



Herbert, Rowland & Grubic, Inc.
501 Allendale Road, Suite 203
King of Prussia, PA 19406
484.460.7050
www.hrg-inc.com

LOWER MAKEFIELD TOWNSHIP POLLUTION REDUCTION PLAN (PRP) AMENDMENT

Lower Makefield Township
1100 Edgewood Rd., Yardley, PA 19067

Submitted to the Pennsylvania Department of Environmental
Protection Southeast Regional Office
Developed for the Core Creek-Neshaminy Creek, Martins Creek, Mill
Creek-Silver Lake, and Van Sciver Lake-Delaware River Hydrologic
Unity Code 12 (HUC12) Watersheds

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FOREWORD

This Pollutant Reduction Plan (PRP) serves to fulfill the requirements of Appendix E of the National Pollutant Discharge Elimination System (NPDES) Permit PAG130011 for Lower Makefield Township, Bucks County issued by the Pennsylvania Department of Environmental Protection (PADEP). This plan has been completed using publicly available data and data supplied by Lower Makefield Township.

INTRODUCTION

HRG serves as Lower Makefield Township's retained stormwater engineer. As part of ongoing management of the stormwater program in partnership with Township staff, HRG performed a full review of the Township's stormwater program, including its Pollutant Reduction Plan (PRP). It was determined via this review that multiple Best Management Practices (BMPs) within the originally proposed project list were either not feasible or were less efficient at achieving sediment reductions than other available BMPs within the Township. To correct this, HRG evaluated multiple alternative projects and selected those that better matched the Township's capabilities or achieved a higher level of sediment reduction. More information on previously proposed projects can be found in Figure 9 of the Appendix section of this document.

SECTION A – PUBLIC PARTICIPATION

PAG13 Requirement: *"The applicant shall make a complete copy of the PRP available for public review."*

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

- On the Lower Makefield Township website at www.lmt.org/information/stormwater/.
- At the Lower Makefield Township offices at 1100 Edgewood Rd., Yardley, PA 19067.

PAG13 Requirement: *"The applicant shall publish, in a newspaper of general circulation in the area, a public notice containing a statement describing the plan, where it may be reviewed by the public, and the length of time the permittee will provide for the receipt of comments. The public notice must be published at least 45 days prior to the deadline for submission of the PRP to DEP. Attach a copy of the public notice to the PRP."*

The required public notice was printed in the local paper on June XX, 2026. A copy of the public notice and proof of publishing are attached.

PAG13 Requirement: *"The applicant shall accept written comments for a minimum of 30 days from the date of public notice. Attach a copy of all written comments received from the public to the PRP."*

Written comments were accepted from June XX, 2026 to July XX, 2026. All received comments and responses are attached.

PAG13 Requirement: *"The applicant shall accept comments from any interested member of the public at a public meeting or hearing, which may include a regularly scheduled meeting of the governing body of the municipality or municipal authority that is the permittee."*

Verbal comments were accepted from the public at the regularly scheduled Township Board of Supervisors meeting on July XX, 2026.

PAG13 Requirement: *“The applicant shall consider and make a record of the consideration of each timely comment received from the public during the public comment period concerning the plan, identifying any changes made to the plan in response to the comment. Attach a copy of the permittee’s record of consideration of all timely comment received in the public comment period to the PRP.”*

All written and verbal public comments were considered and a written response to each comment is attached.

SECTION B – MAP

PAG13 Requirement: *“Attach a map that identifies land uses and/or impervious/pervious surfaces and the storm sewershed boundary associated with each MS4 outfall that discharges to impaired surface waters, (see note below), and calculate the storm sewershed area that is subject to Appendix D and/or Appendix E. In addition, the map must identify the proposed location(s) of structural BMP(s) that will be implemented to achieve the required pollutant load reductions.”*

A map showing the PRP planning area, stormwater system, surface waters, current land use data, and proposed projects is included in the Appendix as Figure 8.

SECTION C – POLLUTANTS OF CONCERN

PAG13 Requirement: *“Identify the pollutants of concern for each storm sewershed or the overall PRP Planning Area (see Section I.B of these instructions).”*

Since this PRP is being developed for impaired waters, the pollutants are based on the impairment listing provide in PADEP’s Aggregation Suggestions for MS4 Requirements Table (included in the Appendix as Figure 10) which references “siltation” for each of the Township’s impaired watercourses. The pollutant of concern for siltation is Total Suspended Solids (TSS). The Township is divided into two PRP planning areas. One planning area includes the Core Creek-Neshaminy Creek Hydrologic Unit Code (HUC12) watersheds and the other includes the Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake-Delaware River HUC12 watersheds. The different planning areas are also shown on the PRP map in the Appendix, Figure 8.

SECTION D – DETERMINE EXISTING POLLUTANT LOADING FOR POLLUTANTS OF CONCERN

PAG13 Requirement: *“Identify the date associated with the existing loading estimate (see Section I.C of these instructions).”*

The original date of the development of this PRP was July 31, 2017. The Township performed a revision in September 7, 2017 based upon DEP comment. This amendment was developed in May 2026 and submitted to DEP in July 2026 after the public comment period.

PAG13 Requirement: “Calculate the existing loading, in lbs. per year, for the pollutant(s) of concern in the PRP Planning Area.”

The planning area assessed in this PRP consists of the urbanized areas in Lower Makefield Township which drains to the impaired watercourses (Core Creek-Neshaminy Creek, Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake-Delaware River) excluding state rights-of-way, NPDES facilities (if applicable), and private systems and areas that do not interact with the MS4. The loading rates for pervious and impervious cover for Lower Makefield Township are provided in the PADEPs “PRP Instructions” in Attachment B, “Developed Land Loading Rates for PA Counties” under the “Other Counties” Section. Table 1 shows the “Other Counties” Pollutant Loading Rates used.

Table 1: “Other Counties” Sediment Loading Rates	
Pollutant and Source	Loading Rate
TSS Impervious Developed	1,839.00 lbs/ac/yr
TSS Pervious Developed	264.96 lbs/ac/yr

The impervious and pervious developed areas covered by the planning area were derived in September 2025 using high resolution imagery completed as part of the development and implementation of a stormwater utility fee. A mixture of county parcel data and the flyover data was used to parse out PennDOT rights-of-way and direct drainage. The base planning area for the Core Creek-Neshaminy Creek Watershed is 2,145.63 acres and the base planning area for Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake-Delaware River Watersheds is 1,663.20 acres. With final parsing, the planning area for the Core Creek-Neshaminy Creek Watershed lowered to 1,442.07 acres and the planning area for the Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake-Delaware River Watersheds lowered to 1,528.42 acres.

After parsing, the percent of impervious surfaces in the Core Creek-Neshaminy Creek Watershed planning area was calculated at 18%, and for the Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake-Delaware River Watersheds, the percent impervious area was calculated at 21%. Table 2 shows a summary of the study area and parsed loading rates used to develop a baseline pollutant loading rate. Due to the availability of higher accuracy data, Lower Makefield Township is opting to use mapped impervious cover obtained during the Township’s stormwater fee development in this PRP amendment. The Baseline loads in Table 2 and the Appendices have been updated accordingly using the map data.

Table 2: Baseline Sediment Loading Rates				
MS4	Core Creek-Neshaminy Creek Sediment Loading	Acres	Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake- Delaware River Sediment Loading	Acres
Planning Area Baseline	1,113,391.55 lbs/yr	2,145.63	979,207.78 lbs/yr	1,663.20
Parsing	326,300.19 lbs/yr	703.56	64,783.83 lbs/yr	134.78
Total	787,091.36 lbs/yr	1,442.07	914,423.95 lbs/yr	1,528.42

In accordance with PADEP’s “PRP Instructions”, the Township may claim credit for existing structural BMPs to reduce the sediment load estimate. Attached in the Appendix, Figure 8, is a map showing the location of existing structural BMPs within the PRP planning areas. The drainage area treated by each existing BMP was delineated and the amount of pervious and impervious land cover in each drainage area was determined in the same manner as the planning area. Figures 3 and 4 (attached in the Appendix) provide the required information for existing structural stormwater BMPs within the PRP planning areas and the pollutant reduction they provide.

Table 3 shows the existing TSS loading of the PRP planning areas taking into account the total annual credit for existing BMPs:

Table 3: Adjusted Existing Loading Rates		
MS4	Core Creek-Neshaminy Creek	Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake- Delaware River
Parsed Baseline Loading Rate	787,091.36 lbs/yr	914,423.95 lbs/yr
Existing BMP Annual Credit	112,591.26 lbs/yr	34,333.66 lbs/yr
Adjusted Existing Loading Rate	674,500.10 lbs/yr	880,090.29 lbs/yr

As part of the Township's ongoing MS4 program, inspection of the existing stormwater BMPs have been completed by the Township to verify that each BMP listed in Table 3 continues to serve the function(s) it was designed for. Inspection information is provided in the Appendix, Figure 3. If it is determined during these inspections that any of the existing BMPs are not functioning properly, maintenance will be performed to correct the problem(s), or this BMP will be removed from the credit calculations and the proposed BMPs and reduction calculations will be revised accordingly.

SECTION E – SELECT BMPs TO ACHIEVE THE MINIMUM REQUIRED REDUCTIONS IN POLLUTANT LOADING

PAG13 Requirement: *"Identify the minimum required reductions in pollutant loading" "If the impairment is based on siltation only, a minimum 10% sediment reduction is required."*

PADEPs MS4 Requirements Table references "siltation" for the Township's impaired watercourses. Therefore, the Township's minimum required sediment reduction is 10%. Table 4 shows the required sediment reduction for both planning areas.

Table 4: Required Sediment Reduction		
MS4	Core Creek-Neshaminy Creek	Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake- Delaware River
Adjusted Existing Loading Rate	674,500.10 lbs/yr	880,090.29 lbs/yr
10% Required Sediment Reduction	67,450.01 lbs/yr	88,009.03 lbs/yr

Figures 5 and 6 of the Appendix lists the BMPs proposed to meet the required reduction. Their locations are shown in Figure 8 attached in the Appendix.

The proposed BMPs have been divided into two lists: Primary and Secondary. Primary projects have been analyzed and are believed to be the lowest cost to construct at this time. If it is determined during the design process that a project is not feasible, a Secondary project will be selected in order to meet required reductions. Secondary projects are also feasible, but are either more expensive to construct, on private property, or will have a more involved design process due to permitting requirements. If none of the proposed projects can be utilized, the PRP will be updated accordingly to achieve the minimum required TSS reduction.

The simplified method was utilized to calculate total BMP sediment loading. The impervious area for the proposed projects was calculated using the same impervious area dataset used in existing conditions calculations. Based on a combination of PASDA LiDAR and other topographic resources, or design plans, drainage areas were determined for all proposed BMPs. The following BMPs types are proposed:

Streambank Stabilization and Floodplain Reconnection

Streambank stabilization prevents further erosion and degradation of disturbed or cut back streambanks, ultimately resulting in lower sediment and nutrient loads being released into the stream. Where practical, the Township will implement vegetative streambank stabilization to promote plant uptake of pollutant laden runoff in order to reduce the amount of nutrients and sediment eventually reaching the local waterways. Vegetative stabilization relies on the root structures of established plantings to stabilize the streambank and provide scour protection. In addition, incised streambanks will be regraded at a lesser slope to prevent further incision by allowing the stream to reconnect to the surrounding floodplain. This method offers a relatively inexpensive means of stabilization and provides a naturalized appearance to the rehabilitated streambank.

Velocity reduction, where practical, will be achieved through the use of rock vanes, wing deflectors, and grade controls in combination with streambank stabilization, riparian buffer projects, and floodplain reconnection. These instream structures will direct stream flow away from eroding or newly stabilized streambanks, as well as create stream meanders that will reduce stream velocity, further preventing streambank erosion and scour. The structures will be constructed of natural materials such as rock, root wads, and logs. The exact number and locations for the proposed instream structures will be determined upon completion of the engineered design. Lower Makefield Township intends to perform riparian buffer restoration on the segments of stream to be stabilized. The goal of the riparian buffer projects is to naturalize the existing floodplain and reestablish buffer areas along the stream segments to a minimum width of 35 feet. The restorations will include the removal and replacement of dead, diseased, and/or invasive vegetation; as well as new plantings in areas where buffers have diminished in size. A standard TSS reduction of 44.88 lbs/ft is assumed for stream restoration in this PRP report.

Detention Basin Retrofit/Bioinfiltration

Detention basins are relatively simple basins designed to receive, temporarily hold, and discharge stormwater at a controlled rate. While they can provide rate and volume mitigation, detention basins offer limited water quality benefits. Detention basin retrofits transform these simple catch, store, and release ponds into BMPs that provide infiltration, bioretention, and improved sediment and nutrient removal capabilities. This is achieved by extending the storage time with structure modifications, improving soil conditions to allow for greater infiltration rates, and naturalizing the basins with native and/or wetland plant species.

SECTION F - IDENTIFY FUNDING MECHANISMS

PAG13 Requirement: *"Applicants must identify all project sponsors and partners and probable funding sources for each BMP."*

The Township adopted a stormwater fee ordinance and credit policy in 2026. The fee is collected from each developed parcel within Lower Makefield Township and will be used to offset the Township's Stormwater Management costs. Funding for the design and construction of the BMPs proposed herein will be funded through a variety of sources including the stormwater fee and available grants.

SECTION G - IDENTIFY RESPONSIBLE PARTIES FOR OPERATION AND MAINTENANCE (O&M) OF BMPs

PAG13 Requirement: "Applicants must identify the following for each selected BMP:

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

Once implemented, the BMPs outlined in this plan will be operated and maintained on a case-by-case basis. If a property owner or Homeowner's Association (HOA) is responsible for O&M of the basin, the Township will ultimately have the responsibility should the property owner/HOA neglect to maintain the BMP so that it functions as designed. Lower Makefield Township Staff will inspect all BMPs regularly to ensure that they continue to provide the expected pollutant reductions. The Operation and Maintenance (O&M) activities will be reported in the Annual MS4 Status Reports submitted in accordance with the PAG13 Permit. Projects located within private property will obtain an easement, if not already existing. The O&M activities and schedule for each BMP will be developed during the design phase. A general summary of the O&M activities involved with each BMP type and the frequency at which O&M activities will occur are as follows:

Stream Restorations/Riparian Forest Buffers

Operation and maintenance requirements for the stream restoration projects include:

- Ensure disturbed areas are kept free of foot and/or vehicular traffic until full stabilization has occurred.
- Regular watering of plantings during the first growing season. Planting in the fall may reduce the need for additional watering.
- Conduct monthly site visits to ensure plantings are healthy and sufficiently watered, weeds are properly managed, sufficient mulch is in place until site is stabilized and plantings have become established.
- Conduct monthly site visits to ensure all disturbed earth remains stabilized and erosion or cutting of the streambank has not taken place. Any destabilized earth or active streambank erosion shall be repaired immediately upon discovery.
- Conduct annual inspections once streambank/area is stabilized and plants have become established.
- Immediately upon notice, repair any rills, gullies, or streambank cutting that may occur.
- Remove weeds and invasive plant species during each growing season. Naturally growing native vegetation should be left intact to promote stabilization of the streambank and surrounding area.
- Replace mulch as needed.
- Remove accumulated trash and debris weekly.
- Remove and replace dead and diseased plantings annually.
- Keep machinery and vehicles away from stabilized areas.

The contractor shall be responsible for the operation and maintenance of the streambank restoration and buffer project(s) until all features of the project have been successfully constructed to the specifications and design standards set forth by the Township Engineer. The Contractor shall remain responsible for operation and maintenance of the streambank restoration and buffer project(s) until 70% permanent stabilization has been achieved. Once construction of the project(s) is complete and stabilization has occurred, the Township shall be responsible for long term implementation of all

O&M procedures to ensure the streambank stabilization and buffer improvements remain operationally functional and physically consistent with the original design.

Bioinfiltration BMPs and Retrofits

Operation and maintenance requirements for the bioinfiltration projects include:

- Ensure disturbed areas are kept free of foot and/or vehicular traffic until full stabilization has occurred. Properly designed and installed Bioinfiltration areas require some regular maintenance.
- While vegetation is being established, pruning and weeding may be required.
- Detritus may also need to be removed every year. Perennial plantings may be cut down at the end of the growing season.
- Mulch should be re-spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.
- Bioinfiltration areas should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
- During periods of extended drought, Bioinfiltration areas may require watering.
- Trees and shrubs should be inspected twice per year to evaluate health.

The contractor shall be responsible for the operation and maintenance of the bioinfiltration basin until all features of the project have been successfully constructed to the specifications and design standards set forth by the Township Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants. Once construction of the project(s) is complete, the Township shall be responsible for long term implementation of all O&M procedures to ensure the basin remains operationally functional and physically consistent with the original design.

APPENDIX



Figure 1: Public Advertisement Information

Figure 2: Baseline Sediment Loading Calculations

Figure 2: Baseline Pollutant Loading Rates												
MS4	Core Creek - Neshaminy Creek						Martins Creek - Mill Creek					
	Acres	Impervious (acre)	Impervious Sediment Loading Rate (lbs/acre/yr)	Pervious (acre)	Pervious Sediment Loading Rate (lbs/acre/yr)	lbs/year	Acres	Impervious (acre)	Impervious Sediment Loading Rate (lbs/acre/yr)	Pervious (acre)	Pervious Sediment Loading Rate (lbs/acre/yr)	lbs/year
Planning Area Baseline Loading Rate	2,145.63	346.17	1,839.00	1,799.46	264.96	1,113,391.55	1,663.20	342.13	1,839.00	1,321.07	264.96	979,207.78
Parsing	703.56	-	-	-	-	326,300.19	134.78	-	-	-	-	64,783.83
Final Planning Area Loading Rate	1,442.07	257.30	1,839.00	1,184.77	264.96	787,091.36	1,528.42	323.66	1,839.00	1,204.76	264.96	914,423.95

Figure 3: Post Construction Stormwater Management BMP Inventory

BMP No.	BMP Name	Date Installed	Date of Latest Inspection	Satisfactory	Active	Drainage Area	Entity Responsible for O&M	Latitude	Longitude	O&M Requirements	Permit Number	Description
CN-SWB-001	Detention Basin	1/1/1995	5/20/2026	Yes	Yes	15.27	Lower Makefield Township	40.250441	-74.898238	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Heather Ridge Dr.
CN-SWB-002	Detention Basin	4/1/1999	5/6/2026	Yes	Yes	79.89	Lower Makefield Township	40.258600	-74.898493	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Silverwood Dr.
CN-SWB-003	Detention Basin	1/1/1995	5/6/2026	Yes	Yes	36.89	Private	40.258442	-74.896730	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Powderhorn Dr.
CN-SWB-004	Detention Basin	1/1/1995	5/6/2026	Yes	Yes	15.78	Lower Makefield Township	40.257473	-74.896505	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Powderhorn Dr.
CN-SWB-005	Detention Basin	12/1/2002	5/6/2026	Yes	Yes	15.05	Lower Makefield Township	40.256868	-74.898918	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Trowbridge Dr.
CN-SWB-006	Detention Basin	1/1/2019	5/6/2026	Yes	Yes	9.44	Lower Makefield Township	40.254148	-74.891056	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Garden of Reflection
CN-SWB-007	Detention Basin	9/1/2005	5/6/2026	Yes	Yes	12.57	Lower Makefield Township	40.254488	-74.889332	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Garden of Reflection
CN-SWB-008	Detention Basin	1/1/2019	5/6/2026	Yes	Yes	3.63	Lower Makefield Township	40.255071	-74.886972	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Garden of Reflection
CN-SWB-009	Detention Basin	1/1/1995	5/6/2026	Yes	Yes	17.02	Lower Makefield Township	40.258867	-74.886404	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Leedom's Dr.
CN-SWB-010	Detention Basin	1/1/1995	5/6/2026	Yes	Yes	11.07	Lower Makefield Township	40.260852	-74.890771	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Farmview Dr.
CN-SWB-011	Detention Basin	1/1/1995	5/6/2026	Yes	Yes	29.84	Lower Makefield Township	40.250671	-74.884389	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Horseshoe Bend
CN-SWB-013	Detention Basin	1/1/1995	5/20/2026	Yes	Yes	29.64	Lower Makefield Township	40.247784	-74.898153	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Dawn Ln.
CN-SWB-014	Detention Basin	1/1/1995	5/20/2026	Yes	Yes	19.69	Lower Makefield Township	40.246890	-74.898150	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		E. Wellington Rd.
CN-SWB-015	Detention Basin	12/1/2002	5/20/2026	Yes	Yes	27.16	Lower Makefield Township	40.243898	-74.886097	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Colts Ln.
CN-SWB-016	Detention Basin	1/1/1999	5/29/2026	Yes	Yes	37.92	Lower Makefield Township	40.239351	-74.889628	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Bridle Estates Dr.
CN-SWB-017	Detention Basin	1/1/1995	5/20/2026	Yes	Yes	23.20	Lower Makefield Township	40.244806	-74.884879	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Inverness Dr.
CN-RP-018	Wet Pond	1/1/1995	5/20/2026	Yes	Yes	9.00	Private	40.249071	-74.893983	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Pheasant Run Cir.
CN-RP-019	Wet Pond	1/1/1995	5/20/2026	Yes	Yes	13.42	Private	40.248961	-74.894237	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Pheasant Run Cir.
CN-RP-020	Wet Pond	1/1/1995	5/20/2026	Yes	Yes	10.98	Private	40.249489	-74.893087	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Pheasant Run Cir.
CN-RP-021	Wet Pond	1/1/1995	5/20/2026	Yes	Yes	10.23	Private	40.250671	-74.884389	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Horseshoe Bend
CN-RP-022	Wet Pond	1/1/1995	5/20/2026	Yes	Yes	13.29	Private	40.250884	-74.889708	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Timber Lakes Dr.
CN-RP-026	Wet Pond	12/1/2002	5/29/2026	Yes	Yes	1.11	Private	40.223428	-74.884375	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Township Line Rd.
CN-RP-027	Wet Pond	1/1/1999	5/29/2026	Yes	Yes	2.46	Private	40.221666	-74.886203	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		777 Township Line Rd.
CN-RP-028	Wet Pond	1/1/1999	5/29/2026	Yes	Yes	34.49	Private	40.220014	-74.884620	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		111 Floral Vale Blvd.
CN-RP-031	Wet Pond	1/1/1999	5/29/2026	Yes	Yes	12.92	Private	40.216269	-74.881561	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Polo Run Dr.
CN-SWB-032	Detention Basin	1/1/1999	5/29/2026	Yes	Yes	14.76	Private	40.215831	-74.883639	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Polo Run Dr.
CN-RP-033	Wet Pond	1/1/1999	5/29/2026	Yes	Yes	14.48	Private	40.214033	-74.882828	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Palmer Farm Dr.
CN-RP-034	Wet Pond	1/1/1999	5/29/2026	Yes	Yes	2.41	Private	40.251488	-74.897990	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Heather Ridge Dr.
CN-SWB-035	Detention Basin	1/1/1999	5/6/2026	Yes	Yes	24.02	Lower Makefield Township	40.252616	-74.883885	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Brookfield Rd.
CN-SWB-036	Detention Basin	1/1/2019	5/20/2026	Yes	Yes	15.79	Private	40.240301	-74.890930	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Silver Stream Dr.
CN-SWB-038	Detention Basin	5/1/2016	5/6/2026	Yes	Yes	27.54	Lower Makefield Township	40.258051	-74.907526	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Payten Dr.
CN-SWB-039	Detention Basin	5/1/2016	5/20/2026	Yes	Yes	5.19	Private	40.260102	-74.909521	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Georgian Ct.
CN-SWB-040	Detention Basin	1/1/1995	5/20/2026	Yes	Yes	32.89	Lower Makefield Township	40.241265	-74.897670	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Wynegate Dr.
CN-RP-041	Wet Pond	1/1/1995	5/29/2026	Yes	Yes	13.75	Private	40.212642	-74.882306	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Palmer Farm Dr.
CN-SWB-042	Detention Basin	1/1/1999	6/8/2026	Yes	Yes	2.86	Private	40.216655	-74.883933	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		600 Township Line Rd.
CN-SWB-044	Detention Basin	1/1/1995	6/8/2026	Yes	Yes	24.25	Lower Makefield Township	40.247520	-74.881288	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Brentwood Rd.
CN-RP-045	Wet Pond	1/1/1995	6/8/2026	Yes	Yes	6.14	Private	40.241775	-74.889993	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Silver Stream Dr.
CN-SWB-046	Detention Basin	1/1/1995	6/8/2026	Yes	Yes	8.75	Lower Makefield Township	40.243684	-74.896515	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Quarry Rd.
MM-SWB-001	Wet Pond	1/1/1995	6/8/2026	Yes	Yes	6.98	Private	40.196949	-74.862750	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Oxford Oaks Shopping Center
MM-SWB-003	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	24.09	Lower Makefield Township	40.205865	-74.845671	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Cinnabar Ln.
MM-SWB-004	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	12.95	Private	40.210657	-74.828894	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		1524 Derbyshire Rd.
MM-SWB-005	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	26.70	Lower Makefield Township	40.201518	-74.835067	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Country Hills Rd.
MM-SWB-006	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	29.26	Lower Makefield Township	40.201713	-74.833470	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Crestview Wy.
MM-SWB-007	Dry Detention Basin	4/1/1999	6/8/2026	Yes	Yes	24.00	Private	40.208221	-74.803892	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Keating Dr.
MM-SWB-008	Dry Detention Basin	4/1/1999	5/20/2026	Yes	Yes	44.46	Lower Makefield Township	40.210289	-74.843500	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Lang Ct.
MM-SWB-010	Dry Detention Basin	1/1/1995	6/9/2026	Yes	Yes	36.61	Lower Makefield Township	40.204971	-74.845583	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Hyde Park Pl.
MM-SWB-011	Dry Detention Basin	1/1/1999	6/8/2026	Yes	Yes	15.62	Lower Makefield Township	40.205807	-74.840204	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		N. Hyacinth Dr.
MM-SWB-012	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	21.96	Lower Makefield Township	40.208638	-74.846944	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Marble Ct.
MM-SWB-013	Dry Detention Basin	1/1/1999	6/8/2026	Yes	Yes	11.83	Lower Makefield Township	40.210834	-74.839209	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Lily Pond Ln.
MM-SWB-014	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	32.46	Lower Makefield Township	40.206417	-74.835765	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		N. Elbow Ln.
MM-SWB-019	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	3.58	Lower Makefield Township	40.206595	-74.815840	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Kent Dr.
MM-SWB-020	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	101.68	Lower Makefield Township	40.214811	-74.814592	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		Friar Dr.
MM-SWB-021	Dry Detention Basin	1/1/1995	6/8/2026	Yes	Yes	31.19	Lower Makefield Township	40.211193	-74.801177	As outlined in O&M Agreement, As-Built Plans, or PADEP BMP Manual.		1208 Pine Grove Rd.

Figure 4: Existing BMP Calculations

Figure 8: Core Creek - Neshaminy Creek Existing BMPs															
BMP ID	BMP Description	Address	Latitude	Longitude	Size (acre)	Drainage Area (acre)	Drainage Area Ratio*	Drainage Area Land Use		Sediment Loading Rate		Total TSS Load (lb/yr)	Load from Previous BMP in Series (lb/yr)	Existing BMP Effectiveness	Credited Load Reduction (lb/yr)
								Impervious Area (acre)	Pervious Area (acre)	Impervious	Pervious				
CN-SWB-001	Detention Basin	Heather Ridge Dr.	40.250441	-74.898238	1.03	15.27	15.27	4.88	10.39	1,839.00	264.96	11,727.94	0	10%	1,172.79
CN-SWB-002	Detention Basin	Silverwood Dr.	40.258600	-74.898493	2.24	79.89	44.85	19.20	60.69	1,839.00	264.96	51,389.16	0	10%	5,138.92
CN-SWB-003	Detention Basin	Powderhorn Dr.	40.258442	-74.896730	0.55	36.89	10.97	8.67	28.22	1,839.00	264.96	23,421.62	0	10%	2,342.16
CN-SWB-004	Detention Basin	Powderhorn Dr.	40.257473	-74.896505	0.59	15.78	11.80	4.41	11.37	1,839.00	264.96	11,123.37	21.079	10%	3,220.28
CN-SWB-005	Detention Basin	Trowbridge Dr.	40.256868	-74.898918	0.74	15.05	14.84	4.07	10.98	1,839.00	264.96	10,394.11	0	10%	1,039.41
CN-SWB-006	Detention Basin	Garden of Reflection	40.254148	-74.891056	0.24	9.44	4.70	0.73	8.71	1,839.00	264.96	3,650.17	0	10%	365.02
CN-SWB-007	Detention Basin	Garden of Reflection	40.254488	-74.889332	0.81	12.57	12.57	2.55	10.02	1,839.00	264.96	7,345.08	0	10%	734.51
CN-SWB-008	Detention Basin	Garden of Reflection	40.255071	-74.886972	0.50	3.63	3.63	1.34	2.29	1,839.00	264.96	3,071.53	0	10%	307.15
CN-SWB-009	Detention Basin	Leedoms Dr.	40.258867	-74.886404	0.60	17.02	11.93	5.21	11.81	1,839.00	264.96	12,710.96	0	10%	1,271.10
CN-SWB-010	Detention Basin	Farmview Dr.	40.260852	-74.890771	0.63	11.07	11.07	3.41	7.66	1,839.00	264.96	8,301.17	0	10%	830.12
CN-SWB-011	Detention Basin	Horseshoe Bend	40.250671	-74.884389	1.40	29.84	28.08	9.97	19.87	1,839.00	264.96	23,600.66	0	10%	2,360.07
CN-SWB-013	Detention Basin	Dawn Ln.	40.247784	-74.898153	0.84	29.64	16.80	10.69	18.95	1,839.00	264.96	24,679.91	0	10%	2,467.99
CN-SWB-014	Detention Basin	E. Wellington Rd.	40.246890	-74.898150	0.68	19.69	13.59	6.79	12.90	1,839.00	264.96	15,905.79	0	10%	1,590.58
CN-SWB-015	Detention Basin	Colts Ln.	40.243898	-74.886097	1.04	27.16	20.87	7.48	19.68	1,839.00	264.96	18,970.52	0	10%	1,897.05
CN-SWB-016	Detention Basin	Bridle Estates Dr.	40.239351	-74.889628	1.82	37.92	36.42	14.71	23.21	1,839.00	264.96	33,201.79	0	10%	3,320.18
CN-SWB-017	Detention Basin	Inverness Dr.	40.244806	-74.884879	0.42	23.20	8.36	6.75	16.45	1,839.00	264.96	16,770.55	0	10%	1,677.06
CN-RP-018	Wet Pond	Pheasant Run Cir.	40.249071	-74.893983	0.58	9.00	9.00	0.48	8.52	1,839.00	264.96	3,140.56	0	60%	1,884.33
CN-RP-019	Wet Pond	Pheasant Run Cir.	40.248961	-74.894237	1.25	13.42	13.42	1.91	11.51	1,839.00	264.96	6,562.66	1,256	60%	4,691.33
CN-RP-020	Wet Pond	Pheasant Run Cir.	40.249489	-74.893087	1.22	10.98	10.98	1.79	9.19	1,839.00	264.96	5,726.37	3,128	60%	5,312.36
CN-RP-021	Wet Pond	Horseshoe Bend	40.250671	-74.884389	1.38	10.23	10.23	1.77	8.46	1,839.00	264.96	5,497.60	3,542	60%	5,423.50
CN-RP-022	Wet Pond	Timber Lakes Dr.	40.250884	-74.889708	1.26	13.29	13.29	1.75	11.54	1,839.00	264.96	6,274.70	3,616	60%	5,934.22
CN-RP-026	Wet Pond	Township Line Rd.	40.223428	-74.884375	3.11	1.11	1.11	0.22	0.89	1,839.00	264.96	640.98	0	60%	384.59
CN-RP-027	Wet Pond	777 Township Line Rd.	40.221666	-74.886203	1.05	2.46	2.46	0.60	1.86	1,839.00	264.96	1,595.32	0	60%	957.19
CN-RP-028	Wet Pond	111 Floral Vale Blvd.	40.220014	-74.884620	1.74	34.49	34.49	19.43	15.06	1,839.00	264.96	39,721.22	0	60%	23,832.73
CN-RP-031	Wet Pond	Polo Run Dr.	40.216269	-74.881561	1.00	12.92	12.92	4.59	8.33	1,839.00	264.96	10,649.32	0	60%	6,389.59
CN-SWB-032	Detention Basin	Polo Run Dr.	40.215831	-74.883639	0.97	14.76	14.76	6.17	8.59	1,839.00	264.96	13,621.50	0	10%	1,362.15
CN-RP-033	Wet Pond	Palmer Farm Dr.	40.214033	-74.882828	0.75	14.48	14.48	6.99	7.49	1,839.00	264.96	14,837.96	0	60%	8,902.77
CN-RP-034	Wet Pond	Heather Ridge Dr.	40.251488	-74.897990	0.19	2.41	2.41	0.06	2.35	1,839.00	264.96	733.00	0	60%	439.80
CN-SWB-035	Detention Basin	Brookfield Rd.	40.252616	-74.883885	1.81	24.02	24.02	8.03	15.99	1,839.00	264.96	19,004.90	0	10%	1,900.49
CN-SWB-036	Detention Basin	Silver Stream Dr.	40.240301	-74.890930	2.16	15.79	15.79	3.89	11.90	1,839.00	264.96	10,305.93	0	10%	1,030.59
CN-SWB-038	Detention Basin	Payten Dr.	40.258051	-74.907526	2.38	27.54	27.54	6.46	21.08	1,839.00	264.96	17,465.01	0	10%	1,746.50
CN-SWB-039	Detention Basin	Georgian Cir.	40.260102	-74.909521	0.52	5.19	5.19	1.12	4.07	1,839.00	264.96	3,138.56	0	10%	313.86
CN-SWB-040	Detention Basin	Wynegate Dr.	40.241265	-74.897670	2.97	32.89	32.89	12.05	20.84	1,839.00	264.96	27,681.31	0	10%	2,768.13
CN-RP-041	Wet Pond	Palmer Farm Dr.	40.212642	-74.882306	0.53	13.75	10.64	4.59	9.16	1,839.00	264.96	10,868.19	0	60%	6,520.92
CN-SWB-042	Detention Basin	600 Township Line Rd.	40.216655	-74.883933	1.48	2.86	2.86	1.41	1.45	1,839.00	264.96	2,978.43	0	10%	297.84
CN-SWB-044	Detention Basin	Brentwood Rd.	40.247520	-74.881288	0.46	24.25	9.26	8.89	15.36	1,839.00	264.96	20,418.85	0	10%	2,041.88
CN-RP-045	Wet Pond	Silver Stream Dr.	40.241775	-74.889993	0.93	6.14	6.14	0.59	5.55	1,839.00	264.96	2,556.62	0	60%	1,533.97
CN-SWB-046	Detention Basin	Quarry Rd.	40.243684	-74.896515	0.85	8.75	8.75	0.82	7.93	1,839.00	264.96	3,609.11	0	10%	360.91
														TOTAL	112,591.26

Figure 8: Martins Creek - Mill Creek Existing BMPs															
BMP ID	BMP Description	Address	Latitude	Longitude	Size (acre)	Drainage Area (acre)	Drainage Area Ratio* (acre)	Drainage Area Land Use		TSS Loading Rate		Total TSS Load (lb/yr)	Load from Previous BMP in Series (lb/yr)	Existing BMP Effectiveness	Credited Load Reduction (lb/yr)
								Impervious Area (Acre)	Pervious Area (Acre)	Impervious	Pervious				
MM-SWB-001	Wet Pond	Oxford Oaks Shopping Center	40.196949	-74.862750	3.75	6.98	6.98	1.52	5.46	1,839.00	264.96	4,240.88	0	60%	2,544.53
MM-SWB-003	Dry Detention Basin	Cinnabar Ln.	40.205865	-74.845671	0.92	24.09	18.37	8.12	15.97	1,839.00	264.96	19,163.01	0	10%	1,916.30
MM-SWB-004	Dry Detention Basin	1524 Derbyshire Rd.	40.210657	-74.828894	0.27	12.95	5.44	6.47	6.48	1,839.00	264.96	13,616.50	0	10%	1,361.65
MM-SWB-005	Dry Detention Basin	Country Hills Rd.	40.201518	-74.835067	1.12	26.70	22.37	8.04	18.66	1,839.00	264.96	19,729.71	0	10%	1,972.97
MM-SWB-006	Dry Detention Basin	Crestview Wy.	40.201713	-74.833470	1.55	29.26	29.26	8.43	20.83	1,839.00	264.96	21,020.70	0	10%	2,102.07
MM-SWB-007	Dry Detention Basin	Keating Dr.	40.208221	-74.803892	0.66	24.00	13.25	7.38	16.62	1,839.00	264.96	17,974.43	0	10%	1,797.44
MM-SWB-008	Dry Detention Basin	Lang Ct.	40.210289	-74.843500	1.83	44.46	36.58	13.37	31.09	1,839.00	264.96	32,825.37	0	10%	3,282.54
MM-SWB-010	Dry Detention Basin	Hyde Park Pl.	40.204971	-74.845583	1.58	36.61	31.51	13.08	23.53	1,839.00	264.96	30,288.05	0	10%	3,028.81
MM-SWB-011	Dry Detention Basin	N. Hyacinth Dr.	40.205807	-74.840204	0.63	15.62	12.66	4.81	10.81	1,839.00	264.96	11,708.63	0	10%	1,170.86
MM-SWB-012	Dry Detention Basin	Marble Ct.	40.208638	-74.846944	2.32	21.96	21.96	8.39	13.57	1,839.00	264.96	19,023.74	0	10%	1,902.37
MM-SWB-013	Dry Detention Basin	Lily Pond Ln.	40.210834	-74.839209	0.58	11.83	11.59	3.87	7.96	1,839.00	264.96	9,226.00	0	10%	922.60
MM-SWB-014	Dry Detention Basin	N. Elbow Ln.	40.206417	-74.835765	0.92	32.46	18.39	9.66	22.80	1,839.00	264.96	23,806.28	0	10%	2,380.63
MM-SWB-019	Dry Detention Basin	Kent Dr.	40.206595	-74.815840	0.32	3.58	3.58	1.19	2.39	1,839.00	264.96	2,821.66	0	10%	282.17
MM-SWB-020	Dry Detention Basin	Friar Dr.	40.214811	-74.814592	4.70	101.68	94.10	33.40	68.28	1,839.00	264.96	79,514.07	0	10%	7,951.41
MM-SWB-021	Dry Detention Basin	1208 Pine Grove Rd.	40.211193	-74.801177	2.42	31.19	31.19	5.66	25.53	1,839.00	264.96	17,173.17	0	10%	1,717.32
TOTAL															34,333.66

Figure 5: Proposed PRP BMP Project Descriptions

CORE CREEK-NESHAMINY CREEK

PRIMARY

Bioinfiltration Basin: CN-SWB-001

The Township evaluated the retrofit of an existing basin located at the corner of Heather Ridge Drive and Lindenhurst Road on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-005

The Township evaluated the retrofit of an existing basin located at the cul-de-sac of Trowbridge Dr. on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-011

The Township evaluated the retrofit of an existing basin located at the cul-de-sac of Horseshoe Bend on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-015

The Township evaluated the retrofit of an existing basin located off Colts Lane on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-016

The Township evaluated the retrofit of an existing basin located off Bridle Estates Drive on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-035

The Township evaluated the retrofit of an existing basin located off Brookfield Road on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-044

The Township evaluated the retrofit of an existing basin located at the corner of Brentwood Road and Dorothy Drive on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

SECONDARY

Bioinfiltration Basin: CN-SWB-009

The Township evaluated the retrofit of an existing basin located at the corner of Brookfield Road and Leedom Drive on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: CN-SWB-010

The Township evaluated the retrofit of an existing basin located at the corner of Leedom Drive and Farmview Drive on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Stream Restoration: CN-SR-047

The Township evaluated the stream restoration located along an unnamed tributary of Core Creek north of Heather Ridge Drive on private property. The stream restoration encompasses approximately 2,000 linear feet of stream and will be maintained by Lower Makefield Township. Proposed stream restoration activities include streambank stabilization, revegetation of disturbed areas, restoration of riparian buffers, and stream velocity reduction.

MARTINS CREEK, MILL CREEK-SILVER LAKE, VAN SCIVER LAKE- DELAWARE RIVER

PRIMARY

Stream Restoration and Floodplain Reconnection: MM-SR-022

The Township evaluated the stream restoration and floodplain reconnection located along Rock Run north of Rock Run Road on Township property. The stream restoration encompasses approximately 2,400 linear feet of stream and will be maintained by Lower Makefield Township. Proposed stream restoration activities include streambank stabilization, revegetation of disturbed areas, restoration of riparian buffers, and stream velocity reduction. Proposed floodplain reconnection activities include re-grading overbank areas and restoration of riparian buffers.

SECONDARY

Bioinfiltration Basin: MM-SWB-003

The Township evaluated the retrofit of an existing basin located at the corner of Cinnabar Lane and Knights Bridge Road on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-005

The Township evaluated the retrofit of an existing basin located at the corner of Country Hills Road and Stony Hill Road on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-006

The Township evaluated the retrofit of an existing basin located off Crestview Way on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-007

The Township evaluated the retrofit of an existing basin located off Keating Drive on private property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-008

The Township evaluated the retrofit of an existing basin located at the cul-de-sac of Pondview Court on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-012

The Township evaluated the retrofit of an existing basin located off Marble Court on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-013

The Township evaluated the retrofit of an existing basin located off Lily Pond Lane on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-014

The Township evaluated the retrofit of an existing basin located off North Elbow Lane on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-019

The Township evaluated the retrofit of an existing basin located off Kent Drive on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-020

The Township evaluated the retrofit of an existing basin located at the corner of Friar Drive and Trend Road on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Bioinfiltration Basin: MM-SWB-021

The Township evaluated the retrofit of an existing basin located at the corner of West Ferry Road and Big Oak Road on Township property. The basin will be maintained by Lower Makefield Township. Proposed retrofit activities include restoration of the infiltration surface, installation of pretreatment measures (forebays), rehabilitation of outflow structures, implementation of special plantings, and maintenance of all basin components to ensure proper function.

Figure 6: Proposed PRP BMP Project Calculations

BMP ID	BMP Description	Address	Latitude	Longitude	Size (acre)	Drainage Area (acre)	Drainage Area Ratio* (acre)	TSS Loading Rate				Total TSS Load (lb/yr)	Load from Previous BMP in Series (lb/yr)	Existing BMP Effectiveness	Proposed BMP Effectiveness	Proposed BMP Credited Efficiency	Proposed Annual Reduction (lb/yr)	Designation
								Impervious Area (Acre)	Pervious Area (Acre)	Impervious	Pervious							
CN-SWB-001	Bioinfiltration Basin	Heather Ridge Dr.	40.250441	-74.898238	1.03	15.27	15.27	4.88	10.39	1,839.00	264.96	11,727.94	0	10%	80%	70%	8,209.56	Primary
CN-SWB-005	Bioinfiltration Basin	Trowbridge Dr.	40.256868	-74.898918	0.74	15.05	14.84	4.07	10.98	1,839.00	264.96	10,394.11	0	10%	80%	70%	7,275.88	Primary
CN-SWB-009	Bioinfiltration Basin	Leedoms Dr.	40.258867	-74.884404	0.60	17.02	11.93	5.21	11.81	1,839.00	264.96	12,710.96	0	10%	80%	70%	8,897.67	Secondary
CN-SWB-010	Bioinfiltration Basin	Farmview Dr.	40.260852	-74.890771	0.63	11.07	11.07	3.41	7.66	1,839.00	264.96	8,301.17	0	10%	80%	70%	5,810.82	Secondary
CN-SWB-011	Bioinfiltration Basin	Horseshoe Bend	40.250671	-74.884389	1.40	29.84	28.08	9.97	19.87	1,839.00	264.96	23,600.66	0	10%	80%	70%	16,520.46	Primary
CN-SWB-015	Bioinfiltration Basin	Colts Ln.	40.243898	-74.886097	1.04	27.16	20.87	7.48	19.68	1,839.00	264.96	18,970.52	0	10%	80%	70%	13,279.36	Primary
CN-SWB-016	Bioinfiltration Basin	Bridle Estates Dr.	40.239351	-74.889628	1.82	37.92	36.42	14.71	23.21	1,839.00	264.96	33,201.79	0	10%	80%	70%	23,241.25	Primary
CN-SWB-035	Bioinfiltration Basin	Brookfield Rd.	40.252616	-74.883885	1.81	24.02	24.02	8.03	15.99	1,839.00	264.96	19,004.90	0	10%	80%	70%	13,303.43	Primary
CN-SWB-044	Bioinfiltration Basin	Brentwood Rd.	40.247520	-74.881288	0.46	24.25	9.26	8.89	15.36	1,839.00	264.96	20,418.85	0	10%	80%	70%	14,293.19	Primary
CN-SR-047	Stream Restoration	Core Creek	40.252071	-74.900311	2000 LF	-	-	-	-	-	-	-	-	-	44.88 lb/ft/yr	-	89,760.00	Secondary
TOTAL																200,591.63		

Required Load Reduction (lbs/yr)	67,450.01
Primary Project Reduction (lbs/yr)	96,123.14
Primary Project Exceedance (lb/year)	28,673.13

BMP ID	BMP Description	Address	Latitude	Longitude	Size (acre)	Drainage Area (acre)	Drainage Area Ratio* (acre)	TSS Loading Rate		Total TSS Load (lb/yr)	Load from Previous BMP in Series (lb/yr)	Existing BMP Effectiveness	Proposed BMP Effectiveness	Proposed BMP Credited Efficiency	Proposed Annual Reduction (lb/yr)	Designation		
								Impervious Area (Acre)	Pervious Area (Acre)								Impervious	Pervious
MM-SR-022	Stream Restoration	Rock Run	40.208271	-74.839691	2400 LF	-	-	-	-	-	-	-	44.88lb/ft	-	107,712.00	Primary		
MM-SWB-003	Bioinfiltration Basin	Cinnabar Ln.	40.205865	-74.845671	0.92	24.09	18.37	8.12	15.97	1,839.00	264.96	19,163.01	0	10%	80%	70%	13,414.11	Secondary
MM-SWB-005	Bioinfiltration Basin	Country Hills Rd.	40.201518	-74.835067	1.12	26.70	22.37	8.04	18.66	1,839.00	264.96	19,729.71	0	10%	80%	70%	13,810.79	Secondary
MM-SWB-006	Bioinfiltration Basin	Crestview Wy.	40.201713	-74.833470	1.55	29.26	29.26	8.43	20.83	1,839.00	264.96	21,020.70	0	10%	80%	70%	14,714.49	Secondary
MM-SWB-007	Bioinfiltration Basin	Keating Dr.	40.208221	-74.803892	0.66	24.00	13.25	7.38	16.62	1,839.00	264.96	17,974.43	0	10%	80%	70%	12,582.10	Secondary
MM-SWB-008	Bioinfiltration Basin	Lang Ct.	40.210289	-74.843500	1.83	44.46	36.58	13.37	31.09	1,839.00	264.96	32,825.37	0	10%	80%	70%	22,977.76	Secondary
MM-SWB-012	Bioinfiltration Basin	Marble Ct.	40.208638	-74.846944	2.32	21.96	21.96	8.39	13.57	1,839.00	264.96	19,023.74	0	10%	80%	70%	13,316.62	Secondary
MM-SWB-013	Bioinfiltration Basin	Lily Pond Ln.	40.210834	-74.839209	0.58	11.83	11.59	3.87	7.96	1,839.00	264.96	9,226.00	0	10%	80%	70%	6,458.20	Secondary
MM-SWB-014	Bioinfiltration Basin	N. Elbow Ln.	40.206417	-74.835765	0.92	32.46	18.39	9.66	22.80	1,839.00	264.96	23,806.28	0	10%	80%	70%	16,664.40	Secondary
MM-SWB-019	Bioinfiltration Basin	Kent Dr.	40.206595	-74.815840	0.32	3.58	3.58	1.19	2.39	1,839.00	264.96	2,820.61	0	10%	80%	70%	1,974.43	Secondary
MM-SWB-020	Bioinfiltration Basin	Trend Rd.	40.214811	-74.814592	4.71	101.68	94.10	33.40	68.28	1,839.00	264.96	79,514.81	0	10%	80%	70%	55,660.37	Secondary
MM-SWB-021	Bioinfiltration Basin	1204 Pine Grove Rd.	40.211193	-74.801177	2.42	31.19	31.19	5.66	25.53	1,839.00	264.96	17,174.05	0	10%	80%	70%	12,021.83	Secondary
														TOTAL	291,307.09			

Required Load Reduction (lbs/yr)	88,009.03
Primary Project Reduction (lbs/yr)	107,712.00
Primary Project Exceedance (lb/year)	19,702.97

Figure 7: BMP Loading Ratio Justification

CORE CREEK-NESHAMINY CREEK

CN-SWB-001

BMP CN-SWB-001 has a 15:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-001 is residential.

CN-SWB-005

BMP CN-SWB-005 has a 20:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 2002. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-005 is residential.

CN-SWB-009

BMP CN-SWB-009 has a 29:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-009 is residential.

CN-SWB-010

BMP CN-SWB-010 has a 18:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-010 is residential.

CN-SWB-011

BMP CN-SWB-011 has a 21:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 2020. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-011 is residential.

CN-SWB-015

BMP CN-SWB-015 has a 26:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 2002. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-015 is residential.

CN-SWB-016

BMP CN-SWB-016 has a 21:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 2002. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-016 is residential.

CN-SWB-035

BMP CN-SWB-035 has a 13:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-035 is residential.

CN-SWB-044

BMP CN-SWB-044 has a 52:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for CN-SWB-044 is residential.

CN-SR-047

The proposed project is a stream restoration that includes approximately 2,000 linear feet of stream. The stream restoration includes streambank stabilization, rehabilitation of riparian buffers, and reduction of streamflow velocities to prevent further erosion. The land use within the drainage area for CN-SR-047 is rural/residential.

MARTINS CREEK, MILL CREEK-SILVER LAKE, VAN SCIVER LAKE-DELAWARE RIVER

MM-SWB-003

BMP MM-SWB-003 has a 26:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 1999. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-003 is residential.

MM-SWB-005

BMP MM-SWB-005 has a 24:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre- 1999. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-005 is residential.

MM-SWB-006

BMP MM-SWB-006 has a 19:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-006 is residential.

MM-SWB-007

BMP MM-SWB-007 has a 36:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 2003. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The majority of the land use within the drainage area for MM-SWB-007 is residential.

MM-SWB-008

BMP MM-SWB-008 has a 24:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 1999. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-008 is residential.

MM-SWB-012

BMP MM-SWB-012 has a 9:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-012 is residential.

MM-SWB-013

BMP MM-SWB-013 has a 20:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 1999. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-013 is residential.

MM-SWB-014

BMP MM-SWB-014 has a 35:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-014 is residential.

MM-SWB-019

BMP MM-SWB-019 has a 11:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed in 1999. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-019 is residential.

MM-SWB-020

BMP MM-SWB-020 has a 22:1 ratio relating total drainage area to BMP infiltrating area. For calculation in the PRP, the Township limited credit claimed to a 20:1 ratio based upon PADEP suggestion. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-020 is residential.

MM-SWB-021

BMP MM-SWB-021 has a 13:1 ratio relating total drainage area to BMP infiltrating area. The proposed project is a retrofit of an underperforming, existing basin. It is estimated the basin was constructed pre-1995. The retrofit includes forebays, one for each inflow location to hold water prior to discharge to the basin, as well as a modified outlet structure to detain the 2-year, 24-hour storm for infiltration. The basin will also include plantings rather than being a traditional grass basin. The land use within the drainage area for MM-SWB-021 is residential.

MM-SR-022

The proposed project is a stream restoration and floodplain reconnection that includes approximately 2,400 linear feet of stream. The stream restoration includes streambank stabilization, rehabilitation of riparian buffers, and reduction of streamflow velocities to prevent further erosion. The floodplain reconnection includes re-grading the overbank areas and restoration of riparian buffer zones to an adequate width. The land use within the drainage area for MM-SR-022 is rural/residential.

Figure 8: PRP Mapping

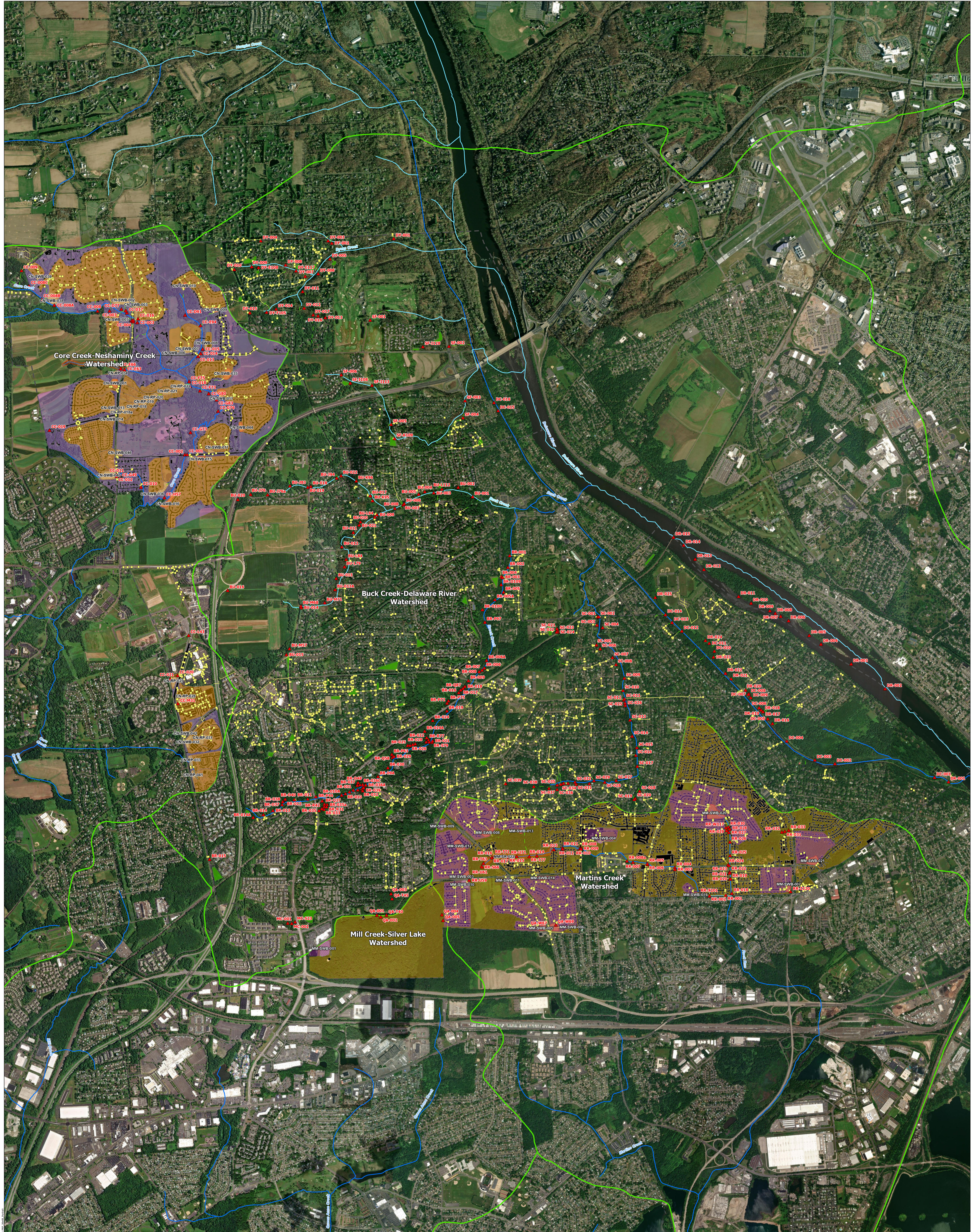


Figure 9: PRP Amendment Description

The Township's original PRP received DEP approval on January 2, 2022. The original PRP proposed thirteen various projects to meet the sediment reduction goal. The Township decided to revise the original PRP since the previous PRP did not combine the Martins Creek and Mill Creek watersheds. The Township also decided to include a floodplain restoration/stream restoration project after guidance regarding the next permit term was released. Additional information on each project is provided on the table below:

Table 6: Original PRP Project Details	
Project	Comments
Charles Boehm Middle School Stream Restoration	Project location does not provide enough room for 70 feet of buffer. Project requires removal of baseball fields.
Bridle Estates Dr. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Wyngate Dr. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Horseshoe Bend Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects. Project site is hard to access.
Greenbriar Ct. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects. Project site is hard to access.
Brentwood Rd. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Trowbridge Dr. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Leedoms Dr. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Dawn Ln. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Crestview Wy. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
W. Ferry Rd. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Lang Ct. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Bluestone Dr. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Palmer Farm Dr. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects. Existing basin is wet pond.
The Dam Basin Retrofit	Could not locate project based on information from original PRP. More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Beechdrop Ct. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Trend Rd. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Garden Ridge Cir. Basin Retrofit	More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.
Pervious Pavement	Proposed project maintenance is not practical. More feasible projects are available. Does not provide as much sediment reduction credit as other proposed projects.

Figure 10: PADEP Pollutant Aggregation Suggestions for MS4 Municipal Requirements Table

MS4 Name	Permit Number	HUC 12 Name	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)
Bucks County				
LANGHORNE MANOR BORO	PAG130044	Mill Creek-Silver Lake	Magnolia Lake, Mill Creek, Silver Lake	Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids
		Core Creek-Neshaminy Creek	Neshaminy Creek, Neshaminy Creek TMDL	Appendix B-Pathogens, Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids, TMDL Plan-Siltation, Suspended Solids
LOWER MAKEFIELD TWP	PAG130011	Buck Creek-Delaware River	Delaware River	Appendix C-PCB
		Core Creek-Neshaminy Creek	Core Creek, Lake Luxembourg, Neshaminy Creek	Appendix B-Pathogens, Appendix E-Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids
		Martins Creek, Mill Creek-Silver Lake, Van Sciver Lake-Delaware River	Martins Creek, Mill Creek, Queen Anne Creek, Rock Run, Unnamed Tributaries to Mill Creek	Appendix E-Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids
		Burlington Island-Delaware River, Van Sciver Lake-Delaware River	Delaware River, Martins Creek	Appendix C-PCB
LOWER SOUTHAMPTON TWP	PAG130030	Core Creek-Neshaminy Creek, Ironworks Creek-Mill Creek	Neshaminy Creek TMDL	TMDL Plan-Siltation, Suspended Solids
		Core Creek-Neshaminy Creek	Neshaminy Creek	Appendix B-Pathogens, Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O.
		Poquessing Creek	Poquessing Creek	Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O.
		Swede Run-Delaware River	Poquessing Creek	Appendix C-PCB
MIDDLETOWN TWP	PAG130028	Burlington Island-Delaware River	Neshaminy Creek, Neshaminy Creek TMDL	Appendix B-Pathogens, TMDL Plan-Siltation, Suspended Solids
		Core Creek-Neshaminy Creek	Lake Luxembourg, Neshaminy Creek, Neshaminy Creek TMDL	Appendix B-Pathogens, Appendix C-PCB, Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids, TMDL Plan-Siltation, Suspended Solids
		Burlington Island-Delaware River, Mill Creek-Silver Lake	Delaware River, Mill Creek, Neshaminy Creek	Appendix C-PCB
		Mill Creek-Silver Lake	Magnolia Lake, Mill Creek, Queen Anne Creek, Silver Lake	Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids
		Swede Run-Delaware River	Delaware River	Appendix C-PCB
MILFORD TWP	PAI130022	Upper Tohickon Creek	Beaver Run, Morgan Creek, Tohickon Creek	Appendix E-Nutrients, Siltation
		Unami Creek	Unnamed Tributaries to Unami Creek	Appendix E-Nutrients, Siltation
MORRISVILLE BORO	PAG130104	Buck Creek-Delaware River	Delaware River	Appendix C-PCB
		Martins Creek, Van Sciver Lake-Delaware River	Martins Creek, Rock Run	Appendix E-Siltation
		Van Sciver Lake-Delaware River	Delaware River, Martins Creek	Appendix C-PCB
NEW BRITAIN BORO	PAG130154	Cooks Run-Neshaminy Creek, West Branch Neshaminy Creek	Neshaminy Creek	Appendix B-Pathogens
		Cooks Run-Neshaminy Creek, North Branch Neshaminy Creek, West Branch Neshaminy Creek	Cooks Run, Neshaminy Creek, Neshaminy Creek TMDL, Pine Run	Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O., TMDL Plan-Siltation, Suspended Solids