

ELIZABETH TOWNSHIP

Pollutant Reduction Plan - Wylie Run and Fallen Timber Run

Table of Contents

INTRODUCTION

Section A - Public Participation

Section B - Map

Section C - Pollutants of Concern

Section D - Existing Loading for Pollutants of Concern

Section E - Select BMP's to Achieve the Minimum Required Pollutant Reduction

Section F - Identify Funding Mechanism

Section G - Identify Responsible Parties for Operation and Maintenance of BMP's

- Appendix A Public Advertisement
- Appendix B Public Advertisement Comments
- Appendix C Public Comments Consolidation
- Appendix D MS4 Map

ELIZABETH TOWNSHIP

**Pollutant Reduction Plan - Wylie and Fallen
Timber Run**

October 2018

KLH

**ENGINEERS, INC
5173 CAMPBELLS RUN ROAD
PITTSBURGH, PA 15205-9733**

ELIZABETH TOWNSHIP

Pollutant Reduction Plan – Wylie Run and Fallen Timber Run

Table of Contents

INTRODUCTION 1

Section A – Public Participation 1

Section B – Map..... 1

Section C – Pollutants of Concern.....2

Section D – Existing Loading for Pollutants of Concern.....2

Section E – Select BMP's to Achieve the Minimum Required Reductions in Pollutant Loading ...4

Section F – Identify Funding Mechanism.....9

Section G – Identify Responsible Parties for Operation and Maintenance of BMP's.....9

Appendix A Public Advertisement

Appendix B Public Advertisement Comments

Appendix C Public Comments Consideration

Appendix D MS4 Map

ELIZABETH TOWNSHIP

Pollutant Reduction Plan - Wylie Run and Fallen Timber Run

Introduction

Elizabeth Township has developed a Pollution Reduction Plan (PRP) for its Municipal Separate Storm Sewer System (MS4) in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Stormwater Discharges From Small Municipal Separate Storm Sewer Systems Pollution Reduction Plan Instructions as required by the NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4). This PRP address requirements for sediment and Phosphorus reduction for Wylie Run and Fallen Timber Run.

Section A – Public Participation

- Elizabeth Township shall make a complete copy of the PRP available for public review
- Elizabeth Township 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 Elizabeth Township 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 the DEP. Include a copy of the public notice with the PRP.
- Elizabeth Township shall accept written comments for a minimum of 30 days from the date of public notice. Include a copy of all written comments received from the public with the PRP.
- Elizabeth Township 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.
- Elizabeth Township shall consider and make a record of the consideration of each timely comment received from the public during
- Elizabeth Township 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. Include a copy of the Township's record of consideration of all timely comments received in the public comment period with the PRP.

This Pollution Reduction Plan is available for review by the public for 45 days to start on October 26th, 2018.

Section B – Map

The full MS4 Outfall map is attached to this plan in Appendix D.

Section C – Pollutants of Concern

According to the MS4 Requirements table, Elizabeth Township contributes to five Impaired Waters, the Monongahela River, Wylie Run, Fallen Timber Run, Gillespie Run, and Unnamed tributaries to the Youghiogheny River. The Monongahela River is impaired for PCBs (Appendix C). Wylie Run is impaired for Metals (Appendix A), Organic Enrichment/Low D.O, Siltation. (Appendix E). Fallen Timber Run is impaired for Metals (Appendix A), Organic Enrichment/Low D.O, Siltation. (Appendix E). Gillespie Run is impaired for Metals (Appendix A). Unnamed Tributaries to the Youghiogheny River are impaired for Metals (Appendix A). For each impaired stream to which the Township discharges that has Appendix D or Appendix E requirements, a Pollutant Reduction plan is required. This plan serves to address Appendix E requirements for Wylie Run and Fallen Timber Run.

The Township is required to reduce their pollutant loading by 10% for sediment and 5% for Phosphorous. It is assumed that a reduction in sediment will also affect a reduction in Phosphorous.

Section D Existing Loading for Pollutants of Concern

Elizabeth Township in Allegheny County, PA has a total of 14,841 acres. Within Elizabeth Township there are two Urbanized areas, the Pittsburgh urbanized area within the Township is 5,612 acres and the Monessen-California urbanized area within the Township is 168 acres.

Out of this area, the Planning area was determined as areas within the Township where runoff is generated that travels through an urbanized area to Wylie Run or Fallen Timber Run through an outfall.

The watersheds were determined from contours and then divided into Urbanized Area and Non-urbanized

Area. A 50 foot buffer was used to parse out state road areas. See Appendix D for a map of the planning area. Using the Statewide Land Cover estimates table, the following areas were calculated:

ELIZABETH TOWNSHIP	% Impervious	% Pervious
Urbanized Area	17%	83%
Non-urbanized Area	9%	91%

ELIZABETH TOWNSHIP	UA	Non-UA
Wylie Run	1,190.3	41.8
Fallen Timber Run	158.5	0
Total	1,348.8	41.8

ELIZABETH TOWNSHIP	Impervious	Pervious
Urbanized Area	229.29 ac	1,119.51 ac
Non-urbanized Area	3.76 ac	38.04 ac

Note that this area includes both Wylie Run and Fallen Timber Run tributary areas within the Township where stormwater from the Township is discharged to either stream. Wylie Run and Fallen Timber Run are impaired for Organic Enrichment/Low D.O. and Siltation. The MS4 Requirements table specifies that a PRP for impaired waters (Appendix E) must be developed.

The loading rates according to Attachment B for Allegheny County are as follows:

Category	Sediment Loading Rate (lbs/acre/yr)	TP Loading Rate (lbs/acre/yr)
Impervious developed	1,839	2.28
Pervious developed	264.96	0.84
Undeveloped	234.6	0.33

The calculation of pollutant loading for Elizabeth Township is then as follows:

Sediment:

$$(229.29 \text{ acres} \times 1,839 \text{ lbs/acre/yr}) + (1119.51 \text{ acres} \times 264.96 \text{ lbs/acre/yr}) + (41.80 \text{ acres} \times 234.6 \text{ lbs/acre/yr})$$
$$= 728,111 \text{ lbs/year Sed.}$$

Total Phosphorus:

$$(229.29 \text{ acres} \times 2.28 \text{ lbs/acre/yr}) + (1119.51 \text{ acres} \times 0.84 \text{ lbs/acre/yr}) + (41.80 \text{ acres} \times 0.33 \text{ lbs/acre/yr})$$
$$= 1,477 \text{ lbs/year TP}$$

The total amount of pollutants is 728,111 lbs of sediment and 1,477 lbs of Phosphorous. Therefore the 10% reduction in sediment required is 72,811 lbs. The reduction in phosphorous required is 73.85 lbs and is assumed to be accounted for in the removal of sediment.

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

Practices that capture and temporarily store runoff and pass it through a filter bed of either sand or an organic media. There are various sand filter designs, such as above ground, below ground, perimeter, etc. An organic media filter uses another medium besides sand to enhance pollutant removal for many compounds due to the increased cation exchange capacity achieved by increasing the organic matter. These systems require yearly inspection and maintenance to receive pollutant reduction credit.

Storm Sewer System Solids Removal

This BMP involves the collection or capture and proper disposal of solid material within the storm system to prevent discharge to surface waters. Examples include catch basins, stormwater inlet filter bags, end of pipe or outlet solids removal systems and related practices. Credit is authorized for this BMP only when

proper maintenance practices are observed (i.e., inspection and removal of solids as recommended by the system manufacturer or other available guidelines). The entity using this BMP for pollutant removal credits must demonstrate that they have developed and are implementing a standard operating procedure for tracking the material removed from the sewer system. Potential for backups onto roadways or other areas that can produce safety hazards should be considered when locating this BMP.

Inlet filter bags will be installed in forty (40) catch basins within the planning area to capture sediment before it can enter the storm sewers. These areas include urban areas close to the river as well as township roads located within the planning area. The Township will follow manufacture guidelines for removing built up sediment and proper disposal. It's assumed that the average drainage for each catch basin is approximately 0.5 acres. Therefore the total area for this collection of BMPs is 19 acres.

The calculation of solids removal must consider the composition of the solids removed. For this calculation, 50% is considered inorganic, 40% is considered organic, and 10% is refuse. Standard effectiveness values are then used to calculate the amount of Total Nitrogen and Total Phosphorus that needs subtracted from the dry weight of the solids.

Initial sediment load:

$$40 \text{ catch basins} \times 0.5 \text{ acres} \times 1,839 \text{ lbs/ac/yr} \times 80\% \text{ efficiency} = 29,424 \text{ lbs/yr}$$

Separate refuse, inorganic and organic:

$$29,424 \text{ lbs/yr} \times 10\% = 2,942.4 \text{ lbs/yr refuse}$$

$$29,424 \text{ lbs/yr} \times 50\% = 14,712 \text{ lbs/yr dry inorganic}$$

$$29,424 \text{ lbs/yr} \times 40\% = 11,769.6 \text{ lbs/yr dry organic}$$

Using effectiveness values from the BMP Effectiveness Table:

$$14,712 \text{ lbs/yr} \times 0.0027 \text{ TN for sediment} = 39.72 \text{ lbs/yr TN}$$

$$11,769.6 \text{ lbs/yr} \times 0.0111 \text{ TN for organic matter} = 130.64 \text{ lbs/yr TN}$$

$$14,712 \text{ lbs/yr} \times 0.0006 \text{ TP for sediment} = 8.83 \text{ lbs/yr TP}$$

$$11,769.6 \text{ lbs/yr} \times 0.0012 \text{ TP for organic matter} = 14.12 \text{ lbs/yr TP}$$

Total sediment removed excluding TN and TP:

29,424 lbs/yr – 2,942.4 lbs/yr refuse – 39.72 lbs/yr TN – 130.64 lbs/yr TN – 8.83 lbs/yr TP –
14.12 lbs/yr TP
= 26,288.28 lbs/year of sediment removed.

Bioretention (C/D soil with underdrain) – Sediment removal efficiency of 55%

Stoney Brook Park

The area of Cowan Drive has a small park located at a lower elevation. This area can be used to install a bioretention area. Soils hydrologic classification here is C/D, therefore the removal efficiency of a bioretention area is 55%. The total watershed area that is tributary to the park is approximately 45.45 acres. Using the Land Cover type estimates, the sediment load reduction can be calculated:

45.45 acres

(45.45 acres of urbanized area tributary to Wylie Run) * 17% = 7.73 acres impervious

(45.45 acres of urbanized area tributary to Wylie Run) * 83% = 37.72 acres pervious

(7.73 acres * 1,839 lbs/ac/year + 37.72 ac * 264 lbs/ac/year) * 55% efficiency = 13,312 lbs /yr sediment

Bioretention (C/D soil with underdrain) – Sediment removal efficiency of 55%

Glenwood Drive

The Township owns property near Glenwood Drive that collects much of the runoff tributary to Fallen Timber Run. This area can be used to install a bioretention area. Soils hydrologic classification here is C/D, therefore the removal efficiency of a bioretention area is 55%. The total watershed area that is tributary to the park is approximately 34.65 acres. Using the Land Cover type estimates, the sediment load reduction can be calculated:

34.65 acres

(34.65 acres of urbanized area tributary to Fallen Timber Run) * 17% = 5.89 acres impervious

(34.65 acres of urbanized area tributary to Fallen Timber Run) * 83% = 28.76 acres pervious

$(5.89 \text{ acres} * 1,839 \text{ lbs/ac/year} + 28.76 \text{ ac} * 264 \text{ lbs/ac/year}) * 55\% \text{ efficiency} = 10,149 \text{ lbs /yr sediment}$

Bioretention (C/D soil with underdrain) – Sediment removal efficiency of 55%

Blaine Hill

At the intersection of Elizabeth Avenue and Kendal Way, there is Right-of-Way and property owned by Blaine Hill Volunteer Fire Company. This area is a good site to capture runoff from the local urbanized area and treat it before it enters a stream tributary to Wylie Run. This area can be used to install a bioretention area. Soils hydrologic classification here is C/D, therefore the removal efficiency of a bioretention area is 55%. The total watershed area that is tributary to the park is approximately 38.11 acres. Using the Land Cover type estimates, the sediment load reduction can be calculated:

34.65 acres

$(38.11 \text{ acres of urbanized area tributary to Wylie Run}) * 17\% = 6.48 \text{ acres impervious}$

$(38.11 \text{ acres of urbanized area tributary to Wylie Run}) * 83\% = 31.63 \text{ acres pervious}$

$(6.48 \text{ acres} * 1,839 \text{ lbs/ac/year} + 31.63 \text{ ac} * 264 \text{ lbs/ac/year}) * 55\% \text{ efficiency} = 11,162 \text{ lbs /yr sediment}$

Bioretention (A/B soil with underdrain) – Sediment removal efficiency of 80%

Ross Street

At the intersection of Ross Street and Scott Street is Right-of-Way and private property that would be a good area to collect runoff from Ross Street and the surrounding hillside for treatment before being discharged to Wylie Run. This area can be used to install a bioretention area. Soils hydrologic classification here is A/B, therefore the removal efficiency of a bioretention area is 80%. The total watershed area that is tributary to the park is approximately 20.03 acres. Using the Land Cover type estimates, the sediment load reduction can be calculated:

20.03 acres

$(20.03 \text{ acres of urbanized area tributary to Wylie Run}) * 17\% = 3.41 \text{ acres impervious}$

$(20.03 \text{ acres of urbanized area tributary to Wylie Run}) * 83\% = 16.62 \text{ acres pervious}$

$(3.41 \text{ acres} * 1,839 \text{ lbs/ac/year} + 16.62 \text{ ac} * 264 \text{ lbs/ac/year}) * 80\% \text{ efficiency} = 8,534 \text{ lbs /yr sediment}$

Bioretention (C/D soil with underdrain) – Sediment removal efficiency of 55%

Bilicks Lane

Along Bilicks Lane there is a good opportunity on private property for treatment of runoff from the street and surrounding hillside before being discharged to Wylie Run. This area can be used to install a bioretention area. Soils hydrologic classification here is C/D, therefore the removal efficiency of a bioretention area is 55%. The total watershed area that is tributary to the park is approximately 14.04 acres. Using the Land Cover type estimates, the sediment load reduction can be calculated:

14.04 acres

$(14.04 \text{ acres of urbanized area tributary to Wylie Run}) * 17\% = 2.39 \text{ acres impervious}$

$(14.04 \text{ acres of urbanized area tributary to Wylie Run}) * 83\% = 11.65 \text{ acres pervious}$

$(2.39 \text{ acres} * 1,839 \text{ lbs/ac/year} + 11.65 \text{ ac} * 264 \text{ lbs/ac/year}) * 55\% \text{ efficiency} = 4,112 \text{ lbs /yr sediment}$

Total Reduction

Combining these BMPs will reduce the sediment load by 73,558 lbs/yr of sediment to Wylie Run and Fallen Timber Run. It is assumed the Total Phosphorus is also removed by a factor of 5%.

Selected BMP	Estimated Sediment Loading Reduction (lbs/yr)
Storm Sewer System Solids Removal	26,288
Bioretention (C/D) Stoney Park	13,312
Bioretention (C/D) Glenwood Drive	10,149
Bioretention (C/D) Blaine Hill	11,162
Bioretention (A/B) Ross Street	8,534
Bioretention (C/D) Bilicks Lane	4,112
Total	73,558
Minimum Required	72,811
Difference	(747)

Section F – Identify Funding Mechanism

Prior to approving coverage DEP will evaluate the feasibility of implementations of an applicant's PRP. Part of this analysis includes a review of the applicants proposed method(s) by which BMPs will be funded. Applicants must identify all project sponsors and partners and probable funding sources for each BMP. Possible Funding Possibilities:

- CDBG (Community Development Block Grant)
- CITF (Construction Industry Trust Fund)
- GTRP (Greenways, Trails and Recreation Program)
- DCNR Stream Bank and Riparian Buffer Restoration Grant Funding
- PADEP Environmental Stewardship and Watershed Protection Act Grants
- NOAA Habitat Conservation Program Grants

Section G – Identify Responsible Parties for Operation and Maintenance of BMPs

Once implemented, the BMPs must be maintained in order to continue producing the expected pollutant reductions. Applicants must identify the following for each selected BMP:

- The party(ies) responsible for ongoing O&M.

- The activities involved with O&M for each BMP; and
- The frequency at which O&M activities will occur.

Storm Sewer System Solids Removal (Inlet Filter Bags) – Follow the manufactures’ guidelines for maintenance and take into account expected pollutant load and site conditions. Initially, Inlets should be inspected monthly by Municipal staff. They should be emptied when over half full of sediment (and trash) and cleaned at least twice a year. They should also be inspected after major runoff events. Maintenance is crucial to the effectiveness of this BMP. The Township Department of Public Works staff will review the process and be responsible for maintenance and inspection of the inlet filter bags.

Bioretention – The bioretention areas should be inspected monthly by Municipal staff to ensure that water is being captured and infiltrated through the soil. In addition, the structure should be monitored after significant rain events to ensure proper function. If the depressed area begins to fill with sediment, Municipal staff should remove sediment to the designed elevation and dispose of the material properly. Maintenance is crucial to the effectiveness of this BMP. The Township Department of Public Works staff will review the process and be responsible for maintenance and inspection of the Bioretention area.

APPENDIX A

Public Advertisement

Appendix A – This plan was advertised on 11/24/2017. This updated version of the report will be re-advertised October 2018.

AFFP
MS4 PRP PLAN

Affidavit of Publication

STATE OF PENNSYLVANIA } SS
COUNTY OF
WESTMORELAND }

NOTICE

Elizabeth Township, Allegheny County, Pennsylvania, has prepared a Pollutant Reduction Plan (PRP) as required by the PA DEP under the MS4 program. The goal of the PRP is to reduce sediment and total phosphorous flowing into Wylie Run and Fallen Timber Run. The PRP proposes to install stormwater best management practices (BMPs) to reduce the pollutant loading as required. The PRP is located at the Elizabeth Township Municipal Building and is available for public review. Written comments will be received from the public for 30 days from the date of this notice. 11/24

Jeffrey T. Oliver, being duly sworn, says:

That he is General Manager of the Mon Valley Independent, a daily newspaper of general circulation, printed and published in Monessen, Westmoreland County, Pennsylvania; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

November 24, 2017

That said newspaper was regularly issued and circulated on those dates.

SIGNED:



General Manager

Subscribed to and sworn to me this 24th day of November 2017.



Joseph A. Daffonso, Notary Public, Westmoreland County, Pennsylvania

My commission expires: January 01, 2018

00001670 00015047

Joelle Whiteman
Elizabeth Township
222 Rock Run Rd
ELIZABETH, PA 15037

Joseph A. Daffonso
Magisterial District Judge
Magisterial District 10-1-03
Westmoreland County, PA
My Commission Expires
1st Monday in January 2018

NOTICE

Elizabeth Township, Allegheny County, Pennsylvania, has prepared a Pollutant Reduction Plan (PRP) as required by the PA DEP under the MS4 program. The goal of the PRP is to reduce sediment and total phosphorous flowing into Wylie Run and Fellen Timber Run. The PRP proposes to install stormwater best management practices (BMPs) to reduce the pollutant loading as required. The PRP is located at the Elizabeth Township Municipal Building and is available for public review. Written comments will be received from the public for 30 days from the date of this notice. 11/24

APPENDIX B

Public Advertisement Comments

Appendix B – No comments were received from the public for the PRP for Wylie Run.

APPENDIX C

Public Comments Consideration

Appendix C – No comments were received during public comment period for the PRP for Wylie Run.

APPENDIX D

MS4 Map



Wyle Run

E99

E100

E101

Kalen Dr Park

E103

Ballfield

E104

Ballfield

ney
ck
acres

E95

Highland
Meadow
Park

E96

E102

E81

E61

E44

E78

E76

E43

E47

E77

E62

E63

E65

E66

E67

E68

E69

Round
Hill Park

ELIZABETH TOWNSHIP

Pollutant Reduction Plan - Wylie Run

November 2017

KLH



**ENGINEERS, INC
5173 CAMPBELLS RUN ROAD
PITTSBURGH, PA 15205-9733**

ELIZABETH TOWNSHIP
Pollutant Reduction Plan – Wylie Run

Table of Contents

INTRODUCTION	1
Section A – Public Participation	1
Section B – Map	1
Section C – Pollutants of Concern	2
Section D – Existing Loading for Pollutants of Concern	2
Section E – Select BMP’s to Achieve the Minimum Required Reductions in Pollutant Loading ...	3
Section F – Identify Funding Mechanism	4
Section G – Identify Responsible Parties for Operation and Maintenance of BMP’s	5
Appendix A Public Advertisement	
Appendix B Public Advertisement Comments	
Appendix C Public Comments Consideration	
Appendix D MS4 Map	

ELIZABETH TOWNSHIP

Pollutant Reduction Plan - Wylie Run

Introduction

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Section A – Public Participation

- Elizabeth Township shall make a complete copy of the PRP available for public review
- Elizabeth Township 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 West Chester University of Pennsylvania MS4 Pollution Reduction Plan 4 length of time Elizabeth Township 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 the DEP. Include a copy of the public notice with the PRP.
- Elizabeth Township shall accept written comments for a minimum of 30 days from the date of public notice. Include a copy of all written comments received from the public with the PRP.
- Elizabeth Township 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.
- Elizabeth Township shall consider and make a record of the consideration of each timely comment received from the public during
- Elizabeth Township shall consider and make a record of the consideration of each timely comment received form the public during the public comment period concerning the plan, identifying any changes made to the plan in response to the comment. Include a copy of the Township's record of consideration of all timely comments received in the public comment period with the PRP.

This Pollution Reduction Plan is available for review by the public for 45 days start on November 24th, 2017. A Public meeting was held on ____ for public comment on the plan.

Section B – Map

The full MS4 Outfall map is attached to this plan in Appendix D.

Section C – Pollutants of Concern

According to the MS4 Requirements table, Elizabeth Township contributes to five Impaired Waters, the Monongahela River, Wylie Run, Fallen Timber Run, Gillespie Run, and Unnamed tributaries to the Youghiogheny River. The Monongahela River is impaired for PCBs (Appendix C). Wylie Run is impaired for Metals (Appendix A), Organic Enrichment/Low D.O, Siltation. (Appendix E). Fallen Timber Run is impaired for Metals (Appendix A), Organic Enrichment/Low D.O, Siltation. (Appendix E). Gillespie Run is impaired for Metals (Appendix A). Unnamed Tributaries to the Youghiogheny River are impaired for Metals (Appendix A). For each impaired stream to which the Township discharges that has Appendix D or Appendix E requirements, a Pollutant Reduction plan is required. This plan serves to address Appendix E requirements for Wylie Run.

The Township is required to reduce their pollutant loading by 10% for sediment and 5% for Phosphorous. It is assumed that a reduction in sediment will also affect a reduction in Phosphorous.

Section D Existing Loading for Pollutants of Concern

Elizabeth Township in Allegheny County, PA has a total of 14,841 acres. Within Elizabeth Township there are two Urbanized areas, the Pittsburgh urbanized area within the Township is 5,612 acres and the Monessen-California urbanized area within the Township is 168 acres.

Out of this area, the Planning area was determined as areas where runoff is generated that travels through an urbanized area to Wylie Run. The watershed for Wylie Run was determined from contours and then divided into Urbanized Area and Non-urbanized Area. Using the Statewide Land Cover estimates table, the following areas were calculated:

ELIZABETH TOWNSHIP	% Impervious	% Pervious
Urbanized Area	17%	83%
Non-urbanized Area	9%	91%

ELIZABETH TOWNSHIP	Impervious	Pervious
Urbanized Area	212.16 ac	1035.84 ac
Non-urbanized Area	42.75 ac	432.25 ac

Wylie Run is impaired for Organic Enrichment/Low D.O. and Siltation. The MS4 Requirements table specifies that a PRP for impaired waters (Appendix E) must be developed.

The loading rates according to Attachment B for Allegheny County are as follows:

Category	Sediment Loading Rate (lbs/acre/yr)	TP Loading Rate (lbs/acre/yr)
Impervious developed	1,839	2.28
Pervious developed	264.96	0.84
Undeveloped	234.6	0.33

The calculation of pollutant loading for Elizabeth Township is then as follows:

Sediment:

$(212.16 \text{ acres} \times 1,839 \text{ lbs/acre/yr}) + (1035.84 \text{ acres} \times 264.96 \text{ lbs/acre/yr}) + (475 \text{ acres} \times 264.96 \text{ lbs/acre/yr})$

= 502,898 lbs/year Sed.

Total Phosphorus:

$(212.16 \text{ acres} \times 2.28 \text{ lbs/acre/yr}) + (1035.84 \text{ acres} \times 0.84 \text{ lbs/acre/yr}) + (475 \text{ acres} \times 264.96 \text{ lbs/acre/yr})$

= 1,677 lbs/year TP

The total amount of pollutants is 502,898 lbs of sediment and 1,677 lbs of Phosphorous. Therefore the 10% reduction in sediment required is 50,290 lbs. The reduction in phosphorous is 83.86 lbs and is assumed to be accounted for in the removal of sediment.

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

Practices that capture and temporarily store runoff and pass it through a filter bed of either sand or an organic media. There are various sand filter designs, such as above ground, below ground, perimeter, etc. An organic media filter uses another medium besides sand to enhance pollutant removal for many compounds due to the increased cation exchange capacity achieved by increasing the organic matter. These systems require yearly inspection and maintenance to receive pollutant reduction credit.

There are three major areas of urbanization that contribute to Wylie run. The largest area is the town of Elizabeth between McKeesport Road and Park Avenue. This area also includes runoff collected on Happy Hollow Road. Stormwater inlets are located throughout this area and they convey runoff to Wylie Run. The second area is the residential area north of Lovedale Road around Broadlawn Drive and Boston Hollow Road. This area also has inlets which collect runoff. The third area is the residential area off of Cowan Drive. This area does have inlets to collect runoff as well as a large public area where stormwater could be collected.

Inlet Filter bags – Sediment removal efficiency of 80%

This sediment load for the first two areas (Elizabeth and Lovedale Road) can be reduced by implementing filtering practices by installing inlet filter bags and cleaning or replacing these bags twice annually. This practice will help to remove sediment that would otherwise be washed into Wylie Run or tributaries to Wylie Run. To calculate the amount of sediment removed, these two areas are considered assuming at least 50% of the runoff reaches a catch. The Land Cover type estimate is used to break the areas down by impervious and pervious areas and the loading rates are applied to find an estimate of sediment removed.

Inlet Filtering planning area

Assume 50% of tributary area reaches catch basins:

$$227 * 50\% = 113.5 \text{ acres}$$

$$(113.5 \text{ acres of urbanized area tributary to Wylie Run}) * 17\% = 19.295 \text{ acres impervious}$$

$$(113.5 \text{ acres of urbanized area tributary to Wylie Run}) * 83\% = 94.205 \text{ acres pervious}$$

$$(19.295 \text{ acres} * 1,839 \text{ lbs/ac/year} + 94.205 \text{ ac} * 264 \text{ lbs/ac/year}) * 80\% \text{ efficiency} = 48,355 \text{ lbs sediment}$$

Bioretention (C/D soil with underdrain – Sediment removal efficiency of 55%

The area of Cowan Drive has a small park located at a lower elevation. This area can be used to install a small bioretention area. Soils hydrologic classification here is C/D, therefore the removal efficiency of a bioretention area is 55%. The total watershed area that is tributary to the park is approximately 6.75 acres. Using the Land Cover type estiamtes, the sediment load reduction can be calculated:

6.75 acres

$$(6.75 \text{ acres of urbanized area tributary to Wylie Run}) * 17\% = 1.15 \text{ acres impervious}$$

$$(6.75 \text{ acres of urbanized area tributary to Wylie Run}) * 83\% = 5.60 \text{ acres pervious}$$

$$(1.15 \text{ acres} * 1,839 \text{ lbs/ac/year} + 5.60 \text{ ac} * 264 \text{ lbs/ac/year}) * 55\% \text{ efficiency} = 1,977 \text{ lbs sediment}$$

Combining these two practices will reduce the sediment load by 50,332 lbs/yr of sediment to Wylie Run. It is assumed the Total Phosphorus is also removed by a factor of 5%.

Selected BMP	Estimated Sediment Loading Reduction (lbs/yr)
Filtering Practices	50,290
Bioretention (C/D)	1,977
Total	50,332
Minimum Required	50,290
Difference	(43)

Section F – Identify Funding Mechanism

Prior to approving coverage DEP will evaluate the feasibility of implementations of an applicant's PRP. Part of this analysis includes a review of the applicants proposed method(s) by which BMPs will be funded. Applicants must identify all project sponsors and partners and probable funding sources for each BMP. Possible Funding Possibilities:

- CDBG (Community Development Block Grant)
- CITF (Construction Industry Trust Fund)
- GTRP (Greenways, Trails and Recreation Program)
- DCNR Stream Bank and Riparian Buffer Restoration Grant Funding
- PADEP Environmental Stewardship and Watershed Protection Act Grants
- NOAA Habitat Conservation Program Grants

Section G – Identify Responsible Parties for Operation and Maintenance of BMPs

Once implemented, the BMPs must be maintained in order to continue producing the expected pollutant reductions. Applicants must identify the following for each selected BMP:

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

Filtration Practices (Inlet Filter Bags) – Follow the manufactures' guidelines for maintenance and take into account expected pollutant load and site conditions. Initially, Inlets should be inspected monthly by Municipal staff. They should be emptied when over half full of sediment (and trash) and cleaned at least twice a year. They should also be inspected after major runoff events. Maintenance is crucial to the effectiveness of this BMP. The Township Department of Public Works staff will review the process and be responsible for maintenance and inspection of the inlet filter bags.

Bioretention (C/D)) – The bioretention area should be inspected monthly by Municipal staff to ensure that water is being captured and infiltrated through the soil. In addition, the structure should be monitored after significant rain events to ensure proper function. If the depressed area begins to fill with sediment, Municipal staff should remove sediment to the designed elevation and dispose of the material properly. Maintenance is crucial to the effectiveness of this BMP. The Township Department of Public Works staff will review the process and be responsible for maintenance and inspection of the Bioretention area.

APPENDIX A

Public Advertisement

Affidavit of Publication

STATE OF PENNSYLVANIA } SS
COUNTY OF
WESTMORELAND }


Jeffrey T. Oliver, being duly sworn, says:

That he is General Manager of the Mon Valley Independent, a daily newspaper of general circulation, printed and published in Monessen, Westmoreland County, Pennsylvania; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

November 24, 2017


That said newspaper was regularly issued and circulated on those dates.

SIGNED:



General Manager

Subscribed to and sworn to me this 24th day of November 2017.



Joseph A. Dalfonso, Notary Public, Westmoreland County, Pennsylvania

My commission expires: January 01, 2018

00001670 00015047

Joelle Whiteman
Elizabeth Township
522 Rock Run Rd
ELIZABETH, PA 15037

Joseph A. Dalfonso
Magisterial District Judge
Magisterial District 10-1-03
Westmoreland County, PA
My Commission Expires
1st Monday in January 2018

NOTICE

Elizabeth Township, Allegheny County, Pennsylvania, has prepared a Pollutant Reduction Plan (PRP) as required by the PA DEP under the MS4 program. The goal of the PRP is to reduce sediment and total phosphorous flowing into Wylie Run and Fallen Timber Run. The PRP proposes to install stormwater best management practices (BMPs) to reduce the pollutant loading as required. The PRP is located at the Elizabeth Township Municipal Building and is available for public review. Written comments will be received from the public for 30 days from the date of this notice.
11/24

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Elizabeth Township, Allegheny County, Pennsylvania, has prepared a Pollutant Reduction Plan (PRP) as required by the PA DEP under the MS4 program. The goal of the PRP is to reduce sediment and total phosphorous flowing into Wylie Run and Fallen Timber Run. The PRP proposes to install stormwater best management practices (BMPs) to reduce the pollutant loading as required. The PRP is located at the Elizabeth Township Municipal Building and is available for public review. Written comments will be received from the public for 30 days from the date of this notice.
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APPENDIX B

Public Advertisement Comments

Appendix B – This appendix will include the public comments received when submitted to PA DEP.

APPENDIX C

Public Comments Consideration

Appendix C – This appendix will include the responses to comments received when submitted to PA DEP.

APPENDIX D

MS4 Map