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	0.4	1.0%	23.06	8	2.28	1	1,839.00	675
Developed Pervious	7.3	20.0%	20.72	152	0.84	6	264.96	1,945
Undeveloped	29.0	79.0%	10.00	290	0.33	10	234.60	6,802
Total Gross	**36.7**	100.0%		**450**		**17**		**9,421**
Load Reductions								
								-
Total Net						17		9,421
Minimum Required Load Reduction(s)					5%	**1**	10%	**942**

New Derry East - UNT to McGee Run (Impairments: Siltation, Excessive Algal Growth)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	17.2	9.5%	23.06	398	2.28	39	1,839.00	31,714
Developed Pervious	16.4	9.0%	20.72	339	0.84	14	264.96	4,338
Undeveloped	148.3	81.5%	10.00	1,483	0.33	49	234.60	34,790
Total Gross	**181.9**	100.0%		**2,220**		**102**		**70,841**
Load Reductions								
								-
Total Net				2220		102		70,841
Minimum Required Load Reduction(s)							10%	**7,084**

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	Derry Township, Westmorland County, PA		
PREPARED BY:	CDW	DATE:	5/18/2018
CHECKED BY:	DPS	DATE:	5/30/2018

Ethel Springs Lake- UNT to McGee Run (Impairments: Siltation, Excessive Algal Growth)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	26.9	18.6%	23.06	621	2.28	61	1,839.00	49,492
Developed Pervious	43.7	51.4%	20.72	905	0.84	37	264.96	11,573
Undeveloped	93.3	30.0%	10.00	933	0.33	31	234.60	21,890
Total Gross	**163.9**	100.0%		**2,459**		**129**		**82,955**
Load Reductions								
								-
Total Net								82,955
Minimum Required Load Reduction(s)							10%	**8,296**

Malone Road- Union Run (Impairments: AMD- Suspended Solids, pH, Metals)
Net Existing Loads and Minimum Required Load Reductions

Type	Acres	Cover Percentage (%)	TN Loading Rates lbs./acre/yr.	Existing TN Load lbs./yr.	TP Loading Rates lbs./acre/yr.	Existing TP Load lbs./yr.	TSS Loading Rates lbs./acre/yr.	Existing TSS Load lbs./yr.
Developed Impervious	24.4	18.6%	23.06	562	2.28	56	1,839.00	44,780
Developed Pervious	35.3	51.4%	20.72	732	0.84	30	264.96	9,366
Undeveloped	76.3	30.0%	10.00	763	0.33	25	234.60	17,891
Total Gross	**136.0**	100.0%		**2,057**		**110**		**72,037**
Load Reductions								
								-
Total Net								72,037
Minimum Required Load Reduction(s)							10%	**7,204**

ATTACHMENT D – PROPOSED BMPS FOR POLLUTANT LOAD REDUCTIONS WITHIN EACH MS4 SEWERSHED STUDY AREA FOR DERRY TOWNSHIP

PROJECT NAME: MS4 Pollutant Reduction Plan - Proposed Stormwater BMP Load Reduction
LOCATION: Derry Township, Westmoreland County, PA
PREPARED BY: DPS DATE: 7/15/2018
CHECKED BY: DATE:

Derbytown/McFarland Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Bioretention – Raingarden (C/D soils w/ underdrain)	22.91	5.73	9.62	7.56	407	24	14,856	25%	45%	55%	102	11	8,171	-	-	-	BMP #1 - New Holiday Acres Bioretention Pond
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1]			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration	0				-	-	-	0.075	0.0680	44.8800	0	0	0	-	-	-	
Storm Sewer System Solids Removal		62.0	0	0 - inorganic	-	-	-	0.0027	0.0006	0.9967	0	0	0	-	-	-	
				0 - organic	-	-	-	0.0111	0.0012	0.9877	0	0	0	-	-	-	
Totals							-				102	11	8,171	0	0	8,032	Proposed Load Reduction meets or exceeds min. req'd

Lower Saxman Run Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Dry Extended Detention Basin	24.46	6.36	15.90	2.20	498	29	16,424	20%	20%	60%	100	6	9,855	-	-	-	BMP #2 - New Industrial Blvd Extended Detention Pond
Dry Extended Detention Basin	13.10	3.28	8.52	1.31	265	15	8,586	20%	20%	60%	53	3	5,152	-	-	-	BMP #3 - New Red Cut Lodge Extended Detention Pond
Dry Extended Detention Basin	21.69	6.94	5.64	9.11	368	24	16,396	20%	20%	60%	74	5	9,837	-	-	-	BMP #4 - New Spring Crest Extended Detention Ponds 1 and 2
Bioswale	13.83	4.84	8.30	0.69	290	18	11,263	70%	75%	80%	203	14	9,010	-	-	-	BMP #5 - Richmond Street Bioswale
Dry Extended Detention Basin	47.38	11.37	15.16	20.85	785	46	29,820	20%	20%	60%	157	9	17,892	-	-	-	BMP #6 - New Township Public Works Extended Detention Pond
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration	300				-	-	-	0.075	0.0680	44.8800	23	20	13,464	-	-	-	BMP #7 - Lower Saxman Run Proposed Stream Restoration
Storm Sewer System Solids Removal		62.0	34	738 - inorganic	-	-	-	0.0027	0.0006	0.9967	2	0	735	-	-	-	
				169 - organic	-	-	-	0.0111	0.0012	0.9877	2	0	164	-	-	-	
Totals							-				613	57	66,109	0	51	66,103	Proposed Load Reduction meets or exceeds min. req'd

PROJECT NAME: MS4 Pollutant Reduction Plan - Proposed Stormwater BMP Load Reduction
LOCATION: Derry Township, Westmoreland County, PA
PREPARED BY: DPS DATE: 7/15/2018
CHECKED BY: DATE:

St Clair Street Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Bioswale	12.32	3.94	7.39	0.99	254	16	9,440	70%	75%	80%	178	12	7,552	-	-	-	BMP #8 - New Walnut Street Bioswale
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	Inlets in Watershed (inlets/yr)*	Sediment Volume (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration	0				-	-	0.00	0.075	0.0680	44.8800	0	0	0	-	-	-	
Storm Sewer System Solids Removal		62.0	26	564 - inorganic	-	-	-	0.0027	0.0006	0.9967	2	0	562	-	-	-	
				129 - organic	-	-	-	0.0111	0.0012	0.9877	1	0	127	-	-	-	
Totals							-				181	12	8,242	0	0	8,224	Proposed Load Reduction meets or exceeds min. req'd

Sulphur Run Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Bioretention / Raingarden (A/B soils w/ underdrain)	78.95	18.95	31.58	28.42	1,375	79	49,881	70%	75%	80%	963	59	39,904	-	-	-	BMP #9 - New Meadow Drive Extended Detention Pond
														-	-	-	
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration	0				-	-	-	0.075	0.0680	44.8800	0	0	0	-	-	-	
Storm Sewer System Solids Removal		62.0	20	434 - inorganic	-	-	-	0.0027	0.0006	0.9967	1	0	433	-	-	-	
				99 - organic	-	-	-	0.0111	0.0012	0.9877	1	0	98	-	-	-	
Totals							-				965	60	40,435	0	0	31,970	Proposed Load Reduction meets or exceeds min. req'd

PROJECT NAME: MS4 Pollutant Reduction Plan - Proposed Stormwater BMP Load Reduction
LOCATION: Derry Township, Westmoreland County, PA
PREPARED BY: DPS DATE: 7/15/2018
CHECKED BY: DATE:

Upper Saxman Run Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Dry Extended Detention Basin	63.72	9.56	25.49	28.67	1,035	53	31,057	20%	20%	60%	207	11	18,634	-	-	-	BMP #10 - New North Valley Street Extended Detention Pond
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration	0				-	-	-	0.075	0.0680	44.8800	0	0	0	-	-	-	
Storm Sewer System Solids Removal		62.0	0	0 - inorganic	-	-	-	0.0027	0.0006	0.9967	0	0	0	-	-	-	
				0 - organic	-	-	-	0.0111	0.0012	0.9877	0	0	0	-	-	-	
Totals							-				207	11	18,634	0	10	11,414	Proposed Load Reduction meets or exceeds min. req'd

Hillside Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Vegetated Open Channels (C/D Soils)	8.59	1.29	3.01	4.30	135	7	4,174	10%	10%	50%	13	1	2,087	-	-	-	BMP #11 - New Vegetated Open Channel along Old Route 217
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration					-	-	-	0.075	0.0680	44.8800	0	0	-	-	-	-	
Storm Sewer System Solids Removal		62.0	0	0 - inorganic	-	-	-	0.0027	0.0006	0.9967	0	0	0	-	-	-	
				0 - organic	-	-	-	0.0111	0.0012	0.9877	0	0	0	-	-	-	
Totals							-				13	1	2,087	0	1	942	Proposed Load Reduction meets or exceeds min. req'd

PROJECT NAME: MS4 Pollutant Reduction Plan - Proposed Stormwater BMP Load Reduction
LOCATION: Derry Township, Westmoreland County, PA
PREPARED BY: DPS DATE: 7/15/2018
CHECKED BY: DATE:

New Derry East Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Bioswale	22.00	4.84	17.16	0.00	467	25	13,447	70%	75%	80%	327	19	10,758	-	-	-	BMP #12 - New Bioswale along Recreation Road
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration					-	-	-	0.075	0.0680	44.8800	0	0	-	-	-	-	
Storm Sewer System Solids Removal		62.0	0	0 - inorganic	-	-	-	0.0027	0.0006	0.9967	0	0	0	-	-	-	
				0 - organic	-	-	-	0.0111	0.0012	0.9877	0	0	0	-	-	-	
Totals							-				**327**	**19**	**10,758**	**0**	**0**	**7,084**	Proposed Load Reduction meets or exceeds min. req'd

Ethel Springs Lake Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Dry Extended Detention Basin	19.25	8.66	5.78	4.81	368	26	18,589	20%	20%	60%	74	5	11,154	-	-	-	BMP #13 - New Ethel Springs Lake Extended Detention Pond
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration					-	-	-	0.075	0.0680	44.8800	0	0	-	-	-	-	
Storm Sewer System Solids Removal		62.0	0	0 - inorganic	-	-	-	0.0027	0.0006	0.9967	0	0	0	-	-	-	
				0 - organic	-	-	-	0.0111	0.0012	0.9877	0	0	0	-	-	-	
Totals							18,589				**74**	**5**	**11,154**	**0**	**0**	**8,296**	Proposed Load Reduction meets or exceeds min. req'd

PROJECT NAME: MS4 Pollutant Reduction Plan - Proposed Stormwater BMP Load Reduction
LOCATION: Derry Township, Westmoreland County, PA
PREPARED BY: DPS DATE: 7/15/2018
CHECKED BY: DATE:

Malone Road Proposed Stormwater BMP Pollutant Load Reductions

Proposed Stormwater BMP Type[1]	Total Area Controlled by BMP[2] (acres)	Developed Impervious Area (acres)	Developed Pervious Area (acres)	Undeveloped Area (acres)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (%)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			Comment
					TN (lb/yr)	TP (lb/yr)	TSS (lb/yr)	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS	
Vegetated Open Channels (C/D Soils)	25.06	10.78	13.03	1.25	531	36	23,563	10%	10%	50%	53	4	11,782	-	-	-	BMP #14 - New Malone Road Vegetated Open Channel
														-	-	-	
	Restoration Length (LF)	Gross Material Load Rate (lb/yr/inlet)	No. Inlet Cleanings (inlets/yr)*	Total Solids Dry Weight[7] (lb)	Loads within BMP Area[3]			BMP Effectiveness Values[1] (lbs/ft/yr)			Proposed Load Reduction[4] (lb/yr)			Minimum Required Load Reduction[5] (lb/yr)			
Stream Restoration					-	-	-	0.075	0.0680	44.8800	0	0	-	-	-	-	
Storm Sewer System Solids Removal		62.00	0	0 - inorganic	-	-	-	0.0027	0.0006	0.9967	0	0	0	-	-	-	
				0 - organic	-	-	-	0.0111	0.0012	0.9877	0	0	0	-	-	-	
Totals							23,563				53	4	11,782	0	31	7,204	Proposed Load Reduction meets or exceeds min. req'd

PROJECT NAME: MS4 Pollutant Reduction Plan - Proposed Stormwater BMP Load Reduction
LOCATION: Derry Township, Westmoreland County, PA
PREPARED BY: DPS DATE: 7/15/2018
CHECKED BY: DATE:

POLLUTANT LOAD REDUCTION SUMMARY:

Total Linear Feet of Stream Restoration :	300
Total Number of Inlets to be Cleaned per Year :	80
Total Number of New Structural Stormwater BMPs :	13
Total Number of Existing BMPs to be Retrofitted :	0

	TN	TP	TSS	% of Total TSS Reduction
Total Proposed Load Reductions due to BMP retrofits :	-	-	-	0.0
Total Proposed Load Reductions due to new BMPs :	2,503	157	161,787	91.2
Total Proposed Load Reductions due to Stream Restoration :	23	20	13,464	7.6
Total Proposed Load Reductions due to storm sewer system solids removal :	9	2	2,120	1.2
Total Proposed Load Reductions :	2,535	179	177,371	
Total Min. Required Load Reductions :	-	61	149,269	

Total Proposed Load Reductions Exceed Total Minimum Required Load Reductions for all Pollutants

Pollutant Loading Rates (lb/acre/year)			
Land Cover	TN	TP	TSS
Developed Impervious	23.06	2.28	1839
Developed Pervious	20.72	0.84	264.96
Undeveloped	10	0.33	234.6

FOOTNOTES:

1. Listed from DEP General Permit Document 3800-PM-BCW0100m BMP Effectiveness Values
2. Delineated from DCNR LiDAR mapping by user within AutoCAD
3. Calculated with user drainage areas and the Penn State University PAMAP 2005 Land Use / Land Cover GIS data
4. Load Reduction = BMP Effectiveness Values x Load within BMP Area
5. TP min. required load reduction = 5% x Total net TP loads within planning area
   TSS min. required load reduction = 10% x Total net TSS loads within planning area
6. 2' x 4' x 0.083' = 0.664 CF/yr x 62.4 lb/cf x 2.5 x 0.6 = 62.0 lb /yr (where 2'x4'x0.083' is the volume of an inlet box, 62.4 CF/yr is the unit weight of water, 2.5 is the specific gravity of sediment particles, 0.6 is the ratio of solid volume to total bulk volume of accumulated sediment
7. 50% of total solids estimated to be inorganic, 40% of total solids estimated to be organic with remaining 10% to be debris. Dry weight of inorganic is 70% of total wet inorganic weight; dry weight of organic is 20% of total wet organic weight as per DEP PRP Instructions:
   Total Inorganic Dry Solid Weight = (Total Solids Load per inlet) x (No. of Inlets) x (0.50) x (0.70)
   Total Organic Dry Solid Weight = (Total Solids Load per inlet) x (No. of Inlets) x (0.40) x (0.20)

PROJECT NAME: MS4 Pollutant Reduction Plan

LOCATION: Derry Township, Westmoreland County, PA

PREPARED BY: Gibson-Thomas Engineering Co., Inc. - DPS DATE: 8/13/2018

CHECKED BY: DATE:

Dry Extended Detention Pond and Bioretention Pond Operation and Maintenance Schedule		
Activity	**Frequency**	**Description**
Dam Embankment	2 x per year or more often	Inspect dam embankment for signs of differential settlement, slippage, sloughing, animal burrows, excessive overgrowth and woody vegetation
		Maintain height of vegetation at a level suitable to allow for access and inspection
		Revegetate bare areas, fill in animal burrows, backfill and stabilize eroded areas
Structural Inspection	2 x per year or more often	Examine outlet structure and pretreatment area for blockage and to assess infiltration
		Check for clogging and for piping, conduct a wet weather assessment within 48- 72 hours of a 1"- 2" rain event – water should be mostly or fully drawn down
		Conversely, also check if bed drains too fast – indicative of structural failure
		Check for debris obstructions in any openings of the principal spillway riser. Remove and properly dispose any obstructions.
		Look for broken underdrains or cleanouts, sinkholes in bed indicate short circuiting
		(Vegetated BMP) Repair erosion, reseed and/or re-mulch any areas where erosion is present (determine root cause and address)
Outfalls	1 x per year or more often	Inspect outfalls into pond as well s outfalls from the pond for signs of scour and erosion that may require additional rock or other energy dissipation measures
		Check endwalls for undermining, differential settlement, separation at joints or other signs of structural displacment or distress
		Clear outfall area of any significant accumulation of sediments, debris and excessive overgrowth
Fertilizers and other Chemicals for (Vegetated BMPs)	N/A	Use minimal or no fertilizers, including compost, and use only the minimum necessary amount of organic fertilizer to establish new plantings
		Properly store pesticides, herbicides, and inorganic fertilizer
		Mix in organic fertilizer/compost on slopes (banks) to address problem areas where bank vegetation is not readily establishing
Clean Up	1 x per year or as required	Remove trash and debris
Sediment	1 x per year	Look for sediment in bed
		Check for sources of sediment in watershed and on slopes of BMP
		Check drain, inlet for inlet and remove sediment that is found in the drain or inlet.
Plant Care and Maintenance (Vegetated BMP)	1-2 x per year	Water and care for plants intensively for the first year after installation
		Weeding and pruning, and reseeding of any bare areas that should be vegetated;
		Mowing or other care specified in design – mowing or other care should not create erosion or other situations that would compromise BMP
		Ensure healthy, dense vegetative cover, particularly on slopes (banks) when/if vegetation is primary source of bank stability

PROJECT NAME:	MS4 Pollutant Reduction Plan		
LOCATION:	Derry Township, Westmoreland County, PA		
PREPARED BY:	Gibson-Thomas Engineering Co., Inc. - DPS	DATE:	8/13/2018
CHECKED BY:		DATE:	

Stream Restoration Operation and Maintenance Schedule		
Activity	**Frequency**	**Description**
Stream Banks	2 x per year or more often	Inspect embankment for signs of differential settlement, slippage, sloughing, animal burrows and insufficient vegetative growth
		Maintain height of vegetation at a level suitable to allow for access and inspection
		Maintain clear access to site to allow for inspections
Stream Channel	2 x per year or more often	Examine stream channel in vicinity of bank stabilization for indications of debris and sediment accumulation, undercutting of stabilization structures, scour holes and other signs of erosion
		Remove any excessive debris that is obstructing the channel
		For sediment removal, consult with DEP or Conservation District office regarding permit requirements before attempting any sediment removal

Vegetated Swales and Bioswales Operation and Maintenance Schedule		
Activity	**Frequency**	**Description**
Channel	1x per year	Inpsect annually and after runoff events.
		Maintain height of vegetation at a level suitable to allow for access and inspection
		Inspect for signs of erosion of slopes and the formation of gullies, pools, standing water, and litter
		Maintain clear access to site to allow for inspections

Storm Sewer Solids Removal Operation and Maintenance Schedule		
Activity	**Frequency**	**Description**
Inlet	1x per year	Inpsect annually and after runoff events.
		Maintain height of vegetation at a level suitable to allow for access and inspection
		Inspect for signs of erosion of slopes and the formation of gullies, pools, standing water, and litter
		Maintain clear access to site to allow for inspections

PROJECT NAME: MS4 Pollutant Reduction Plan

LOCATION: Derry Township, Westmoreland County, PA

PREPARED BY: Gibson-Thomas Engineering Co., Inc. - DPS DATE: 8/13/2018

CHECKED BY: DATE:

Storm Inlet Cleaning Log

Date	Basin ID No.	Location (Street / Block)	Inlet Box Dimensions (Width x Length)	Total Depth of Sediment Collected (in.)	Weight of Sediment Collected [1] (lbs.)
TOTAL					**0 lbs.**

[1] Weight of Sediment Collected based on estimated bulk unit weight of sediment of 93 lb per cubic foot = 93.0 lb/CF

PROJECT NAME: MS4 Pollutant Reduction Plan

LOCATION: Derry Township, Westmoreland County, PA

PREPARED BY: DPS DATE: 7/15/2018

CHECKED BY: DATE:

Engineer's Opinion of Probable Cost of Construction for Structural BMPs

Item	Description	Quantity		Unit Price		Total
Stormwater Extended Detention Ponds (Retrofits to Existing Facilities)						
1.	Erosion & Sedimentation Control Measures	3	ea	$2,000.00	/ea	$6,000.00
2.	Modifications to Principal Spillway Riser	3	ea	$1,000.00	/ea	$3,000.00
3.	Forebay	1	ea	$5,000.00	/ea	$5,000.00
4.	Energy Dissipators	1	ea	$3,000.00	/ea	$3,000.00
5.	Plantings and Landscaping	3	ea	$2,000.00	/ea	$6,000.00
New Extended Detention Ponds						
6.	Erosion & Sedimentation Control Measures	5	ea	$2,000.00	/ea	$10,000.00
7.	Principal Spillway Riser and Outfall	5	ea	$8,000.00	/ea	$40,000.00
8.	Excavation and Grading	5	ea	$10,000.00	/ea	$50,000.00
9.	Stone Bedding	5	ea	$3,000.00	/ea	$15,000.00
10.	Underdrain	5	ea	$2,000.00	/ea	$10,000.00
11.	Plantings and Landscaping	5	ea	$8,000.00	/ea	$40,000.00
12.	Energy Dissipators	5	ea	$5,000.00	/ea	$25,000.00
New Bioretention Pond						
6.	Erosion & Sedimentation Control Measures	1	ea	$2,000.00	/ea	$2,000.00
7.	Principal Spillway Riser and Outfall	1	ea	$8,000.00	/ea	$8,000.00
8.	Excavation and Grading	1	ea	$10,000.00	/ea	$10,000.00
9.	Stone Bedding	1	ea	$3,000.00	/ea	$3,000.00
10.	Soil Media	1	ea	$5,000.00	/ea	$5,000.00
11.	Plantings and Landscaping	1	ea	$8,000.00	/ea	$8,000.00
12.	Energy Dissipators	1	ea	$5,000.00	/ea	$5,000.00
Stream Restoration						
13.	Erosion & Sedimentation Control Measures	1	ea	$5,000.00	/ea	$5,000.00
14.	Bank Stabilization	300	l.f.	$100.00	/l.f.	$30,000.00
Vegetated Channel Construction						
15.	Erosion & Sedimentation Control Measures (Compost Filter Sock)	200	l.f.	$5.00	/l.f.	$1,000.00
16.	Excavation and Grading	120	c.y.	$15.00	c.y.	$1,800.00
17.	Seeding	4	lb	$15.00	/lb	$67.26
Bioswale						
17.	Erosion & Sedimentation Control Measures (Compost Filter Sock)	800	l.f.	$5.00	/l.f.	$4,000.00
18.	Excavation and Grading	1,070	c.y.	$12.00	c.y.	$12,840.00
19.	Underdrain	800	l.f.	$9.00	/l.f.	$7,200.00
20.	Soils	120	c.y.	$20.00	/c.y.	$2,400.00
21.	Seeding - Formula L	20	lb	$15.00	/lb	$300.00
Inlet Cleaning						
22.	Inlet Cleaning	80	each	$30.00	/each	$2,400.00
				TOTAL ESTIMATED CONSTRUCTION COST:		**$321,007.26**

Right-of-Way Acquisition (10%):	$32,100.73
Engineering & Inspection (15%):	$48,151.09
Contingencies (15%):	$48,151.09
TOTAL ESTIMATED IMPLEMENTATION COST:	**$449,410.17**
Annual Cost over 5 Years (@ 5% interest per year):	**$ 103,803.00**

ATTACHMENT E – PUBLIC PARTICIPATION AND INVOLVEMENT PLAN

The draft version of this Pollutant Prevention Plan (PRP) was made available for public review and comment beginning June 25, 2018 with public comments being accepted through July 25, 2018. The public advertisement of this plan was placed in the Latrobe Bulletin on June 21, 2018 and a notice is to be posted on the Township's website at http://www.derrytownship.com/news.php announcing the availability of the PRP for public review and comment on its website. A hard copy of the report was also kept at the Township office for public review.

NOTICE OF TOWNSHIP OF DERRY MS4 POLLUTANT REDUCTION PLAN

The Township Supervisors of Derry Township will accept comments from the public beginning on June 25, 2018 and extending through July 25, 2018 associated with the Township's Pollutant Reduction Plan as required by the Pennsylvania Department of Environmental Protection as a component of the Township's PAG-13 National Pollutant Discharge Elimination System General Permit (NPDES Permit No. PAI136136) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The Pollutant Reduction Plan outlines in general terms the Township's 5-year plan between 2018 and 2023 to reduce sediment loadings and nutrient loadings from its MS4 stormwater discharges into the Loyalhanna Creek and its tributaries, and the Conemaugh River and its tributaries. The Pollutant Reduction Plan will be available for public review Monday through Friday between the hours of 8:00 AM to 4:00 PM at the Derry Township Municipal Office located at 5321 Route 982 Derry, PA 15627. The Pollutant Reduction Plan is also available for public review on the Township's website http://www.derrytownship.com. Comments may be provided in writing and delivered in person or via e-mail or regular mail and addressed to the Derry Township Supervisors. The Township will accept comments from any interested member of the public at the regularly scheduled meeting of the Derry Township Supervisors on July 3, 2018 at 7:00 PM.

Derry Township Supervisors

One written public comment was received by the Township during the 30-day review period from June 25 through July 25, 2018. The resident of 113 Maple Drive sent a letter dated July 24, 2018 to the Township Supervisors (see attached) wherein the author provides comments and concerns regarding the "proposed Derry Township Municipal Separate Storm Sewer System (MS4) prepared by Gibson-Thomas Engineering Latrobe, PA, latest revision May 2018." The author continues to provide the following comments regarding this plan:

> The current MS4 plan and map does not include any proposed engineering or updates to alleviate the current system that has been over burdened for many years, causing several residents [of Maple Drive (Clover Hill)] with flooding issues in our homes and standing water on our property.
>
> As a fact I know at least 4 houses on Penn Ave that are tied into and discharging into Maple Drive culverts [sic]; their direct basement floor drains, their basement sump pumps.

This is why the Maple Drive system which collects water from Rt 982, Penn Ave., Mania St., St Clair and Maple Drive needs to be correctly engineered taking all into consideration instead of doing a "patch job" let alone any current / future additional culverts that will / would be installed to a undersized / non-engineered system.

The MS4 plan does not include any water discharge considerations or buffer zone i.e. bioswale, detention area for affluent [sic] flowing into Sulfur Run and then to Loyalhanna Creek, one of the main mandates of the MS4 [permit program].

Response: The purpose of the Derry Township MS4 Pollutant Reduction Plan as mandated by the Pennsylvania Department of Environmental Protection (PA DEP) is to reduce sediment and nutrient pollutant loads into the Township's MS4 and ultimately the receiving Waters of the Commonwealth of Pennsylvania. Addressing flooding concerns related to stormwater, though quite possibly a side benefit of the implementation of this plan, is not the primary objective of this plan. As you are probably well aware, the Sulphur Run watershed has numerous flooding and stormwater runoff problems that affect residents and businesses of both the Township and the City of Latrobe. The Township and Gibson-Thomas Engineering are working to investigate solutions to flooding issues in your neighborhood that will not cause negative impacts to downstream properties. Therefore, any storm sewer conveyance improvements on and around Maple Drive would need to be coupled with the use of stormwater management facilities (bioswales, detention ponds, etc.) in the vicinity so as not to potentially aggravate flooding problems already being experienced further downstream in the Sulphur Run watershed.

The Township Supervisors will coordinate with the Derry Township Municipal Authority to investigate the homes along Penn Avenue to ensure that their interior drains are properly connected to the sanitary sewer system.

PROOF OF PUBLICATION

State of Pennsylvania }
County of Westmoreland } SS.

PUBLIC MEETINGS

NOTICE OF TOWNSHIP OF DERRY MS4 POLLUTANT REDUCTION PLAN

The Township Supervisors of Derry Township will accept comments from the public beginning on June 25, 2018 and extending through July 25, 2018 associated with the Township's Pollutant Reduction Plan as required by the Pennsylvania Department of Enviromental Protection as a component of the Township's PAG-13 National Pollutant Discharge Elimination System General Permit (NPDES Permit No. PAI136136) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The Pollutant Reduction Plan outlines in general terms the Township's 5-year plan between 2018 and 2023 to reduce sediment loadings and nutrient loadings from its MS4 stormwater discharges into the Loyalhanna Creek and its tributaries, and the Conemaugh River and its tributaries. The Pollutant Reduction Plan will be available for public review Monday through Friday between the hours of 7:30 AM to 3:30 PM at the Derry Township Municipal Office located at 5321 Route 982 Derry, PA 15627. The Pollutant Reduction Plan is also available for public review on the Township's website http://www.derrytownship.com Comments may be provided in writing and delivered in person or via email or regular mail and addressed to the Derry Township Supervisors. The Township will accept comments from any interested member of the public at the regularly scheduled meeting of the Derry Township Supervisors on July 3, 2018 at 7:00 PM.

Derry Township Supervisors

(6/21/18) 250

Personally appeared before me a Notary Public in and for said state and county, the undersigned, who being duly sworn according to law, deposes and says, for the publisher, that the LATROBE BULLETIN is a newspaper of general circulation, established on the 19th day of December 1902, and published daily in the City of Latrobe, County of Westmoreland and State of Pennsylvania, and that the advertisement, of which a copy is hereto attached, was published in the regular edition and issues on the following date

June 21, 2018

and is in all respects as ordered and that neither the affiant nor publisher is interested in the subject matter of the notice and that all of the allegations of the statement as to time, place and character of publication are true.

Patricia A Shrubnick
Business Manager

Subscribed and sworn to before me this

22 day of June A.D. 2018

Notary Public

Commonwealth of Pennsylvania - Notary Seal
Jamie L. Knechtel, Notary Public
Westmoreland County
My commission expires December 24, 2021
Commission number 1086979
Member, Pennsylvania Association of Notaries

To: Derry Township Supervisors

Date: July 24, 2018

David Slifka (Vice-Chairman)
Vince DeCario (Chairman)
Jim Prohaska (Supervisor)

From: Mark & Lisa Wolford
113 Maple Drive
Latrobe, PA 15650
(Derry Township)

Mr. Slifka,

The following comments and concerns address the proposed Derry Township Municipal Separate Storm Sewer System (MS4) prepared by Gibson-Thomas Engineering Latrobe, PA., latest revision May 2018.

The MS4 mandate will be the platform I'm using to make aware and have an adequate up to date storm system properly designed and engineered for the residents of Maple Drive (Clover Hill) The current MS4 plan and map does not include any proposed engineering or updates to alleviate the current system that has been over burdened for many years, causing several residents with flooding issues in our homes and standing water on our property.

I raised concern again at the July 3, 2018 meeting that the two main culverts on Maple Drive have deteriorated and are now collapsing. Work has been scheduled not only to replace the culverts but to also increase the pipe size between the two. Although increasing the pipe size between the two culverts may help slightly with flow between the culverts, the culverts can't be any smaller than what they are now (that overflows) The current culvert sizes are 40"x45"x18" (18.75 cuft) and 48"x34"x27" (25.5 cuft) again having smaller culverts replaced regardless of the connecting pipe between will still create flooding issues. The pipe leading from the West side culvert that empties into the woods adjacent to Lloyd Excavating needs to be increased also along with a Detention area or BioSwale.

As a fact I know at least 4 houses on Penn Ave. that are tied into and discharging into Maple Drive culverts; their direct basement floor drains, their basement sump pumps.

This is why the Maple Drive system which collects water from RT. 982, Penn Ave., Mania, St. Clair and Maple Drive needs to be correctly engineered taking all into consideration instead of doing a "patch job" let alone any current / future additional culverts that will / would be installed to a undersized / non-engineered system.

The MS4 plan does not include any water discharge consideration or buffer zone i.e. Bioswale, Detention area for the affluent flowing into Sulfur Run and then to Loyalhanna Creek, one of the main mandates of the MS4. A properly engineered sized system with buffer areas installed will finally elevate the flooding not only upstream (Maple Drive) but also behind St. Mary's Ukrainian Catholic Church (Wood St.) and eventually through the City of Latrobe.

Over the past 20 years regardless of rain event i.e. a short duration heavy rain or a 2-3 day constant rain, the amount of water that's directed/flowing to the two main culverts is too much to handle. I'm stating again, the water runoff is coming from Rt. 982, Penn, Mania, St. Clair and finally down Maple Drive. For the past 15 to 16 years I've addressed this over burden flooding issue to the Township Supervisors and with you Dave by attending monthly meetings, phone calls and discussions at my house with no results. In return these are some of your responses, in no particular order:

- I can't do anything, there's no place to drain or take the water, if I do it'll flood behind the church and flood Latrobe.

- Your neighbors told me your property always floods long before you bought it
- The pipe Gene Matteo replaced is too small and wasn't installed correctly (Gene replaced a township owned broken ceramic insulator pipe with a new 15" corrugated black plastic pipe running thru my property. The ceramic insulator pipe isn't designed for water, that pipe connected a culvert on Penn directly to Maple Drives culvert)
- What changed in your area to have so much water?
- There's too many hard surfaces i.e. driveways and gutters adding more water
- My hands are tied, I need approval from "the" other Supervisor to authorize the work
- We can't drain anymore water into the mines, they're full. (You had a drilling rig on Mania drilling down vertically to open up at least one of the two holes used to drain stormwater)
- It could cost up to 1M dollars to fix this problem (you said this arbitrary number when you and a Gibson-Thomas engineer came to my house 2 days after a flooding rain event and my sump pump was still pumping water. That's what you told me and the engineer said we can't do anything)
- I can't do anything now, but the whole township needs to comply with a new regulation for stormwater and sewage discharge that all Boros, Townships and Municipalities have to do.
- There was never a pipe there, back in the 60's it was an open ditch (referring to the pipe running from the opposite (West) culvert draining into the woods adjacent to Lloyd Excavating)

Why are you even saying that? You're bringing something up from 50 years ago, it's 2018 the 21st century! Remember when you asked me what changed in my area? I'll tell you, a lot!! and nothing changed for upgrades to the infrastructure needed for the development of the area. My property isn't the neighborhood dumping ground and hasn't been since 1999! but it still continues to this day because of the lack of proper engineered storm system / drains.

To substantiate please refer to the Supervisors Minutes from June 3, 2014 (attached) read your response. All I got from you was storm water management and to contact the Westmoreland Conservation District. I did, and spoke with Jim Pillsbury, P.E. Hydraulic Engineer. He asked for my address and when he heard Maple Drive he said he was very familiar with the water issues there in Clover Hill area and on that street. We arranged a meeting at my house he made comment that my property and culverts are the lowest point and with the two culverts being the only drains in the area, he's not surprised by the flooding issues. He made suggestions such as rain gardens and replace hard surface areas to prevent water runoff, etc....PLEASE! I told Jim and I told you many times, I can handle my water, it's the whole neighborhood's water and runoff I can't handle. My sump pum runs for days after a rain event. Jim's very knowledgable and one take away comment by him was Derry Township needs to do something in this area.

Enough of the back history, We all remember events / things differently and if you or anyone else needs more proof, we have many dated photos and videos from different rain events through the years (even from last week) that shows the overflow flood issues. LISTEN TO THE PEOPLE ON MAPLE DRIVE AND NOT TO OTHER PEOPLE WHO DON'T. THIS EFFECTS US, NOT THEM!

In conclusion, the residents of Maple Drive (Clover Hill) deserve and needs a properly engineered drainage system for its current and future state.

Sincerely,

Mark & Lisa Wolford
113 Maple Drive
Latrobe, PA 15650
724-532-2733