



MIDDLETOWN BOROUGH

Dauphin County, Pennsylvania

Chesapeake Bay Pollutant Reduction Plan

Amendment 1

February 2023

HRG Project No. R000516.0437

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

Chesapeake Bay Pollution Reduction Plan

MIDDLETOWN BOROUGH

DAUPHIN COUNTY, PENNSYLVANIA

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INTRODUCTION

Middletown Borough discharges stormwater to surface waters located within the Chesapeake Bay Watershed and is therefore regulated by a PAG-13 General Permit, Appendix D (nutrients and sediment in stormwater discharges to waters in the Chesapeake Bay watershed). The Borough also has watershed impairments regulated by PAG-13 General Permit, Appendix E (nutrients and/or sediment in stormwater discharges to impaired waterways). This Chesapeake Bay Pollutant Reduction Plan (CBPRP) was developed in accordance with both PAG-13 requirements and documents how the Borough intends to achieve the pollutant reduction requirements listed in the Pennsylvania Department of Environmental Protection (PADEP) Municipal MS4 Requirements Table¹.

This document was prepared following the guidance provided in the PADEP National Pollutant Discharges Elimination System (NPDES) Stormwater Discharges from Small Municipal Separate Storm Sewer Systems Pollutant Reduction Plan (PRP) Instructions².

General Information	
Permittee Name: Middletown Borough	NPDES Permit No.: PAG133645
Mailing Address: 60 W Emaus Street	Effective Date: March 16, 2018
City, State, Zip: Middletown, PA 17057-1407	Expiration Date: March 16, 2025
MS4 Contact Person: Ken Klinepeter	Renewal Due Date: Sept 16, 2024
Title: Borough Manager	Municipality: Middletown Borough
Phone: (717) 902-0706	County: Dauphin
Email: kklinepeter@middletownborough.com	Consultant Name: Herbert, Rowland & Grubic, Inc.
Co-Permittees (if applicable): N/A	Consultant Contact: Joshua Sheetz, P.E. 369 East Park Drive Harrisburg, PA 17109 (717) 564-1121

Middletown Borough is a small MS4 community that started its second permit term in March 2018. According to the United States Census Bureau's 2010 census, all of the Borough's 1,309 acres are classified as urbanized area (UA).

The majority of the Borough is located within the Swatara Creek-Susquehanna River Watershed, with a small portion of the southwestern corner of the Borough located within the Laurel Run-Susquehanna River Watershed. The Laurel Run-Susquehanna River has been classified as impaired by PADEP. The Pollution Reduction Plan (PRP) requirements for this impaired watershed are included as part of this CBPRP.

¹ PADEP, MS4 Requirements Table (Municipal) (rev. 5/9/2017)

² PADEP PRP Instructions; Document # 3800-PM-BCW0100k (rev. 3/2017)

SUMMARY OF PROPOSED AMENDMENTS

All proposed amendments are included in the following pages. They have been structured so that once approved, they can fully replace the equivalent section, figure, or table in the original PRP. The original PRP is included at the end of this list for the sake of comparison, though no other changes other than the following amendments are proposed.

Section A: Public Participation

Amended to meet the requirements for public comment on the Amendment 1 portion of the Chesapeake Bay Pollutant Reduction Plan.

Section B: Mapping

No amendments proposed.

Section C: Pollutants of Concern

No amendments proposed.

Section D: Determine Existing Loading for Pollutants of Concern

No amendments proposed.

Section E: BMPs to Achieve Required Pollutant Load Reductions

Amended to show updated proposed BMPs.

Section F: Identify Funding Mechanisms

No amendments proposed.

Section G: BMP Operation and Maintenance (O&M)

Amended to show updated O&M plans.

Appendix A: Public Participation Documentation

Amended to display updated documentation of public participation for Amendment 1.

Appendix B: Mapping

Amended to show updated proposed BMP locations.

Appendix C: PADEP Municipal MS4 Requirements Table

No amendments proposed.

Appendix D: Existing Pollutant Loading Calculations

No amendments proposed.

Appendix E: Proposed BMP Pollutant Load Reduction Calculations

Amended to show updated proposed BMP load reduction calculations.

Appendix F: Intergovernmental Agreement

New section added to show details of WREP Program and Agreement between Middletown borough and Dauphin County.

SECTION A: PUBLIC PARTICIPATION

A complete copy of this CBPRP addendum was made available for the public to review at the Middletown Borough municipal office from February 14, 2023 to March 16, 2023. The availability of the document was publicized on the Borough's website and in *The Patriot News* on February 14, 2023. The published public notice contained a brief description of the plan, the dates and locations at which the plan was available for review by the public, and the length of time provided for the receipt of comments. Public comments were accepted for 30 days following the publication date of the public notice.

The public notice (newspaper and municipal website post), public comment and response, and public meeting presentation are included in Appendix A.

SECTION E: BMPS TO ACHIEVE THE REQUIRED POLLUTANT LOAD REDUCTIONS

E.1 Required Pollutant Load Reduction Calculation

No proposed changes for this section.

E.2 Proposed BMPs

The following section outlines the BMP implementation strategy developed to achieve the required pollutant load reduction goals stated in Section E.1. The proposed BMPs were determined through discussions with the public works employees and municipal staff, in-field site assessments, and public outreach meetings.

The proposed strategy (Table 6) consists of Middletown Borough's partnership with the Dauphin County WREP Program. As part of the WREP Program, a joint stream restoration project will be completed on the Conewago Creek in Londonderry Township to meet the pollutant load reduction requirements for the planning area. The pollutant loading reduction for these BMPs were calculated in terms of pounds per year using Master Stream Restoration Crediting Guide³. Complete calculations for the anticipated pollutant load reductions for each of the BMPs listed below is provided in Appendix E.

Table 6: BMP Strategy Summary

Site	BMP ID	BMP Type	Planning Area	Drainage Area (acres)	Length (ft)	Load Reduction TSS (lbs/yr)
WREP Program (Londonderry Township)	BMP-1	Conewago Creek Stream Restoration (Including Brills Run)	CBPRP	n/a	6,382	80,568
Total						80,568

E.3 BMP Project Descriptions

As one of the oldest communities in Dauphin County, Middletown Borough's roadway and utility infrastructure is ageing and being incrementally repaired and updated as needed. It is anticipated that during the permit term, other municipal infrastructure projects will arise. As the Borough understands the importance of stormwater management, any large-scale infrastructure improvement projects that come up will be evaluated to determine if there is the potential to incorporate green infrastructure or other stormwater improvements into the project. If the opportunity becomes available to meet the pollutant load reduction goals of this plan through modifications or expansions to other infrastructure projects, rather than through the stand alone BMPs described below, the municipality may choose to do so. If this route of meeting the pollutant load reduction requirements is chosen, all plans, details, and associated pollutant load reduction calculations for the new project will be included in future Annual Status Reports.

WREP Program/Conewago Creek Stream Restoration – This project proposes a partnership with the Dauphin County WREP Program and consists of a stream and floodplain restoration along 4,960-LF of the Conewago Creek and 1,422-LF of the tributary Brills Run. The restoration originates immediately downstream of the Hertzler Rd bridge on Brills Run, and approximately 3,500-LF downstream of the Mill Rd bridge on the

³ A Unified Guide for Crediting Stream and Floodplain Restoration Projects in the Chesapeake Bay Watershed (Wood, Schueler and Stack, 2021).

mainstem. The restoration continues through the Brills Run-Conewago Creek confluence and downstream through an existing farm bridge to its terminus approximately 750-LF upstream of the PA-230 bridge.

The purpose of this project is to restore Conewago Creek, Brills Run, the associated floodplain, and existing wetland system as close as possible to historical pre-settlement conditions by removing legacy sediment from the floodplain. The stream restoration will include both structural repairs (as needed), in-stream calming measures (rock vanes, wing deflectors, etc.) to decrease water velocity and direct stream flow away from eroding streambanks. The structures will be constructed of natural materials such as rock, root wads, and logs. If needed, additional plantings will be added to areas in which the existing riparian buffer is in poor condition. Buffer rehabilitation will include the removal and replacement of dead and diseased vegetation, as well as the addition of new plantings to provide further streambank stabilization. The exact number and locations for structural and in-stream structures, and riparian planting areas will be determined during engineering design of the project.

E.4 Other Reportable BMPs

Stormwater Inlet Cleaning - As part of on-going maintenance, the Borough routinely removes solids from their MS4s. However, at this time, no pollutant reduction has been allotted to storm sewer system solids removal because tracking of this removed material has not been to the degree required to accurately calculate the pollutant load reduction as described in the PADEP BMP effectiveness values. It is anticipated that as more detailed tracking of solids removed during routine maintenance occurs, this information may be used towards achieving the Borough's pollutant load reduction goals. Any solids removal tracking information that is obtained will be included in the Annual MS4 Status Reports.

Table 7: BMP Implementation Schedule

Site	BMP ID	BMP Type	Permitting & Engineering Design (Permit Year)	Construction/ Reporting (Permit Year)
WREP Program (Londonderry Township)	BMP-1	Conewago Creek Stream Restoration (Including Brills Run)	2/3	4/5
Stormwater Inlet Cleaning	n/a	Solids Removal	n/a	All

SECTION G: BMP OPERATIONS AND MAINTENANCE (O&M)

Through the Intergovernmental Cooperation Agreement (Appendix F) between Middletown Borough and Dauphin County, all perpetual long-term maintenance of the stream restoration will be completed by Londonderry Township. Middletown Borough has no responsibility for long-term O&M for the Conewago Creek Restoration Project.

APPENDIX A

Public Participation Documentation

NOTICE OF PUBLIC PARTICIPATION AND PUBLIC MEETING FOR CHESAPEAKE BAY POLLUTANT REDUCTION PLAN AMENDMENT

February 9, 2023 | Posted in: [Uncategorized](#)

Middletown Borough hereby gives notice of the 30-day public comment period for its National Pollutant Discharge Elimination (NPDES) Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) Pollutant Reduction Plan (PRP). Best management practices (BMPs) are proposed in the Plan to satisfy PRP requirements for the NPDES Permit and local stream impairments.

The public is invited to review this document and provide written comments to the Borough Secretary: Grace Miller, 60 W Emaus St, Middletown, PA 17057; Email: gmiller1@middletownborough.com

The 30-day public comment period begins February 14, 2023 and ends March 16, 2023.

The Plan will be discussed during the regularly scheduled municipal meeting on March 7, 2023 starting at 7:00 p.m. at the municipal building.

[2023.02.09 Middletown PRP Addendum – Public Review](#)

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Promo Type				Payment Amount	\$0.00
Materials				Amount Due	\$167.45
Invoice Text					

Ad Schedule

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External Ad #		Color	<NONE>
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02/14/2023			

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External Ad #		Color	<NONE>
Production Method	AdBooker	Production Notes	
Run Dates	Sort Text	NOTIC2500MIDDLETOWNBOROUGHHEREBYGIVESNOTICEOFTHEAYPUBLICC	
02/14/2023			

Ad Content Proof

NOTICE

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The public is invited to review this document and provide written comments to the Borough Secretary: Grace Miller, 60 W Emaus St, Middletown, PA 17057; Email: gmliller1@middletownborough.com

The 30-day public comment period begins February 14, 2023 and ends March 16, 2023. On March 7, 2023 at 7:00 p.m. the Council of the Borough of Middletown, Dauphin County, Pennsylvania will hold a public hearing on the proposed addendum to receive verbal comments.

The Plan will be available on the Borough website (<https://middletownborough.com>) and at the Borough Municipal Building.

Page to be Replaced with public meeting agenda and minutes

PUBLIC COMMENTS

Written:

1. Written Public Comments to be added.
 - a. Response to Comments to be added.

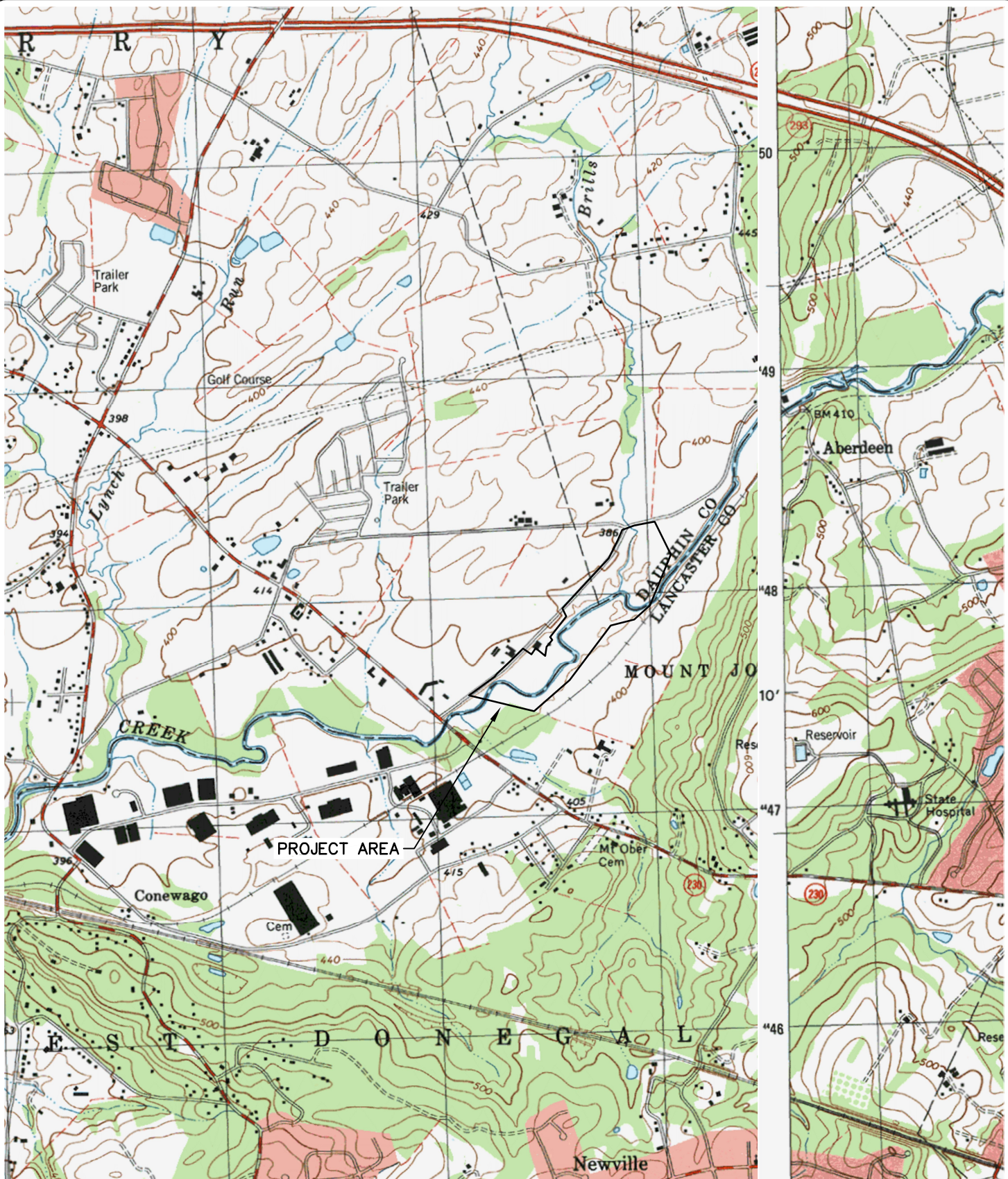
Verbal:

1. Verbal Public Comments to be added
 - a. Response to Comments to be added.

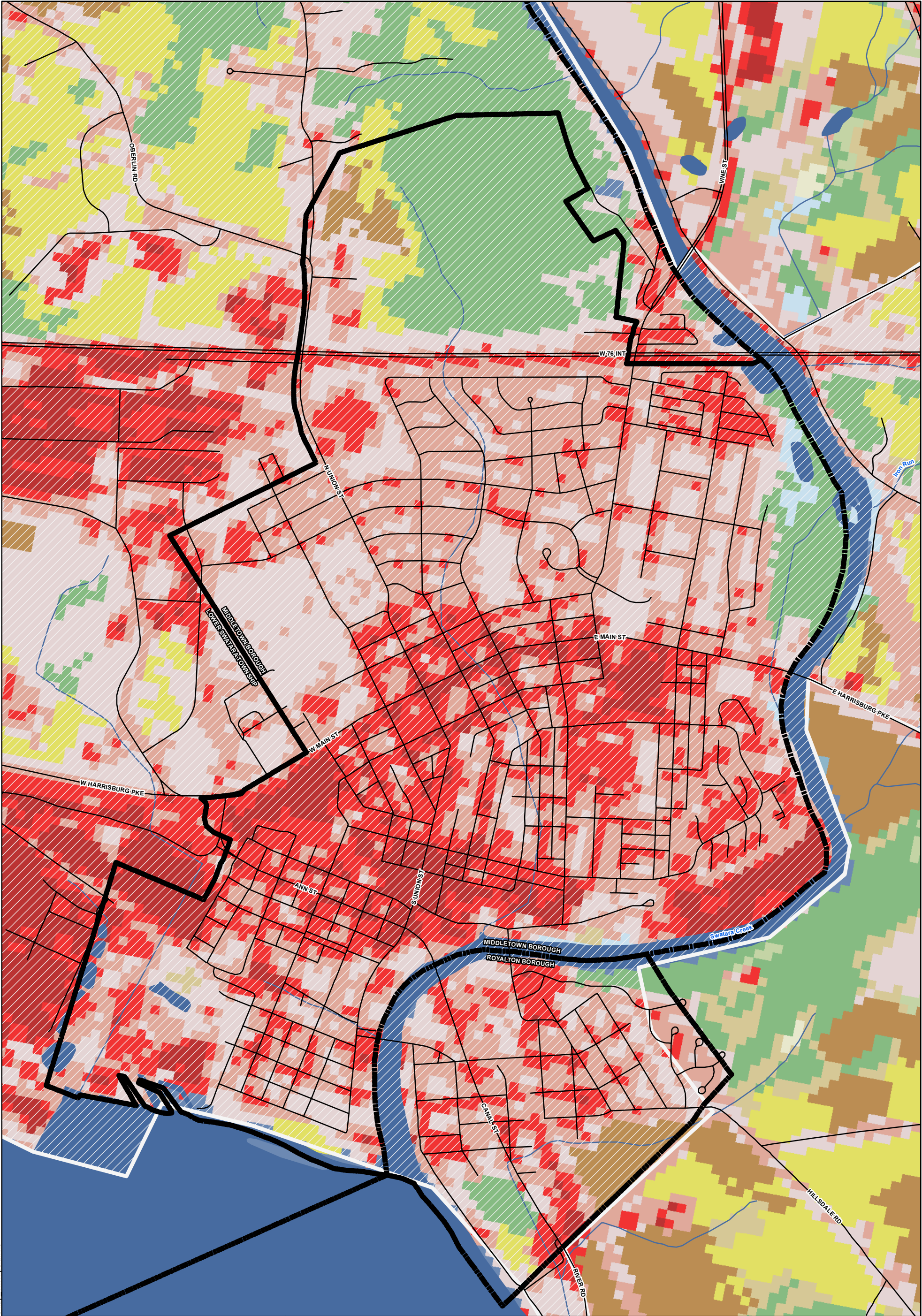
APPENDIX B


Mapping





USGS QUADMAP: MIDDLETOWN/ELIZABETH TOWN





1,00001,000 Feet

Mapping derived from data provided by Dauphin County, USGS, US Census, and MRLC.


5/5/2017

PM: EGL

GIS: BLS/HMG


QA: HSH

R000257.0439



Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
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369 East Park Drive
Harrisburg, PA 17111
717.564.1121 [phone]
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- | | | |
|--|---|--|
|  Road |  Developed, Medium Intensity |  Shrub/Scrub |
|  Municipal Boundary |  Developed, High Intensity |  Grassland/Herbaceous |
|  Open Water |  Barren Land (Rock/Sand/Clay) |  Pasture/Hay |
|  Developed, Open Space |  Deciduous Forest |  Cultivated Crops |
|  Developed, Low Intensity |  Mixed Forest |  Woody Wetlands |
| | |  Emergent Herbaceous Wetlands |
| | |  Urban Areas (2010) |

Land Use Map
Middletown Borough
Dauphin County, Pennsylvania

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APPENDIX E

Proposed BMP Pollutant Load Reduction Calculations

Appendix E – Table 1: Proposed BMPs

Site	BMP ID	BMP Type	Planning Area	Lat	Long	Drainage Area (acres)	Length (ft)	Drainage Area Characteristics				Loading Rate TSS* (lbs/ac/yr)		Total Load TSS (lbs/yr)	BMP Effectiveness **	Pollutant Load Reduction TSS (lb/yr)
								% Imperv.	Imperv. (acres)	% Perv.	Perv. (acres)	Imperv.	Perv.			
WREP Program (Londonderry Township)	BMP-1	Conewago Creek Stream Restoration (Including Brills Run)	CBPRP	40.16754	-76.638351	n/a	6,382	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Reference Londonderry Township's PRP	80,568
Total																80,568

*PADEP - Statewide MS4 Land Cover Estimates
**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties
***PADEP – BMP Effectiveness Values

APPENDIX F

Letter to PADEP Regarding Eligibility for Joint Project.

Intergovernmental Cooperation Agreement between Middletown Borough and Dauphin County.

December 19, 2022

Mr. Scott Arwood
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110

Re: Conewago Creek Restoration Project Partnerships
Dauphin County Water Resource Enhancement Program (WREP)

Dear Mr. Arwood:

Chesapeake Bay Pollutant Reduction Plan (CBPRP) implementation has been challenging for municipalities to afford or logistically complete in the Lower Susquehanna watershed. Over the previous years, municipalities have completed field evaluations, desktop analysis, and explored partnership opportunities to meet the 10% Total Suspended Solids (TSS) reduction goals. Despite continued efforts, many municipalities have been unable to find project locations that can meet these goals in a way that meet site and budget constraints.

The Conewago Creek Restoration Project proposed by Londonderry Township provides a significant excess of TSS reduction and a unique opportunity for partnership. Dauphin County has recently established a Water Resource Enhancement Program (WREP) to provide the framework for partnership associated with this project. Currently, the following municipalities are expected to partner on this project via the WREP program:

- > Lower Swatara Township
- > New Cumberland Borough
- > Middletown Borough
- > Steelton Borough

In addition to the White Paper provided to you on January 4, 2022, regarding Steelton Borough's eligibility to partner on this project, we respectfully request that you consider the following information which demonstrates a watershed approach for the partnership.

PROXIMITY EVALUATION

Neighboring HUC 12 Watersheds

An evaluation of neighboring HUC 12 watersheds demonstrated that the following watersheds bordered the Laurel Run-Susquehanna River HUC 12 watershed which includes a significant portion of both Lower Swatara Township and New Cumberland Borough, additionally the Southwestern portion of Middletown Borough (as highlighted on the attached map):

- > Bennett Run-Conewago Creek (York County)
- > Salem Run-Fishing Creek (York County)
- > Conodoguinet Creek-Susquehanna River (Cumberland County)
- > Lower Yellow Breeches Creek (York and Cumberland Counties)
- > Cove Creek-Susquehanna River (multiple upstream counties)
- > Paxton Creek (Dauphin County)
- > Spring Creek (Dauphin County)
- > Iron Run - Swatara Creek (Dauphin County)

- > Conewago Creek (Dauphin County)
- > Hartman Run-Susquehanna River (multiple downstream counties)

The portions of Lower Swatara Township and Middletown Borough that are not within the Laurel Run-Susquehanna River watershed are located within the Iron Run-Swatara Creek Watershed. The portion of New Cumberland Borough outside of the Laurel Run-Susquehanna River Watershed is located within the Lower Yellow Breeches Creek Watershed.

As shown on the attached Watershed Map, the sediment load from Lower Swatara Township, Middletown Borough, and New Cumberland Borough will flow to the same discharge point for the Conewago Creek HUC 12 within the same Laurel Run-Susquehanna River HUC 12. So, the sediment load from the Conewago Creek HUC 12 will influence the same receiving Susquehanna River segment as Lower Swatara Township, Middletown Borough, and New Cumberland Borough.

SUMMARY

Lower Swatara Township, Middletown Borough, and New Cumberland Borough have done their due diligence regarding CBPRP implementation challenges and suitable alternatives, and a more innovative solution to meeting water quality goals is necessary for the municipalities to meet their MS4 permit obligations. Therefore, this joint project is being proposed with Londonderry Township via the Dauphin County WREP Program. The Conewago Creek Stream Restoration project has an opportunity to decrease sediment loading into a shared waterway, the Susquehanna River, that exceeds the municipalities' combined requirements under their CBPRPs. This project is also currently in construction, with approximately 60% of the project completed and the remaining portion anticipated to be completed in early 2023.

We recognize that an intergovernmental cooperative agreement, or its equivalent, will be required to be submitted to PADEP. The Dauphin County WREP Program outlines the sediment reduction commitment, cost, and long-term operation and maintenance responsibilities for each party. Once all agreement documentation between these partners and the County are signed, they will be provided to PADEP as part of the annual report.

It is respectfully requested that you allow the Lower Swatara Township, Middletown Borough, and New Cumberland Borough to partner with Londonderry Township via Dauphin County WREP to meet the sediment reduction requirements for this permit term. To avoid additional timeline constraints, a timely response is greatly appreciated.

Sincerely,

HERBERT, ROWLAND & GRUBIC, INC.



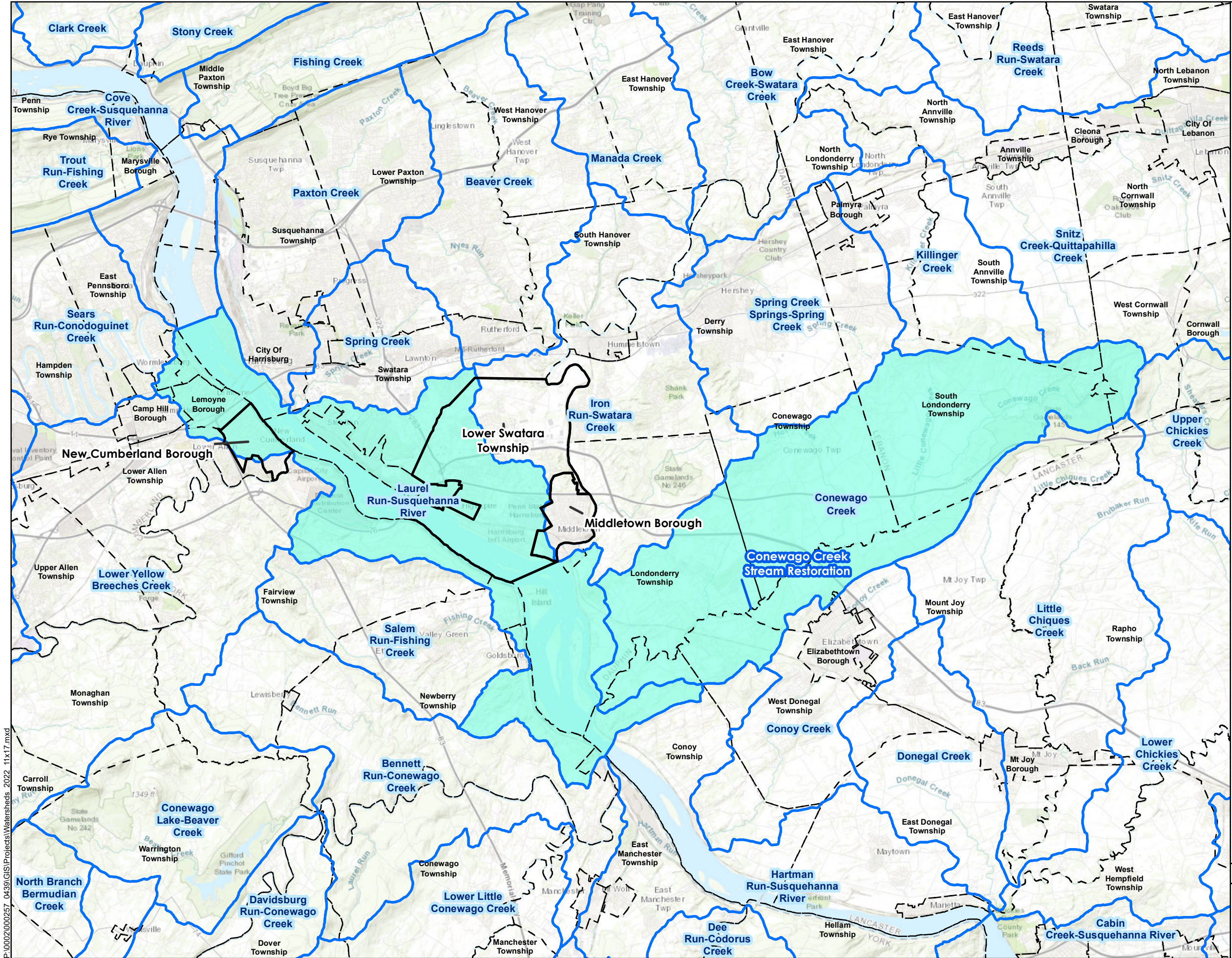
Shawn E. Fabian, CPESC, CPSWQ
Project Manager

TME/SEF/pk
R001068.0521

P:\0010\001068_0521\Admin\Grant Administration\WREP-PADEP Coordination for New Partners\WREP Justification Letter.docx

Enclosures (Watershed Map)

- c: File
- Shawn Fabian – HRG (via e-mail)
 - Adrienne Vicari – HRG (via e-mail)
 - Erin Letavic – HRG (via e-mail)
 - Randy Watts – HRG (via e-mail)
 - Joshua Sheetz – HRG (via e-mail)
 - Jacob Rakowsky, Environmental Engineering Specialist – PADEP (via e-mail)
 - Leah Staley, Civil Engineer Trainee - PADEP (via e-mail)


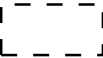


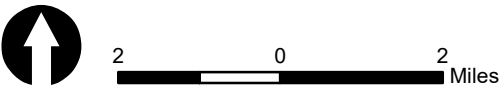
Watershed Map

Lower Swatara Township
Dauphin County, Pennsylvania

Middletown Borough
Dauphin County, Pennsylvania

New Cumberland Borough
Cumberland County, Pennsylvania

-  HUC 12 Watershed Boundary
-  Municipal Boundary



Mapping derived from data provided by PASDA & ESRI.

12/13/2022 | PM: SEF | GIS: MSM | QA: TME | R000257.0439



369 East Park Drive
Harrisburg, PA 17111
717.564.1121 [phone]
717.564.1158 [fax]
www.hrg-inc.com

Lm 12/14/2022
RAM

**INTERGOVERNMENTAL COOPERATION AGREEMENT
FOR THE CREATION AND IMPLEMENTATION OF THE DAUPHIN COUNTY
REGIONAL WATER RESOURCE ENHANCEMENT PROGRAM**

This **AGREEMENT** is made this 14 day of December, 2022 pursuant to the Pennsylvania Intergovernmental Cooperation Act, 53 Pa.C.S.A. § 2301, *et. seq.*, (hereinafter referred to as the "Agreement") by and between the County of Dauphin, Pennsylvania (hereinafter referred to as "Dauphin County"), a County of the third class having its principal office at the Office of the County Commissioners, 4th floor, Dauphin County Administration Building, 2 South Second Street, Harrisburg, Pennsylvania 17101, and all of the local governments (hereinafter collectively referred to as "Municipalities" or "Participants" or singularly as "Municipality" or "Party") properly executing this Intergovernmental Cooperation Agreement (together hereinafter referred to as the "Parties"), jointly, for the implementation of a regional stormwater management program to for the improvement of watercourses in the County of Dauphin and its associated watersheds.

WITNESSETH

WHEREAS, the Pennsylvania Intergovernmental Cooperation Act, 53 Pa.C.S.A. § 2301, *et. seq.*, authorizes two or more "local governments" and certain Municipal Authorities in this Commonwealth to jointly cooperate in the exercise or in the performance of their respective governmental functions, powers or responsibilities, 53 Pa.C.S.A. § 2303(a), and pursuant to 53 Pa.C.S.A. § 2303(b) to enter into a written agreement for intergovernmental cooperation with, or delegate any functions, powers or responsibilities to, another local government upon the passage of an ordinance or resolution by its governing body; and

WHEREAS, the Parties hereto are defined by the Intergovernmental Cooperation Act as "local governments", 53 Pa.C.S.A. § 2302; or an Authority eligible to participate in intergovernmental cooperation, 53 Pa.C.S.A. § 2305(b); and

WHEREAS, the Parties have a mutual public interest in working together in a cooperative manner to manage stormwater and improve water quality including regional stormwater infrastructure projects, implementation of Regional Plans which identify and fund cost effective best management practices (hereinafter referred to as "BMP(s)"), and flood mitigation, to reduce the annual amount of nitrogen, phosphorous and sediment entering impaired and non-impaired surface waters in Dauphin County, Pennsylvania as efficiently as possible, to work together in a cooperative manner to reduce flooding, and achieve the objectives set forth in this Agreement; and

WHEREAS, water quality and stormwater management were identified as Dauphin County priority issues in the 2017 Dauphin County Comprehensive Plan, and

WHEREAS, Pennsylvania is under pressure from its Chesapeake Bay Agreement partners to implement its Phase 3 Watershed Implementation Plan (Phase 3 WIP) by 2025, and Dauphin County has developed and is implementing a Countywide Action Plan, which will further Pennsylvania's overall nutrient reduction progress; and

WHEREAS, Municipalities that hold a Pennsylvania Department of Environmental Protection (hereinafter referred to as "DEP") Municipal Separate Storm Sewer System (hereinafter referred to

as “MS4”) Permit (regarding stormwater discharges) within the Chesapeake Bay watershed are required to prepare and implement a Chesapeake Bay Pollutant Reduction Plan for the current permit term and it is anticipated similar Plans will be required for future permit cycles; and

WHEREAS, a new MS4 permit term is expected to commence in 2023 and may impose additional requirements on municipalities, especially with respect to nutrients (nitrogen and phosphorus); and

WHEREAS, certain BMPs are designed to control stormwater and improve water quality, and are required to be implemented as part of a pollutant reduction plan; and

WHEREAS, MS4 Municipalities are required to comply with certain stormwater related Minimum Control Measures (hereinafter referred to as “MCM”) as mandated by law; and

WHEREAS, Projects and MCM work require capital expenditures, in some cases, significant capital expenditures; and

WHEREAS, the mileage of impaired streams within Dauphin County remains relatively unchanged despite many individual initiatives; and

WHEREAS, a majority of municipalities who participated in County-led outreach activities in 2019 and 2020 indicated an interest in a regional stormwater solution that tackles water quality, MS4 compliance, stream restoration, infrastructure resilience, flood mitigation; and

WHEREAS, the Parties anticipate that municipal cooperation will produce higher quality results at a reduced per participant cost; and

WHEREAS, by fostering a collaborative approach in advance of new MS4 permit and Countywide Action Plan implementation, the participating municipalities will be positioned to cost effectively comply while improving grant program success; and

WHEREAS, regional water quality improvements can be designed to improve localized flooding; and

WHEREAS, stormwater flooding has impacted properties throughout the County and Municipalities realize regional Flood Mitigation Projects can help to minimize the occurrence and extent of flooding; and

WHEREAS, Municipalities remain committed to enforcing their individual stormwater ordinances and accompanying obligations, and complying with their MS4 permit requirements, as applicable, and are interested in solutions that can increase their level of service and/or decrease their level of stormwater funding (through taxes or fees); and

WHEREAS, it is recognized that cost drivers associated with flooding, water quality and MS4 permit compliance correlate to a municipality’s urbanized area (designated through the U.S. Census Bureau), non-urbanized area, and pollutant reductions required by the existing and future MS4 permit; and

WHEREAS, existing and future permit compliance costs can be estimated according to publicly available models, which regulators use to develop future permit requirements; and

WHEREAS, Dauphin County has developed a regional water resource enhancement program that is flexible so that it continually meets the needs of the Parties; and

WHEREAS, the Parties desire to cooperate to effectuate the cost-effective installation, operation, and maintenance of certain Projects to accomplish annual reduction(s) of nitrogen, phosphorous and sediment discharges into surface waters in the Dauphin County region; and

WHEREAS, Municipalities desire that Dauphin County will engage in stormwater management activities and provide assistance including facilitating the development and implementation of Regional Chesapeake Bay Pollution Reduction Plans for future permit cycles and the Countywide Action Plan ("Regional Plans"), along with the creation, operation, and maintenance of certain BMPs on behalf of the Participants as more specifically set forth herein; and

WHEREAS, as set forth in this Agreement, all Municipalities shall share in the cost to develop and implement the Regional Plans and BMPs through financial contributions as set forth in this Agreement in accordance with 53 P.S. § 2862; and

WHEREAS, the Municipalities desire to coordinate and cooperate with Dauphin County in efforts to plan, implement, fund, and operate certain water resource-related services at a regional level; and

WHEREAS, Dauphin County shall, with the Municipalities, develop new stormwater and water quality BMP Projects, including stormwater infrastructure construction and improvements, (individually referred to as a "BMP Project" or collectively "BMP Projects") to be identified in future Regional Plans and will fund the cost of doing so, along with providing the Municipalities with the related MS4 Permit administration information, through funds received annually from participating Municipalities consistent with this Agreement; and

WHEREAS, it is intended that Municipalities holding an MS4 Permit report the pollutant reductions achieved by construction of the Projects and that such pollutant reductions may be reported in each Municipality's MS4 Annual Status Report to DEP in accordance with the approved Regional Plans; and

WHEREAS, the content of the Regional Plans, including Project selection and the level of funding for Projects and other regional stormwater management program efforts, shall be determined as set forth herein; and

WHEREAS, the purpose of this Agreement is to set forth the understanding of the Participants as to how, *inter alia*, the Participants will cooperate to create and revise the Regional Plans, manage Projects throughout Dauphin County, interact with the regulatory agencies regarding MS4 permit requirements, implementation of the Regional Plans, and the obligations of each Municipality and Dauphin County; and

WHEREAS, the Participants agree and acknowledge that nothing in this Agreement or the resultant actions therefrom, shall prohibit, prevent, or interfere with any Participant's ability or obligation to

comply with applicable Pennsylvania law and regulation, Federal law and regulation, applicable regulatory agency rules and policies, permit requirements, DEP directives, or United States Environmental Protection Agency (hereinafter referred to as "EPA") directives, and local ordinances; and

WHEREAS, the Parties hereto believe that a regional approach to water resource management will result in significant cost savings through economies of scale, elimination of redundancy, and increased effectiveness of larger regional BMPs, and that such savings should be returned to the taxpayers or rate-payers in the form of reduced rates or enhanced investment in local infrastructure.

NOW, THEREFORE, the Parties hereto, in consideration of the mutual promises, covenants, and undertakings herein contained, each binding itself and representing that each has proper legal authority to enter into this Intergovernmental Cooperation Agreement, and intending to be legally bound, agree as follows:

ARTICLE I

Background and Definitions

1.01 Recitals.

The above recitals are incorporated herein by reference.

1.02 Definitions.

For purposes of this Agreement, the terms and phrases defined in this Section shall have the following meanings unless the context clearly otherwise requires:

"Administrative Expenses" shall mean the ordinary and usual expenses included in the general costs necessary to manage this Agreement.

"Authority" shall mean a governmental body created pursuant to the Pennsylvania Municipality Authorities Act, 53 Pa.C.S.A. § 5601, *et. seq.*, to finance and/or operate specific public works projects without using the general taxing powers of the municipality.

"Best Management Practices (BMP)" shall mean structural (including but not limited to the devices listed in the Pennsylvania Stormwater Best Management Practices Manual) and non-structural (design standards and planning concepts) items used to control the volume, rate and water quality of post construction stormwater runoff so as to protect and maintain the chemical, physical and biological properties of waters of the Commonwealth. BMP's must, at a minimum, protect and maintain water resources, preserve water supplies, maintain stream base flows, preserve and restore the flood carrying capacity of waters, preserve to the maximum extent practicable the natural stormwater runoff regimes and natural course, current and cross section of waters of the Commonwealth, and/or protect and conserve ground water and ground-water recharge areas.

"Chesapeake Bay Agreement" shall mean the Chesapeake Watershed Agreement of June 16, 2014, as amended January 24, 2020, for the restoration and protection of the Chesapeake Bay.

"Commonwealth" shall mean the Commonwealth of Pennsylvania.

“Consulting engineers” shall mean licensed experts in the fields of planning, design, and construction of public and private infrastructure.

“County Commissioners” shall mean the Board of Commissioners of the County of Dauphin.

“Flood Mitigation Projects” shall mean local level drainage and flood control projects that improve drainage and reduce flood risk for communities. It includes activities such as drainage pipes, topographic grading, wetland restoration, and other nature-based solutions.

“Minimum Control Measures (MCM)” shall mean the six categories required by DEP and EPA, as may be amended from time to time, to be addressed in municipal stormwater management programs, specifically: public education and outreach; public participation/involvement; illicit discharge detection and elimination; construction site runoff control; post-construction runoff control; and pollution prevention/good housekeeping.

“Municipal Separate Storm Sewer System (MS4)” shall mean all separate storm sewers that are defined as “large” or “medium” or “small” municipal separate storm sewer systems pursuant to 40 CFR §§ 122.26(b)(4), (b)(7), and (b)(16), respectively, or designated under 40 CFR § 122.26(a)(1)(v). (25 Pa. Code § 92a.32(a) and 40 CFR §122.26(b)(18)) including a conveyance or system of conveyances owned by a state, city, town, village, or other public entity that discharges waters of the Commonwealth; designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); not a combined sewer; and not part of a Publicly Owned Treatment Works (sewage treatment plant).

“Municipality(ies)” shall mean a city, borough, or township situate or draining to watersheds within Dauphin County Pennsylvania, or a municipal sewer, water, stormwater, or other Authority within Dauphin County Pennsylvania having the function, power or responsibility for stormwater management germane to this Agreement authorized by both the law under which the authority was created and the powers or purposes of the authority contained within its articles of incorporation.

“National Pollutant Discharge Elimination System (NPDES)” shall mean the federal government and Commonwealth of Pennsylvania’s system for issuance of discharge permits under the federal Clean Water Act (CWA), the Pennsylvania Clean Streams Law and Storm Water Management Act.

“Nutrient Reduction Process” shall mean the process used for nitrogen and phosphorus removal from wastewater before it is discharged into surface or groundwater.

“Project” shall mean a structural Regional BMP Project, Flood Mitigation Project or MCM, implementation of a Regional Plan, or other activity under this Agreement for which the County may issue debt.

“Pollutant” shall mean any contaminant or other alteration of physical, chemical, biological, or radiological integrity of surface water which causes or has the potential to cause pollution.

“Regional BMP Project” shall mean a project of such scale that the results of the project (including but not limited to MS4 credit, water quality, flood mitigation, organizational capacity, recreation,

education, environmental) benefits multiple Municipalities while being impractical and/or unaffordable for each Participant to do by itself.

“Total Maximum Daily Load (TMDL)” shall mean the sum of individual waste load allocations for point sources, load allocations for nonpoint sources and natural quality and a margin of safety expressed in terms of mass per time, toxicity, or other appropriate measures.

“Watercourse” shall mean a distinct natural or artificial body of water flowing perennially or intermittently in a defined channel with bed and banks. The term includes a river, creek, stream, slough or canal.

“Watershed” shall mean the drainage area of a watercourse of a minimum drainage area determined in accordance with guidelines developed pursuant to 27 Pa.C.S.A. § 3115(a)(2) (relating to development, adoption, amendment and periodic review of State water plan).

“Watershed Implementation Plan (WIP)” shall mean plans for how the Chesapeake Bay watershed jurisdictions, in partnership with the federal government, will achieve the Chesapeake Bay TMDL allocations and planning targets.

“WREP” shall mean this Water Resource Enhancement Program.

ARTICLE II

Establishment and Organization

2.01. Establishment.

The Municipalities agree that Dauphin County shall be responsible for coordinating (1) the development and implementation of certain Projects, (2) the Regional Plans, (3) the creation, operation, and maintenance of certain Projects based upon their design and performance lifespan, and (4) select MCMs, as further set forth in this Agreement. All of these activities collectively shall be known as the “Dauphin County Regional Water Resource Enhancement Program” (hereinafter the “Program”).

2.02. Authorization.

The Parties certify that they are authorized to enter into and execute this Agreement in the exercise and/or performance of their governmental functions, powers, or responsibilities. Participants further certify that they are not the subject of any pending lawsuits, regulatory actions, consent decrees, or other similar sanction of whatever kind related to stormwater, including but not limited to stormwater regional BMPs, Flood Mitigation Projects, and MCMs located within the Participants’ municipal boundaries that would compromise or jeopardize the goals of this Agreement or any of the duties to be performed hereunder. Such Municipalities shall undertake best efforts to resolve any and all such lawsuits, fines, consent decrees, or similar sanctions prior to that Municipality’s execution of this Agreement. In the event such a Municipality is unable to resolve such lawsuits, fines, consent decrees, or similar sanctions prior to execution of this Agreement, the Municipality agrees to fully indemnify and defend the Participants against any associated damages and liability incurred by Participants by virtue of said Municipality’s lawsuits, fines, consent decrees, or similar sanctions to the extent permitted by law.

2.03 Delegation.

The Municipalities properly adopting and executing this Agreement hereby delegate such functions, powers, and responsibilities exclusively to Dauphin County only to the extent necessary to effectuate the Projects in which they have elected to participate, or work permitted, agreed to, or required herein.

2.04. Participant Representation.

Each Municipality shall designate a primary voting representative and an alternate to serve as the contact person(s) on all matters related to the Program. The name and contact information for the representative and alternate shall be provided to the Tri-County Regional Planning Commission in writing, as well as any subsequent changes, within 15 days of final execution of this Agreement by the Municipality.

2.05. WREP Advisory Committee.

Each Municipality adopting this Agreement by September 30, 2022, shall be considered a "Founding Municipality." The WREP Advisory Committee tasked with determining the initial Tier Levels of Service shall be comprised only of the representatives designated by the Founding Municipalities, a representative designated by the Dauphin County Conservation District, the County Commissioners, and the Dauphin County Planning Commission. Municipalities electing to participate in the Program after September 30, 2022 will become voting members of the WREP Advisory Committee following the promulgation of the inaugural Tier Level of Service options. Alternates may attend all Committee meetings but may participate and vote only when the designated representative is unavailable. Unless a different person is designated from time to time by the County Commissioners, the Executive Director of the Tri-County Regional Planning Commission, *ex officio*, shall serve as Administrator for the Committee. The Administrator shall be a participating and voting member of the Advisory Committee and shall chair all meetings. The Administrator shall receive no additional compensation for performing these duties.

2.05.1. Advisory Committee Duties.

The WREP Advisory Committee shall provide input to Dauphin County staff, consultants, and consulting engineers on the service offerings, cost share formula, Project costs, proposed financing, Tier Level of Service offerings, and selection of Projects. The initial service offerings and cost share formula shall be recommended to the County Commissioners by December 31, 2022.

2.05.2. Advisory Committee Recommendations.

Only those Project recommendations made by a majority vote of the WREP Advisory Committee will be sent for review by the Dauphin County Planning Commission and the Dauphin County Conservation District for ultimate submission and consideration by the County Commissioners. Nothing herein shall limit or restrict Dauphin County or a Participant from implementing stormwater projects independently of this Agreement or its Participants.

ARTICLE III

Functions, Powers and Responsibilities

3.01. Dauphin County Functions, Powers and Responsibilities.

Among other things, Dauphin County shall be responsible for the following Program tasks:

3.01.1. Regional Plans and Regional Flood Mitigation Projects.

3.01.1.1. Prepare and make available to all Municipalities minutes from all Dauphin County and Tri-County Regional Planning Commission (TCRPC) meetings related to the Program, and any Projects thereunder, including Regional Plans, Projects, Flood Mitigation Projects, and other material matters contemplated by this Agreement.

3.01.1.2. Arrange, plan, and coordinate all meetings and/or conference/video calls regarding the Program, and any Projects thereunder, including, Regional Plans, Projects, Flood Mitigation Projects, and MCMs as deemed necessary by Dauphin County.

3.01.1.3. Prepare the Regional Plans, and any and all drafts, revisions, updates, or other amendments to the same.

3.01.1.4. Administer and implement the Regional Plans and conduct a review of the Regional Plans as deemed administratively necessary or otherwise required by law.

3.01.1.5. Oversee, supervise, and administer Projects, including ensuring that these projects are constructed as approved by Dauphin County. A description of services for the first project ("Project 1") is attached hereto and incorporated herein as Appendix A.

3.01.1.6. Approve for payment and pay appropriate invoices submitted for Projects.

3.01.1.7. Provide Program supplemental information as necessary for each Municipality to submit its MS4 Annual Status Report.

3.01.1.8. Arrange for the management and administration of the Program related funds including, but not limited to, Municipality contributions, grant monies, or any other similar funds of Dauphin County related to the Regional Plans, Projects, and MCM work.

3.01.1.9. Prepare or cause to be prepared an annual Financial Report of the Dauphin County Stormwater Account and all expenditures related to the Regional Plans, Projects, and MCM work.

3.01.1.10. Dauphin County shall be responsible for the implementation of new Projects (including, but not limited to, funding, design, permitting, construction, operation, monitoring, and maintenance). Dauphin County may contractually transfer such obligations for design, construction, operation and maintenance, and monitoring to qualified third parties, but Dauphin County shall remain responsible to ensure that the contracted third parties are performing the required tasks satisfactorily.

3.01.1.11. Dauphin County shall maintain the Program and Project documentation in accordance with applicable laws and regulations and shall provide copies of the same and updates to Municipalities upon request as more specifically set forth herein.

3.01.1.12. Dauphin County shall be responsible for any regulatory fines occasioned by actions taken under this Agreement to the extent of their responsibility as defined under this Agreement.

3.01.2. Minimum Control Measures (MCMs).

A Municipality may delegate responsibility for implementation of MCMs to the Program if approved by a majority vote of the WREP Advisory Committee and subsequent written approval of the County Commissioners for integration into this Agreement.

3.01.3. Other Dauphin County Tasks.

3.01.3.1. Dauphin County shall ensure that all applicable notice requirements are satisfied, and all required advertisements are drafted and published, at Dauphin County's expense, as required by applicable laws, including, but not limited to, the Pennsylvania Sunshine Act, 65 Pa.C.S.A. § 701, *et. seq.* Dauphin County shall not be responsible for any notices or advertisements for anything not related to this Agreement or anything required by law to be done by the Municipality.

3.01.3.2. Dauphin County shall retain all records, as that term is defined by the Pennsylvania Right-to-Know Law, 65 P.S. § 67.102, for the time period required by the County Records Manual or applicable law, whichever is longer, but in no event for less than six (6) years. Such records related to the Regional Plans, Projects, MCM work, or other activities undertaken pursuant to this Agreement shall be available for review and copying by any Municipality at Dauphin County offices upon request.

3.01.3.3. Dauphin County shall undertake other actions that may be necessary or convenient to implement the provisions and intent of this Agreement.

3.01.3.4. Dauphin County shall perform its obligations and duties under this Agreement in a competent and business-like manner and shall exercise due care, diligence, and control in connection with costs, fees, and expenses related to such performance so that the ratepayers that it serves will receive the benefits accruing from proper and efficient implementation of the Regional Plans, construction, operation and maintenance of Projects, and providing MCM support as contemplated by this Agreement.

3.01.4. Designated Representatives.

Dauphin County reserves the right to authorize any of its officers, employees, representatives or agents to administer this Agreement and exercise its rights under this Agreement.

3.02. Municipality Functions, Powers and Responsibilities.

The Municipalities' functions, powers and responsibilities shall be as follows:

3.02.1. Municipalities agree to act in good faith and to cooperate in all reasonable respects with Dauphin County so that Dauphin County may perform the obligations and duties assumed and undertaken under and by virtue of this Agreement in a proper and satisfactory manner.

3.02.2. Municipalities agree to take any and all legislative or other acts necessary to confirm Program participation and Project participation, as elected by each Municipality in accordance with this Agreement, in a timely manner and to not delay implementation of the Program or any Project elected by the Municipality.

3.02.3. Municipalities shall perform their obligations and duties under this Agreement in a competent and business-like manner and shall exercise due care, diligence, and control in connection with costs, fees, and expenses related to such performance so that property owners within the Municipalities will receive the benefits accruing from proper and efficient implementation of the Regional Plans, construction, operation and maintenance of Projects, and work related to covered MCMs.

3.02.4. To the extent they elect to participate in the Projects pursuant to this Agreement, Municipalities consent to the placement, construction, ownership, continued operation, and ongoing maintenance of new Projects by Dauphin County within their municipal borders consistent with the Regional Plans. Dauphin County may purchase or otherwise acquire any real property necessary to effectuate the purposes set forth herein, unless a Municipality otherwise agrees to acquire real property. If necessary, Municipalities agree to cooperate fully with Dauphin County's efforts in obtaining real property, which may include, at the Municipality's discretion, the use of eminent domain pursuant to the Eminent Domain Code, 26 Pa.C.S.A. § 101, *et seq.* In the event it is deemed preferable for a Municipality to acquire real property for a Project, a Municipality must act through its governing body or by referendum. Nothing in this section shall prevent a Municipality from being the Condemnor for a Project if mutually agreed to by the Municipality and Dauphin County.

3.02.5. Municipalities agree to continue the operation and maintenance and regulatory compliance requirements with respect to any and all existing BMPs and stormwater infrastructure for which they were responsible before the formation and implementation of this Agreement. All aspects of said operation and maintenance, including all administrative and document related tasks, shall be solely the Municipality's responsibility, to be performed at the Municipality's sole cost and expense. The Parties may, upon mutual agreement, elect to transfer responsibility for operation and maintenance, including all associated administrative functions, of existing BMPs to Dauphin County. Unless otherwise agreed upon, Dauphin County shall be responsible only for the placement, construction, ownership, operation, and maintenance of new Projects created pursuant to this Agreement and consistent with the Regional Plans.

3.02.6. Municipalities shall timely submit MS4 Annual Status Reports as required by existing law and regulations. Each Municipality shall, contemporaneously upon submission to DEP, provide to Dauphin County a digital or hard copy of the Municipality's MS4 Annual Status Report as well as reporting to Dauphin County on retained responsibilities relative to MS4 compliance.

3.02.7. Municipalities agree to cooperate fully in Dauphin County's acquisition of any easement or right-of-way necessitated by Dauphin County's administration of this Agreement and its creation, operation, and maintenance of any Project or other function covered by this Agreement.

3.02.8. Municipalities shall cooperate in any application by Dauphin County for grants or other

funding that can be used to fund the Regional Plan's implementation, Projects, and/or the actions and activities undertaken pursuant to this Agreement.

ARTICLE IV

Finance and Accounting

4.01. Municipality Contributions.

4.01.1. Initial Contribution.

Each Founding Municipality shall make an initial contribution for \$500, payable to "Dauphin County," for purposes of financing the work items described in this Agreement ("Initial Contribution"). The Initial Contribution shall be tendered no later than sixty (60) days after the Effective Date of this Agreement.

4.01.2. Future Tier Level of Service Selection.

The Program, starting in 2023, will include a range of tiered services ("Tier Level of Service") to be developed by the WREP Advisory Committee by the end of 2022 for approval by the Dauphin County Commissioners during the first quarter of 2023, with said Tier Level of Service schedule being integrated into this Agreement upon approval by the Dauphin County Commissioners. At that time, Dauphin County will offer a 120-day period in which a Municipality may select to enroll in a Tier or withdraw from this Agreement and participation in the Program. The Tier Levels of Service may not include participation in Projects. Beginning in year 2025, Municipalities must select the desired Tier Level of Service for the subsequent two calendar years by December 1st of the preceding year. Any subsequent changes in Tier selection may result in additional charges borne by the Municipality.

4.01.3. Project Contribution.

Municipalities may elect to participate in Projects as distinct proposals offered to Participants. Participation in such Projects shall be offered by Dauphin County through the distribution of a specification report detailing the material Project information, including, but not limited to, total Project cost, anticipated MS4 credits available, if any, timelines of any phases and for completion, and reasonable estimations as to operation and maintenance costs. Project participation is distinct from Program participation. Municipalities must elect to participate in individual Projects and take any necessary legislative action to authorize each Project in which a Municipality elects to participate. Project costs will be billed to participating Municipalities in accordance with the details accompanying the Project specifications.

4.01.4. Annual Contribution.

For each year following 2023, Dauphin County will distribute annual invoices to each Municipality for the charges corresponding to each Municipality's selected Tier Level of Service. Dauphin County shall adopt and notify the Municipalities of the costs assigned to each Tier Level of Service not later than July 1 of each year, after which, the associated cost of each Tier may only be reduced.

4.01.5. Add-On Services Contribution.

In the event the Program offers Municipalities additional services separate from services provided in a Tier Level of Service (hereinafter “Add-On Services”) and a Municipality selects one or more of the Add-On Services, the County will invoice each Municipality annually for the cost of those Add-On Services payment thereof net sixty (60) days unless an alternative financing plan is arranged with Dauphin County.

4.01.6. In-Kind Contributions.

A Municipality may choose to provide services to the benefit of the Program and the stormwater management services described herein in complete or partial payment of its required contribution. The value of any such service or services provided in lieu of a cash payment or contribution may be used as an offset to the contribution obligations provided in this Agreement. In-kind services may include, but are not limited to, peer to peer training, coordination of inspection services, hosting or inputting of regional Geographic Information System data and the like. The level and type of service to be provided and the level of credit would be mutually agreed upon by Dauphin County and the Municipality in advance of providing such service. Any offset of the Municipality’s contribution would be reflected in the Municipality’s contribution in the following year of the Program. If an offset to a Municipality’s contribution is to occur in the final year of the Municipality’s participation in the Program, Dauphin County will reimburse the Municipality in full not later than March 1st following the year the Municipality elected to terminate this Agreement.

4.01.7. Subsequent Participant (“opt in”).

Dauphin County shall develop a separate policy with the input of all Founding Municipalities regarding the contribution required to be made by any local government that chooses to opt in/execute this Agreement after September 30, 2022. Any Subsequent Participant shall, however, contribute a one-time payment in an amount not less than the amount of any administrative costs and expenses occasioned on Dauphin County by virtue of the Subsequent Participant’s opt-in (i.e., a “Plan Revision Fee”). Any initial contribution required of a Subsequent Participant shall not reduce the other Participants’ Initial Contribution or entitle any Participant to a refund of the same.

4.02. County Contributions.

4.02.1. County Funding.

Dauphin County, in its sole discretion, may appropriate funds to the Program from time to time. Nothing herein shall be construed to require Dauphin County to make appropriations, or to guarantee any level of appropriation, to the Program. The award of Program grants shall be made in the sole discretion and approval of the County Board of Commissioners, upon recommendation of its Planning Commission and the WREP Advisory Committee.

4.02.2. County Indebtedness.

4.02.2.1. The County may, in its sole discretion, incur or guarantee indebtedness for the benefit of Projects undertaken in furtherance of the Program, including establishment of a Line(s) of Credit, the issuance of General Obligation Notes, or other instruments of indebtedness allowable for a County government, the proceeds of which will be used to (i)

provide funding to the Program for planning, designing, permitting, acquiring, constructing and installing certain approved Projects and (ii) paying the costs of issuance of the instrument, all of which constitute a valid governmental purpose.

4.02.2.2. The debt service for any County indebtedness for the benefit of Projects shall be paid exclusively by Municipality contributions and any grants awarded to the Program if allowable by the terms of the grant. Municipality contributions will only be required in support of Project indebtedness for Projects in which the Municipality has elected to Participate pursuant to 4.01.3.

4.02.2.3. Dauphin County shall present to the WREP Advisory Committee the details of any debt intended to be incurred requiring a multi-year contribution by the Municipalities at least ninety (90) days prior to entering a binding commitment to incur said debt. Municipalities must exercise proportional legislative authority necessary to incur debt prior to being held subject to any debt or debt service costs.

4.02.3. County Staffing.

Dauphin County shall provide, either directly or through delegation and/or subcontract, sufficient staff to administer the Program.

4.02.4. County Grant Management.

Dauphin County shall use best efforts to secure grant funding for the construction, operation and maintenance of Projects.

4.03. Accounting.

4.03.1. Dauphin County Stormwater Account.

Dauphin County shall establish a separate account (the "Dauphin County Stormwater Account") for the deposit of all funds related to or contemplated by this Agreement, including the Municipalities' Initial Contributions, Annual Contributions, and all other monies received by Dauphin County related to this Agreement from whatever source.

4.03.2. Initial Contribution Fund.

Municipality Initial Contributions shall be accounted for in the Dauphin County Stormwater Account in a separate and dedicated fund and shall be used solely for reimbursement for eligible Dauphin County administrative costs and expenses related to the operation and administration attributable to establishing the Program which includes the development and implementation of the Regional Plans. Future administrative expenses will be determined and allocated on a Project and Program basis as recommended by the WREP Advisory Committee and approved by the County Commissioners.

4.03.3. Other Revenues.

Any and all other revenues that may be acquired or used by Dauphin County under this Agreement related to stormwater management, including, but not limited to, grants, loans, or donated funds shall be accounted for separately from the Municipality Contributions. Said funds shall be used for the development and implementation, including but not limited to, construction, operation and maintenance of Projects, and MCMs identified in the Regional

Plans.

4.03.4. Fund Administration.

Administration of these funds to pay for proper expenses under this Agreement shall be the responsibility of Dauphin County. The County may assign this duty, through a separate agreement, to the Tri-County Regional Planning Commission or other qualified entity such as the Dauphin County Economic Development Corporation.

4.03.5. Audits.

An annual audit of all accounts and funds of the Program and Dauphin County Stormwater Account shall be completed by a qualified CPA to assure all Participants and the public that the accounts are in order. Each Participant shall be provided a true and correct copy of the annual audit upon completion thereof. The cost of this audit shall be included in the Program's budget.

4.04. Taxpayer/Ratepayer Returns.

4.04.1. Annual Report.

Dauphin County will provide, beginning in the year 2024, each Municipality an annual report that summarizes the accomplishments of the Program and an estimate of the cost savings yielded from the Program. Cost savings will be calculated for capital projects, mapping, inspection, etc. and grants or other funding support received by virtue of the Program.

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4.04.2. Mandatory Returns.

Beginning in the year 2024, the Municipalities shall either (i) return a minimum of 60% of the respective reported cost savings directly to the Municipalities' taxpayers/rate payers through tax/rate reduction or (ii) certify to Dauphin County that any savings are being invested into infrastructure or water resource improvement projects that otherwise would have been funded through public funds. In no event shall a Municipality be required to show returns or investment justification in excess of 100% of its annual total stormwater management costs.

4.05. Fees and Costs.

Unless otherwise expressly stated herein, the Participants agree to bear their own fees and costs in connection with or incurred related to the matters between them, and relating to this Agreement.

ARTICLE V

Term and Termination

5.01. Effective Date.

This Agreement shall become effective as to each Participant upon execution of this Agreement. It is the intent of the Participants that their cooperative efforts, including the conduct of meetings authorized or required by this Agreement, shall commence within 60 days of the initial execution of the Agreement.

5.02. Term.

The term of this Agreement shall commence on the Effective Date and continue until terminated as set forth herein.

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5.03. Term Stipulations.

If this Agreement is deemed to constitute a contractual impairment or limitation upon future governing bodies of the Parties in a legislative or governmental function, then the Parties hereby stipulate that this Agreement constitutes one of urgency and necessity, is in the public interest, and is absent of bad faith or ulterior motivation. The Parties further stipulate that stormwater management is statutorily prescribed.

5.04. Termination and Wind-Up.

5.04.1. Municipalities may elect to terminate this Agreement at the end of each regularly scheduled Pennsylvania Department of Environmental Protection General MS4 Permit period (hereinafter referred to as the "Permit Period"). Should the Permit Period be administratively extended by the Pennsylvania Department of Environmental Protection, that later date shall be deemed to be the end of the Permit Period for purposes of this section.

5.04.2. A Municipality electing to discontinue participation ("Discontinuing Municipality") in the Program shall elect to terminate its participation herein through the adoption of a resolution or ordinance not later than one hundred-eighty (180) days prior to end of a Permit Period. Termination shall be effective at 11:59 P.M. on the last day of the Permit Period with Tier Level of Service costs prorated as of such last day. The fund administrator will provide to the Discontinuing Municipality an accounting of the pro-rated costs within ninety (90) days of the date of termination including any charges against which the refund is set-off. Termination will not affect debts and costs previously incurred by the Municipality in accordance with its participation in the Program or the Discontinuing Municipality's obligation to pay thereon; however, in no event may an invoice related to such debts and costs exceed the amount that the Discontinuing Municipality duly assumed through an election to participate in the selected Tier Level of Service or Projects during its participation in the Program. Debts incurred during the participation in the Program will not be discharged as to the Discontinuing Municipality until such time as the original debts incurred by Dauphin County and accepted by the Municipality in furtherance of the Projects have been satisfied. At the request of a Municipality, Dauphin County will provide a one-time payment option, if accurately calculable, at the date of termination to cover future Program related debt and costs, as opposed to payments for the term of outstanding debt issuances.

5.04.3. In the event of termination of this Agreement as to all Municipalities for the discontinuance of the Program through mutual agreement, any funds remaining in the Dauphin County Stormwater Account, subject to any offsets necessary to retire any outstanding debt related to the Program, shall be returned to those Municipalities who remain participants in this Agreement at the time of termination based upon the contribution of the Municipality as of the date of termination. In the event funds remaining in the Dauphin County Stormwater Account are insufficient to retire any outstanding debt and cover operation and maintenance of Projects installed through the Agreement, Municipalities agree that Dauphin County may continue to charge the participating Municipalities in an amount sufficient and for as long as necessary to cover debt service on debts previously adopted by the Municipality and operation and maintenance costs of Projects installed unless alternate operation and maintenance arrangements are agreed to by the County and participating Municipalities at the Project development and

approval phase. Any funds remaining after any outstanding debt service and other costs are paid shall be disbursed to the Municipalities remaining on the date of Termination no more than one hundred twenty (120) days after the date of Termination.

ARTICLE VI

Contract Provisions

6.01. Integration.

This Agreement (and the incorporated Appendices) constitute the entire understanding and agreement between the Parties with respect to the subject matter of this Agreement and cancels, supersedes and terminates all prior agreements, contracts, understandings, negotiations, and other arrangements between the Parties whether written or oral or partly written and partly oral with respect to the subject matter of this Agreement. There are no understandings or agreements, verbal or otherwise, in relation hereto, except those expressly and specifically set forth herein.

6.02. No Reliance.

The Parties warrant that they have not relied upon any statement, projection, disclosure, report, information or any other representation or warranty except for those as may be specifically and expressly set forth in this Agreement.

6.03. No Third-Party Beneficiaries.

No provision of this Agreement shall be construed in any manner so as to create any rights in any third parties not party to this Agreement. This Agreement shall be interpreted solely to define specific duties and responsibilities between Dauphin County and the Municipalities and shall not provide any basis for claims of any other individual, partnership, corporation, organization, or municipal entity.

6.04. Other Contracts.

The Parties, at their sole expense, may undertake or award other contracts for additional or related work, and the Parties, and any subcontractors of the Parties, shall fully cooperate with the Program created hereby and carefully fit any additional or related work to the Program. The Parties shall not commit or permit any act that will interfere with the performance of work pursuant to this Agreement. This paragraph shall be included in the contracts of all contractors with whom each Party will be required to cooperate.

6.05. Amendment.

Any alterations, variations, modifications, amendments, waivers or additional provisions to this Agreement will be valid only when reduced to writing, approved by official action of each Party and duly signed by authorized representatives of all Parties, and attached hereto. No oral amendment, modification or waiver shall be effective, and this provision may not be orally amended or waived. The parties hereto further agree that any particular course of performance may not be used by any trier-of-fact to imply or infer a modification of this Agreement.

6.06. Severability.

All agreements, provisions and covenants contained in this Agreement are severable, and in the event any of them are held to be invalid by any competent court, this Agreement shall be interpreted as if the invalid agreements, provisions or covenants were not contained in this Agreement.

6.07. Applicable Law.

This Agreement shall be construed and governed pursuant to the laws of the Commonwealth of Pennsylvania. Any dispute arising from this Agreement shall be heard in the Court of Common Pleas of Dauphin County and the Parties hereby submit to the exclusive jurisdiction of that Court.

6.08. Dispute Notification.

In the event of disputes arising under this Agreement and prior to the initialization of mediation as required by Section 6.09 and thereafter legal action, the complaining Party shall reduce each and every complaint to writing and deliver same to the Dauphin County Commissioners.

6.09. Dispute Resolution.

Upon the written request of a Party, any dispute or claim in law or equity arising out of this Agreement shall be submitted to neutral, non-binding mediation prior to the commencement of litigation or any other proceeding before a trier of fact, as follows:

6.09.1. The Parties to the dispute or claim agree to act in good faith to participate in mediation and to identify a mutually acceptable mediator. If they are unable to agree upon a mediator within twenty (20) days from the date of the written request for mediation the Dauphin County Solicitor shall appoint a mediator. All Parties to the mediation shall share equally in the costs. After the selection of the mediator, the Parties shall submit to mediation for a period up to forty-five (45) days.

6.09.2. If the dispute or claim is not resolved by the forty-fifth (45th) day after the selection of the mediator or if the mediation does not successfully resolve the dispute or claim, then the mediator shall provide written notice to the Parties reflecting the same and the Parties may seek alternative forms of resolution to the dispute or claim in accordance with the terms of this Agreement and other rights and remedies afforded by law.

6.09.3. If the dispute or claim is resolved through mediation, the resolution will be documented by a written agreement executed by all Parties.

ARTICLE VII

Execution

7.01. Representation by Counsel.

This Agreement has been negotiated by the Parties through their respective legal counsel and embodies terms that were arrived at through mutual negotiation and joint effort, and the Parties shall be considered to have contributed equally to the preparation of this Agreement. The Parties warrant and represent that the terms and conditions of this Agreement have been discussed and negotiated between them, and their respective counsel, and are voluntarily and knowingly accepted for the purpose of making a binding contract between the Parties. The Parties further acknowledge that they understand the facts and their respective legal rights and obligations pursuant to this Agreement.

7.02. Ordinance or Resolution.

Pursuant to 53 Pa.C.S.A. § 2305(a) the Parties shall enter into this Agreement for intergovernmental cooperation only through the passage of an ordinance or resolution by their respective governing bodies. Each Municipality shall provide Dauphin County with a copy of said ordinance or resolution prior to participation.

7.03. Notices.

All notices required by a Municipality to be given or so sent hereunder or any other official correspondence regarding this Agreement to Dauphin County shall be sent by the Municipality via United States mail, postage prepaid, addressed to the following individuals at the following addresses unless Dauphin County informs the Municipality, in a future writing, of a different address(es) for purposes of receiving notices hereunder. All notices given pursuant to this Section shall be effective as of the date said notice is mailed.

TCRPC Executive Director
112 Market Street, 2nd Floor
Harrisburg, PA 17101

Dauphin County Chief Clerk
2 S. Second Street, 4th Floor
Harrisburg, PA 17101

7.04. Counterparts.

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may be electronically transmitted and electronically signed, in whole or in part, pursuant to the Pennsylvania Electronic Transactions Act, 73 P.S. § 2260.101 *et. seq.* and The Electronic Signatures in Global and National Commerce Act, 15 U.S.C.A. § 7001, *et. seq.* The effectiveness of such documents and signatures shall have the same force and legal effect as manually signed originals and shall be binding on the parties.

7.05. Signatures.

The undersigned individuals and/or representatives of each party, represent and warrant that they have the signatory authority to enter into this Agreement and legally bind the respective party hereto.

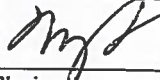
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IN WITNESS WHEREOF, the parties hereto have caused this Intergovernmental Cooperation Agreement for the Implementation of the Dauphin County Regional Water Resource Enhancement Program to be executed by their authorized officers.

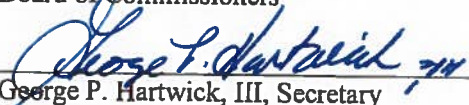
ATTEST:


J. Scott Burford
Chief Clerk/Chief of Staff

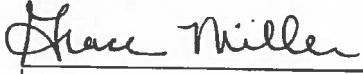
COUNTY of DAUPHIN
COMMONWEALTH of PENNSYLVANIA


Mike Pries, Chairman
Board of Commissioners


Chad Saylor, Vice-Chairman
Board of Commissioners


George P. Hartwick, III, Secretary
Board of Commissioners

ATTEST:


Shae Miller

MUNICIPALITY: Middletown Borough



For eligible municipalities, Project 1 Add-on Service Investment (\$2/lb sediment):

\$ _____ for _____ sediment

Note: Separate Page 19 for each participating Municipality.

**APPENDIX A
OF THE
INTERGOVERNMENTAL COOPERATION AGREEMENT
FOR THE
DAUPHIN COUNTY
REGIONAL WATER RESOURCE ENHANCEMENT PROGRAM**

- I. Project 1 Background: MS4 municipalities have a difficult time meeting their sediment reduction requirements within their boundaries by 2023 (space constraints, cost constraints). To kickoff WREP, a regional project was identified that can be started in 2022 to demonstrate that Dauphin County's role in assisting municipalities with stormwater management can result in cost savings and other co-benefits. Londonderry Township has a large-scale stream restoration BMP (Conewago Creek project) that is anticipated to result in more sediment reduction credits than the Township, and its partner Mount Joy Township, need to satisfy their MS4 requirements. Candidate MS4 municipalities who may have interest in paying into the partnership in return for sediment reduction credits that will be reportable to PADEP: Steelton Borough, Middletown Borough, Lower Swatara Township, Highspire Borough, Swatara Township, New Cumberland Borough (Cumberland County) – refer to Figure 1 for eligible municipalities in cyan watersheds.
- II. Conewago Creek Restoration Project construction schedule:
 - A. Phase 1 – Brills Run to confluence
 - B. Phase 2 – entirely in Lancaster County
 - C. Phase 3 – entirely in Dauphin County
 - D. Opened bids February 16, 2022, start construction May 2022
 - E. Milestone 1 – Final Grading due August 25, 2022
 - F. Substantial Completion – due September 22, 2022
 - G. Final Completion – due October 22, 2022
 - H. Phase 3 – anticipated to be built in 2023, notice to proceed will be issued upon confirmation that it is fully funded
- III. Roles:
 - A. TCRPC – Sediment reduction intergovernmental partnership administration (issue partnership agreements, track sediment reduction balance, coordinate partnership candidates, distribute MS4 documentation to partners for annual reports); lead on WREP advancement.
 - B. DC DCED – Debt issuance and funding administration; additional roles based upon funding sources.
 - C. Londonderry Township – Administer the existing local funding and construction project (Project owner for Phases 1 and 2 is certain; Owner of Phase 3 if funding sources require it); project permittee; provide MS4 documentation to TCRPC to distribute to partnering municipalities for their annual reports; take part in decision making regarding \$/lb. and candidate partners.
 - D. Municipal Partner – Invest an amount that contributes to project costs at a rate of \$2.00 per pound of sediment. Municipal Partner will receive documentation from TCRPC regarding the sediment reduction yield of the project and the reportable amount of sediment reduction credits that the Municipal Partner should report on its Annual Report for Pollutant Reduction Plan credit.

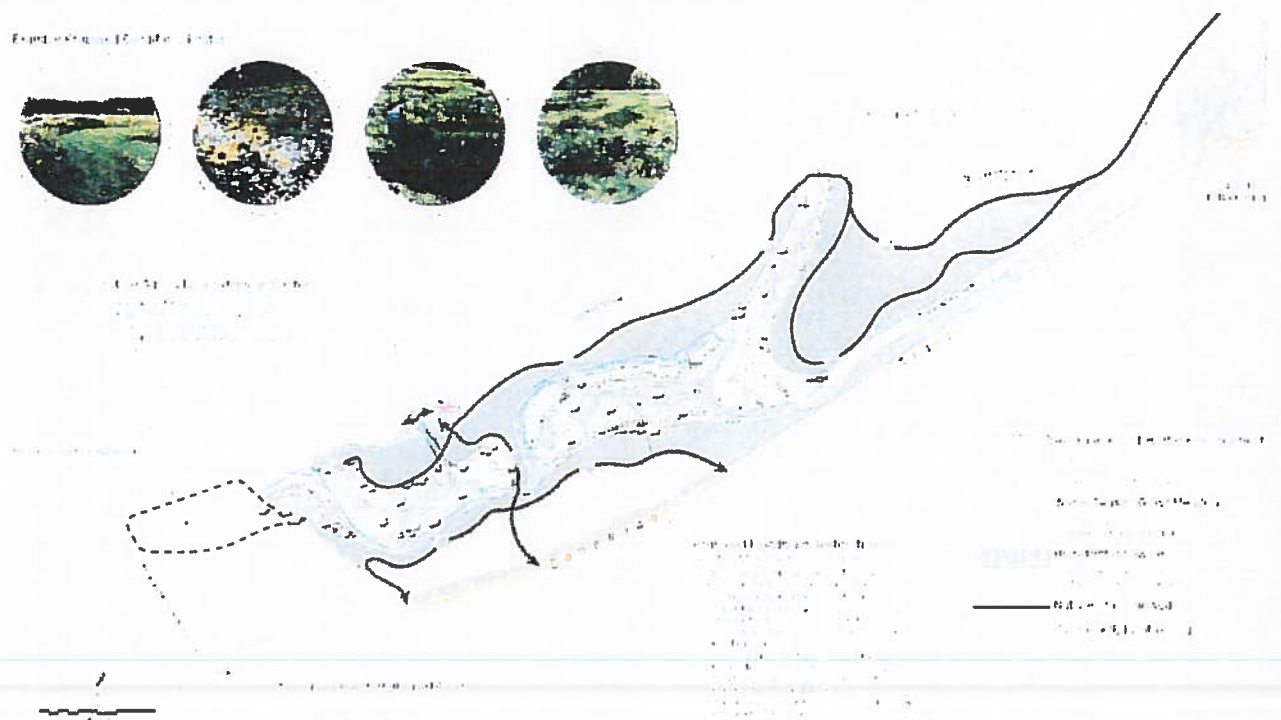
IV. Add-on service optional signup:

- A. Eligible municipalities will designate their investment in the Conewago Creek Restoration Project by indicating the cash amount and corresponding sediment reduction credits at the rate listed under Section III.D. on the signature page of the Intergovernmental Cooperation Agreement.

This map shows the Steelton Borough and its surrounding area in Berks County, Pennsylvania. The Laurel Run-Susquehanna River is a prominent feature, flowing through the center of the map. Other creeks and rivers shown include Spring Creek, Iron Run-Swarata Creek, Conewago Creek, Conoy Creek, Little Ciques Creek, and Bennett Run-Conewago Creek. Townships and boroughes labeled include Steelton Borough, Spring Creek, Iron Run-Swarata Creek, Conewago Township, Conoy Township, Little Ciques Creek, and Bennett Run-Conewago Creek. The map also shows the locations of various creeks and rivers, such as Spring Creek, Iron Run-Swarata Creek, Conewago Creek, Conoy Creek, Little Ciques Creek, and Bennett Run-Conewago Creek. The map is a detailed representation of the local geography and administrative boundaries.

Appendix A Page 3 of 5

FIGURE 2 – PROJECT MASTER PLAN



Project outcomes:

4877-ft stream restoration

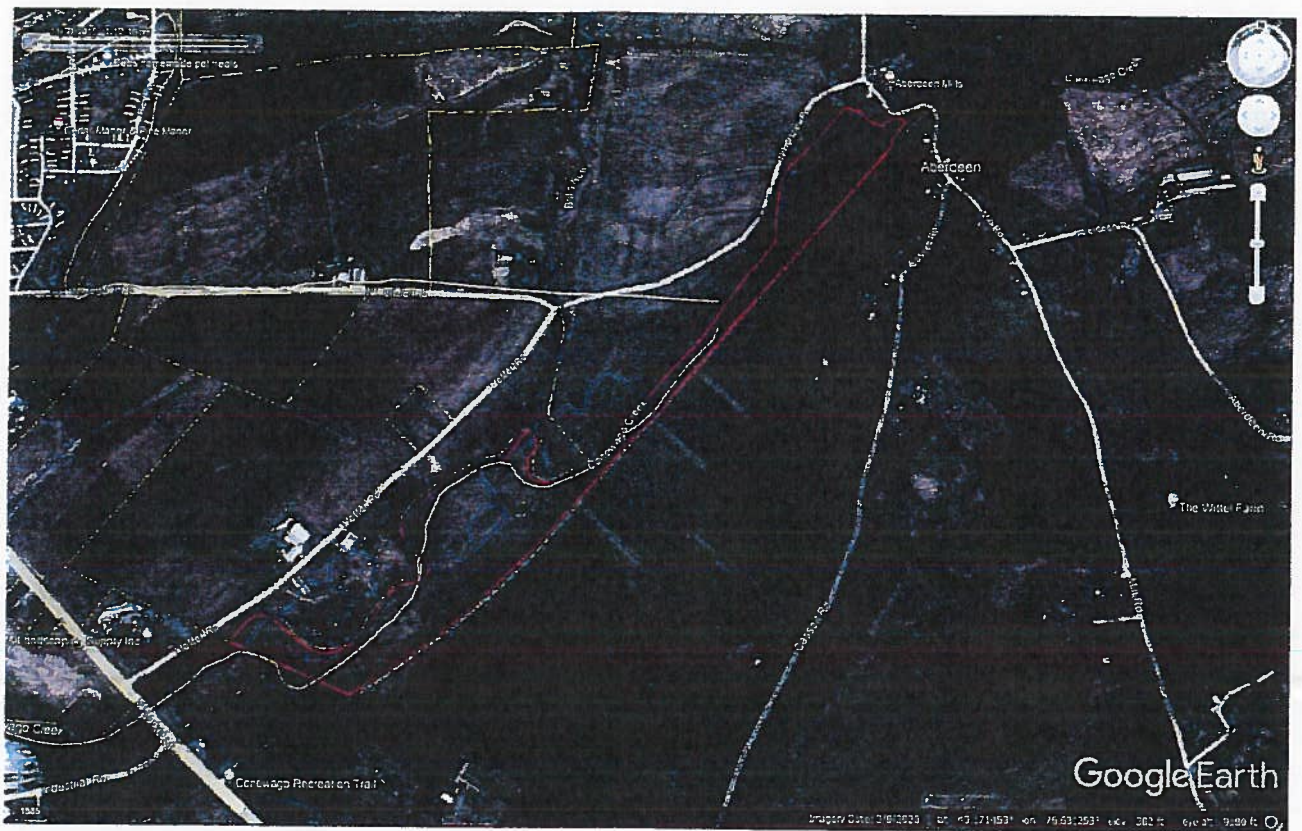
2,988-ft stream creation

15.2-ac floodplain restored to historical conditions

125,000-cy legacy sediment removal

1.018.000-lb sediment reduction credit

FIGURE 3 – LAND ACQUISITION AREA MAP





MIDDLETOWN BOROUGH

Dauphin County, Pennsylvania

Chesapeake Bay Pollutant Reduction Plan

September 2017
HRG Project No. R000516.0459

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

Chesapeake Bay Pollution Reduction Plan

MIDDLETOWN BOROUGH

DAUPHIN COUNTY, PENNSYLVANIA

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INTRODUCTION

Middletown Borough discharges stormwater to surface waters located within the Chesapeake Bay Watershed and is therefore regulated by a PAG-13 General Permit, Appendix D (nutrients and sediment in stormwater discharges to waters in the Chesapeake Bay watershed). The Borough also has watershed impairments regulated by PAG-13 General Permit, Appendix E (nutrients and/or sediment in stormwater discharges to impaired waterways). This Chesapeake Bay Pollutant Reduction Plan (CBPRP) was developed in accordance with both PAG-13 requirements and documents how the Borough intends to achieve the pollutant reduction requirements listed in the Pennsylvania Department of Environmental Protection (PADEP) Municipal MS4 Requirements Table¹.

This document was prepared following the guidance provided in the PADEP National Pollutant Discharges Elimination System (NPDES) Stormwater Discharges from Small Municipal Separate Storm Sewer Systems Pollutant Reduction Plan (PRP) Instructions².

General Information	
Permittee Name: Middletown Borough	NPDES Permit No.: PAG133645
Mailing Address: 60 W Emaus Street	Effective Date: March 16, 2018
City, State, Zip: Middletown, PA 17057-1407	Expiration Date: March 16, 2023
MS4 Contact Person: Ken Klinepeter	Renewal Due Date: Sept 16, 2022
Title: Borough Manager	Municipality: Middletown Borough
Phone: (717) 902-0706	County: Dauphin
Email: klinepeter@middletownborough.com	Consultant Name: Herbert, Rowland & Grubic, Inc.
Co-Permittees (if applicable): N/A	Consultant Contact: Erin Letavic, P.E. 369 East Park Drive Harrisburg, PA 17109 (717)564-1121

Middletown Borough is a small MS4 community that will be starting its second permit term in March 2018. According to the United States Census Bureau's 2010 census, all of the Borough's 1,309 acres are classified as urbanized area (UA).

The majority of the Borough is located within the Swatara Creek-Susquehanna River Watershed, with a small portion of the southwestern corner of the Borough located within the Laurel Run-Susquehanna River Watershed. The Laurel Run-Susquehanna River has been classified as impaired by PADEP. The Pollution Reduction Plan (PRP) requirements for this impaired watershed are included as part of this CBPRP.

¹ PADEP, MS4 Requirements Table (Municipal) (rev. 5/9/2017)

² PADEP PRP Instructions; Document # 3800-PM-BCW0100k (rev. 3/2017)

SECTION A: PUBLIC PARTICIPATION

A complete copy of this CBPRP was made available for the public to review at the Middletown Borough municipal office from August 1, 2017 to August 31, 2017. The availability of the document was publicized on the Borough's website and in *The Patriot News* on August 1, 2017. The published public notice contained a brief description of the plan, the dates and locations at which the plan was available for review by the public, and the length of time provided for the receipt of comments. Public comments were accepted for 30 days following the publication date of the public notice. One public comment was received.

The public notice (newspaper and municipal website post), public comment and response, and public meeting presentation are included in Appendix A.

SECTION B: MAPPING

The Middletown Borough Planning Area Map depicts the Borough's Municipal Separate Storm Sewer System (MS4), as required under MCM #3, BMPs 2 and 3 of the PAG-13 Notice of Intent (NOI). In addition to the MS4 infrastructure (inlets, pipes, outfalls, existing BMPs, etc.), the Planning Area Map also shows the CBPRP planning area, UA boundary, watershed boundaries, existing BMPs locations, and proposed BMP locations.

The Borough's Land Use Map was developed using the most recent National Land Cover Database³. The northernmost area portion of the Borough, north of the PA Turnpike is forested and relatedly undeveloped. The southern and central portions of the Borough are fully-developed as low to medium density residential areas, with areas of high density commercial and industrial development clustered in the most central portion of the Borough.

³ Multi-Resolution Land Characteristics (MRLC) Consortium, *National Land Cover Database 2011* (NLCD 2011)

SECTION C: POLLUTANTS OF CONCERN

The pollutants of concern for Middletown Borough were determined by referencing the PADEP MS4 Municipal Requirements Table⁴ (Table 1). The applicable section of this table is included for reference in Appendix C.

Table 1. Pollutants of Concern by Watershed Planning Area

Planning Area (Watershed)	Impaired Downstream Water	Pollutants of Concern
CBPRP	Chesapeake Bay Nutrients/Sediment	Appendix D - Nutrients, Siltation (4a)
Laurel Run - Susquehanna River	Unnamed Tributaries to Sherman Creek, Unnamed Tributaries to Susquehanna River	Appendix E - Siltation (5)

⁴ PADEP, MS4 Requirements Table (Municipal) (rev. 5/9/2017)

SECTION D: DETERMINE EXISTING LOADING FOR POLLUTANTS OF CONCERN

D.1 Parsed Area Calculation

In order to calculate the actual pollutant loads applicable to the Borough MS4, the PRP Instructions allow areas that do not drain to the MS4 and areas that are already covered by an NPDES permit to be removed from the planning area through the parsing process⁵.

The following areas were parsed from the CBPRP and PRP planning areas:

- **PennDOT Roadways/PA Turnpike** – The impervious areas attributed to PennDOT roadways and the portion of the Pennsylvania Turnpike located within the Borough were parsed from the existing pollutant base load, as PennDOT and the Turnpike Commission maintain their own MS4 permits to account for stormwater runoff generated from their facilities.
- **Private Properties** – Portions of the Susquehanna Regional Airport and Penn State University (Harrisburg campus) are located within the Borough. As these facilities are operated and maintained under their owner permits, they were removed from the Borough planning areas.
- **General Permit for Stormwater Associated with Industrial Activity (PAG-03)** – The Borough contains one property, First Student Inc. No 20576, already covered by existing NPDES PAG-03 permit. The area for this facility's property was removed from the Borough's planning areas.
- **Direct Discharge Areas** – Direct discharge areas are areas in which stormwater runoff does not enter the MS4. There are several areas along the Swatara Creek and Susquehanna River in which stormwater drains directly to these waterways and does not enter the MS4. Additionally, the area north of the PA Turnpike was removed from the Borough's planning areas as this area is minimally developed, contains no MS4 infrastructure, and drains directly to the Swatara Creek.

A summary of areas parsed from the Borough planning areas is shown in Tables 2A and 2B. Parsed areas are shown on the Planning Area Map (Appendix B) and supporting calculations for the pollutant loads associated with each parsed area are included in Appendix D.

Table 2A. Parsed Area Summary - CBPRP Planning Area

Planning Area	Urbanized Area (acres)
CBPRP	1,309
Parsed Area (PennDOT/PA Turnpike)	- 64
Parsed Area (Private Properties)	- 75
Parsed Area (PAG-03)	- 1
Parsed Area (Direct Discharge)	- 388
Adjusted Planning Area	781

⁵ PADEP - PRP Instructions, Attachment A: Parsing Guidelines for MS4s in Pollutant Reduction Plans (rev. 3/2017)

Table 2B. Parsed Area Summary – Laurel Run Planning Area

Planning Area	Urbanized Area (acres)
Laurel Run PRP	176
Parsed Area (PennDOT)	- 2
Parsed Area (Private Properties)	-70
Parsed Area (Direct Discharge)	- 38
Adjusted Planning Area	66

D.3 Existing Pollutant Load Calculation

The existing pollutant loadings were calculated using the Simplified Method⁶. In accordance with this method, the adjusted UA from Tables 2A and 2B was multiplied by the percent pervious and impervious land use values for Middletown Borough listed in the Statewide MS4 Land Cover Estimates⁷ guidance document from PADEP. This calculation evaluates the acres of impervious and pervious land within the given planning area. The impervious and pervious acreages were then multiplied by the Developed Land Loading Rates for Dauphin County⁸ to determine the total existing pollutant load attributed to each planning area. The existing pollutant loading was determined for the CBPRP planning area as well as for the Laurel Run impaired watershed (PRP planning area).

As stated previously in Section C, the pollutants of concern are TSS, TN, and TP, however, it is presumed that within the overall Bay watershed, the TP and TN goals will be achieved when the permit-required sediment reduction is achieved⁹. Therefore, only the TSS pollutant loading was calculated (Table 3). Detailed pollutant load calculations are provided in Appendix D.

Table 3. Pollutant Loading for Middletown Borough

Planning Area	Urbanized Area (acres)	Regulated Pollutant Load TSS (lbs/yr)
Laurel Run PRP	66	17,873
CBPRP	781	802,264

As the Laurel Run PRP planning area is located within the overall CBPRP planning area, the pollutant loads associated with this impaired watershed planning areas are a portion of, and not in addition to, the CBPRP planning area pollutant load.

⁶ PADEP PRP Instructions, Attachment C: Chesapeake Bay PRP Exemplified Using DEP Simplified Method (rev. 3/2017)

⁷ PADEP - Statewide MS4 Land Cover Estimates

⁸ PADEP - PRP Instructions, Attachment B: Developed Land Loading Rates for PA Counties (rev. 3/2017)

⁹ PADEP - PRP Instructions, Document # 3800-PM-BCW0100k (rev. 3/2017)

D.4 Existing Pollutant Loading Adjustment for Previously Implemented BMPs

Middletown Borough contains two recently constructed sites that contain existing BMPs; Westporte Center (underground detention) and AutoZone #6430 (infiltration). The Borough has recently installed a rain garden adjacent to their municipal building to capture and treat a portion of the runoff from the municipal building's roof. The pollutant load reductions from these existing BMPs are being claimed as credit to reduce the Borough's existing pollutant load.

Additionally, Middletown Borough owns multiple property parcels along Few Ave in the northern part of the Borough and along Susquehanna in the southern part of the Borough that were purchased through FEMA hazard mitigation funding. The flood damaged properties were removed and the empty parcels are currently maintained by the Borough as lawn. The pollutant load reduction associated with the removal of impervious area from these properties is also being used as credit toward reducing the Borough's baseline pollutant load.



The pollutant loading reduction for existing BMPs and impervious area reduction was calculated using the Simplified Method in terms of pounds per year using PADEP's standard BMP Effectiveness Values¹⁰. Additional information for the existing BMPs and impervious area reductions from FEMA-funded property buyouts are included in Appendix D.

Table 4A: Adjusted Baseline Load Summary by Planning Area

Planning Area	Urbanized Area (acres)	Regulated Pollutant Load TSS (lbs/yr)	Existing BMP Load Reduction TSS (lbs/yr)	Adjusted Pollutant Load TSS (lbs/yr)
Laurel Run PRP	66	17,873	4,173	13,700
CBPRP	781	823,328	17,650	805,568

¹⁰ PADEP Document 3899-PM-BCW0100M, NPDES Stormwater Discharges from Small MS4s, BMP Effectiveness Values (5/2015)

SECTION E: BMPS TO ACHIEVE THE REQUIRED POLLUTANT LOAD REDUCTIONS

E.1 Required Pollutant Load Reduction Calculation

Middletown Borough discharges stormwater to surface water located within the Chesapeake Bay watershed and is regulated by PAG-13 General Permit, Appendix D (nutrients and sediment in stormwater discharges to waters in the Chesapeake Bay watershed). The pollutants of concern for Appendix D are TSS, TP, and TN with required loading reductions of 10-percent, 5-percent, and 3-percent, respectively. However, as stated previously, it is presumed that within the overall Bay watershed, the TP and TN goals will be achieved when a 10-percent reduction in sediment is achieved¹¹. Therefore, only the required 10-percent TSS reduction is calculated herein as a requirement for planning area load reductions (Table 5). The pollutant load reduction requirements listed below take into account adjustments to baseline loading from the parsed areas and existing BMPs discussed in Section D.

Table 5: Required Pollutant Load Reduction Goals – CBPRP Planning Area

Planning Area	UA (acres)	Required Load Reduction TSS (lbs/yr)
CBPRP	781	80,568

In addition to meeting the PAG-13 General Permit, Appendix D requirements listed in Table 5, the Laurel Run Watershed has two streams (Unnamed Tributaries to Susquehanna River and Unnamed Tributaries to Sherman Creek) with impairments regulated by PAG-13 General Permit, Appendix E (nutrients and/or sediment in stormwater discharges to impaired waterways). Appendix E siltation impairments require a minimum 10-percent reduction in sediment load. The pollutant load reduction requirement in pounds per year required for the Laurel Run watershed is shown below in Table 6. The required pollutant load takes into account adjustments to baseline loading from the parsed areas and existing BMPs discussed in Section D.

Table 6: Required Pollutant Load Reduction Goals – PRP Planning Areas

Planning Area	UA (acres)	Required Load Reduction TSS (lbs/yr)
Laurel Run	66	1,370

As stated previously, the load reduction requirements for the Laurel Run planning area are included as a portion of, and not in addition to, the CBPRP pollutant load reduction. Of the total CBPRP planning area required sediment load reduction (80,568 lbs/yr), 2-percent (1,370 lbs/yr) is to be achieved within the Laurel Run watershed.

¹¹ PADEP - PRP Instructions, Document # 3800-PM-BCW0100k (rev. 3/2017)

E.2 Proposed BMPs

The following section outlines the BMP implementation strategy developed to achieve the required pollutant load reduction goals stated in Section E.1. The proposed BMPs were determined through discussions with the public works employees and municipal staff, in-field site assessments, and public outreach meetings.

The proposed strategy (Table 6) consists of one large-scale bioretention BMP type to meet the majority of the Borough's pollutant load reduction and one smaller-scale infiltration BMP to meet the pollutant load reduction requirements for the Laurel Run planning area. The pollutant loading reduction for these BMPs were calculated in terms of pounds per year using PADEP's standard BMP Effectiveness Values¹². Complete calculations for the anticipated pollutant load reductions for each of the BMPs listed below is provided in Appendix E.

Table 6: BMP Strategy Summary

Site	BMP ID	BMP Type	Planning Area	Drainage Area (acres)	Length (ft)	Load Reduction TSS (lbs/yr)
Hoffer Park	BMP-1	Bioretention and Outfall Stabilization	CBPRP	77	300	74,941
				n/a	100	4,488
Susquehanna Street Park	BMP-2	Infiltration	Laurel Run PRP	1.8	n/a	1,849
Total						81,278

E.3 BMP Project Descriptions

As one of the oldest communities in Dauphin County, Middletown Borough's roadway and utility infrastructure is ageing and being incrementally repaired and updated as needed. It is anticipated that during the permit term, other municipal infrastructure projects will arise. As the Borough understands the importance of stormwater management, any large-scale infrastructure improvement projects that come up will be evaluated to determine if there is the potential to incorporate green infrastructure or other stormwater improvements into the project. If the opportunity becomes available to meet the pollutant load reduction goals of this plan through modifications or expansions to other infrastructure projects, rather than through the stand alone BMPs described below, the municipality may choose to do so. If this route of meeting the pollutant load reduction requirements is chosen, all plans, details, and associated pollutant load reduction calculations for the new project will be included in future Annual Status Reports.

The proposed BMP projects described below have not been fully designed. The following project descriptions are conceptual and intended for planning purposes only. When designed, the proposed BMP projects will be in accordance with the Pennsylvania BMP Manual and all local ordinances and regulations, as well as any applicable DEP guidance documents. The proposed projects have been evaluated in terms of preliminary feasibility and estimated pollutant load reductions in order to meet the goals of this plan.

¹² PADEP Document 3899-PM-BCW0100M, NPDES Stormwater Discharges from Small MS4s, BMP Effectiveness Values (5/2015)

Hoffer Park Bioretention and Streambank Stabilization – The majority of the Borough's pollutant load reduction requirement can be met through the installation of one large-scale BMP along the east side of Hoffer Park. Stormwater from a large drainage area (more than 75 acres) in the southeastern side of the Borough is conveyed to a stormwater pool located in the northeastern corner of the park (outfall B8).

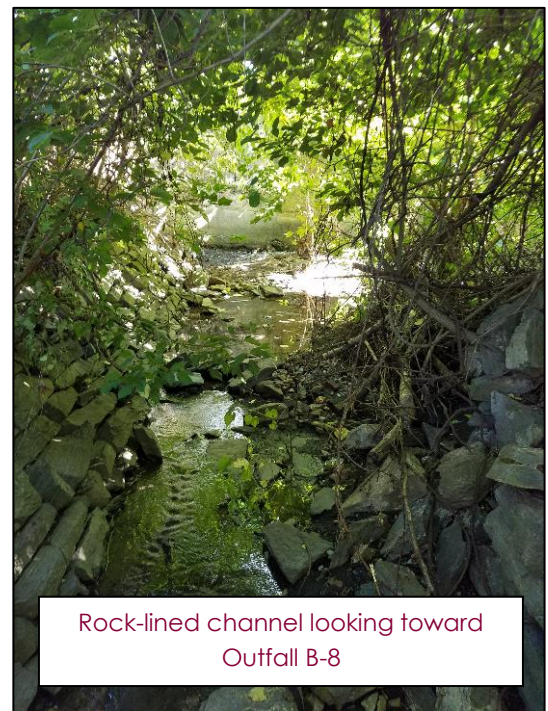


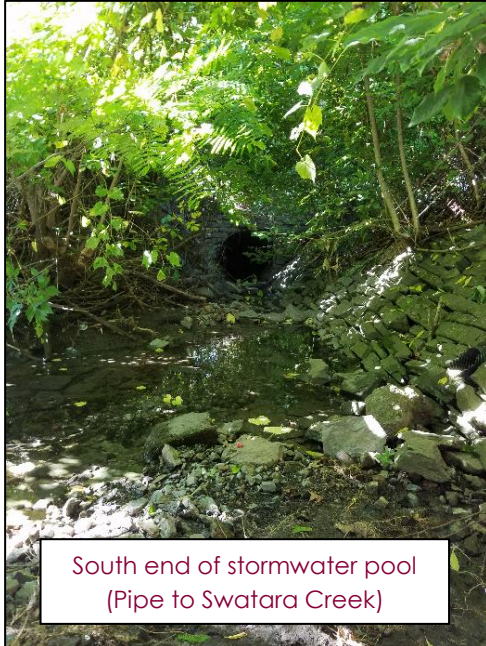
Outfall B8 is a 24-inch corrugated metal pipe (CMP) that collects and conveys stormwater from the branch of the Borough MS4 that extends through the industrial area to the east of the park, and north through the Pineford Village apartment complex.



The north and east sides of the stormwater pool where outfall B8 discharges are concrete. The other sides of the pool are steep earthen embankments. Another stormwater pipe, also a 24-inch CMP, outfalls into the stormwater pool opposite from Outfall B-8. Stormwater from this outfall is conveyed into the stormwater pool via a small rock-lined channel. This outfall conveys stormwater from the branch of MS4 that extends north from Hoffer Park along Courtland Avenue and Adelia Street.

The stormwater pool is approximately 75-feet long and 10-feet wide. The pool is surrounded on the southern and western sides by shrubs and other low vegetation. Stormwater from this pool channel flows into a 24-inch CMP and is conveyed underground along the length of Hoffer Park (approximately 400 feet) and discharges to the Swatara Creek.





This project proposes to remove the 24-inch CMP that conveys stormwater from the pool to the Swatara Creek and replace it with an approximately 300 feet by 50 feet bioretention basin that will extend the length of the park. The bioretention basin will allow stormwater to infiltrate rather than being discharged directly into the Swatara Creek.

When the existing pipe is excavated the trench will be backfilled with layers of bioretention bed components including engineered media, topsoil, and mulch. The basin will be planted with water-tolerant native plantings. Stormwater quality treatment will be provided when stormwater filters through the bed components and through biological and biochemical reaction with the soil matrix and around the root zones of the plants.

Along with the installation of the bioretention bed, the project will also restore and stabilize approximately 100 feet of Swatara Creek streambank during the removal of the existing outfall.

The proposed location of the bioretention basin within Hoffer Park is currently an unused section of the park, the lawn area between the parking lot and the property boundary with the neighboring industrial area. Therefore, the addition of this facility to the park will not affect any recreational activities at the park.

Susquehanna Street Park Infiltration – Stormwater in the Laurel Run PRP planning area flows north to south across the southernmost portion of the Borough. This proposed BMP project will install a small infiltration trench along the municipally-owned land north of Susquehanna Street to capture and infiltrate overland flow. The infiltration areas will be a shallow depression filled with sand and vegetative cover that function by trapping sediment and allowing runoff to infiltrate into the soil.

E.4 Other Reportable BMPs

Stormwater Inlet Cleaning - As part of on-going maintenance, the Borough routinely remove solids from their MS4s. However, at this time, no pollutant reduction has been allotted to storm sewer system solids removal because tracking of this removed material has not been to the degree required to accurately calculate the pollutant load reduction as described in the PADEP BMP effectiveness values. It is anticipated that as more detailed tracking of solids removed during routine maintenance occurs, this information may be used towards achieving the Borough's pollutant load reduction goals. Any solids removal tracking information that is obtained will be included in the Annual MS4 Status Reports.

Table 7: BMP Implementation Schedule

Site	BMP ID	BMP Type	Permitting & Engineering Design (Permit Year)	Construction/ Reporting (Permit Year)
Hoffer Park	BMP-1	Bioretention and Outfall Stabilization	3	4
Susquehanna St Park	BMP-2	Infiltration	1	2
Stormwater Inlet Cleaning	n/a	Solids Removal	n/a	All



SECTION F: IDENTIFY FUNDING MECHANISMS

Funding for the design and construction of the BMPs proposed herein will be funded through a variety of sources including the Borough's General Fund, available grants, and public donation of materials and manpower.

SECTION G: BMP OPERATIONS AND MAINTENANCE (O&M)

Stream Restoration/Riparian Restoration

Operation and maintenance requirements for the streambank stabilization and buffer 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 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 Borough 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 Borough shall be responsible for long term implementation of all Operation and Maintenance procedures to ensure the streambank stabilization and buffer improvements remain operationally functional and physically consistent with the original design.

Bioretention/Infiltration Areas

Operation and maintenance requirements for the bioretention projects include:

- Ensure disturbed areas are kept free of foot and/or vehicular traffic until full stabilization has occurred. Properly designed and installed Bioretention 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.
- Bioretention areas should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
- During periods of extended drought, Bioretention areas may require watering.
- Trees and shrubs should be inspected twice per year to evaluate health.

The contractor shall be responsible for the operation and maintenance of the bioretention basin until all features of the project have been successfully constructed to the specifications and design standards set forth by the Borough Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all plantings beginning after installation and inspection of all plants.

Once construction of the project(s) is complete, the Borough shall be responsible for long term implementation of all Operation and Maintenance procedures to ensure the basin remains operationally functional and physically consistent with the original design.



APPENDIX A

Public Participation Documentation

(<https://middletownborough.com/2017/07/notice-public-participation-public-meeting-chesapeake-bay-pollutant-reduction-plan/>)

Middletown Borough Chesapeake Bay Pollutant Reduction Plan

Notice of Public Participation & Public Meeting Notice from Patriot News (August 1, 2017)

5066452	
	Order Confirmation Ad Order Number 0008285881
Customer MIDDLETOWN BOROUGH AUTHORITY Account: 252567 MIDDLETOWN BOROUGH AUTHORITY 60 W EMAUS ST, MIDDLETOWN PA 17057 USA (717)902-3040 FAX: ltaylor@hrg-inc.com	Payor Customer MIDDLETOWN BOROUGH AUTHORITY Account: 252567 MIDDLETOWN BOROUGH AUTHORITY 60 W EMAUS ST, MIDDLETOWN PA 17057 USA (717)902-3040 <div style="text-align: right;"> <i>PO Number</i> <i>Sales Rep.</i> Marianna Aldridge <i>Order Taker</i> Marianna Aldridge <i>Order Source</i> Phone <i>Special Pricing</i> </div>
<i>Tear Sheets</i> 0 <i>Proofs</i> 0 <i>Affidavits</i> 1 <i>Blind Box</i> <i>Promo Type</i> <i>Materials</i> <i>Invoice Text</i>	<i>Net Amount</i> \$144.03 <i>Tax Amount</i> \$0.00 <i>Total Amount</i> \$144.03 <i>Payment Method</i> Invoice <i>Payment Amount</i> \$0.00 <i>Amount Due</i> \$144.03

Ad Schedule

<i>Product</i> The Patriot News <i># Inserts</i> 1 <i>Cost</i> \$136.53 <i>Ad Type</i> PA CLS Legal Liner <i>Pick Up #</i> <i>External Ad #</i> <i>Production Method</i> AdBooker <i>Run Dates</i> 08/01/2017	<i>Placement/Class</i> Main Legals <i>POS/Sub-Class</i> Misc Legal Notices <i>AdNumber</i> 0008285881-01 <i>Ad Size</i> 1 X 29 li <i>Ad Attributes</i> <i>Color</i> <NONE> <i>Production Notes</i> NOTIC25000FPUBLICPARTICIPATIONANDPUBLICMEETINGFORCHESAPEAKEBAYPOLLUTANTREDUCTIONPLANMI
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<i>Product</i> PennLive.com <i># Inserts</i> 1 <i>Cost</i> \$2.50 <i>Ad Type</i> PA CLS Legal Liner <i>Pick Up #</i> <i>External Ad #</i> <i>Production Method</i> AdBooker <i>Run Dates</i> 08/01/2017	<i>Placement/Class</i> Main Legals <i>POS/Sub-Class</i> Misc Legal Notices <i>AdNumber</i> 0008285881-01 <i>Ad Size</i> 1 X 29 li <i>Ad Attributes</i> <i>Color</i> <NONE> <i>Production Notes</i> NOTIC25000FPUBLICPARTICIPATIONANDPUBLICMEETINGFORCHESAPEAKEBAYPOLLUTANTREDUCTIONPLANMI
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Ad Content Proof

**NOTICE OF PUBLIC
PARTICIPATION AND PUBLIC
MEETING FOR
CHESAPEAKE BAY POLLUTANT
REDUCTION PLAN**

Middletown Borough hereby gives notice of the 30-day public comment period for its National Pollutant Discharge Elimination (NPDES) Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) Pollutant Reduction Plan (PRP). Best management practices (BMPs) are proposed in the Plan to satisfy PRP requirements for the Chesapeake Bay and local stream impairments. The plan is available on the municipal website (<https://middletownborough.com>) and a hard copy is available at the municipal office. The public is invited to review this document and provide written comments. The 30-day public comment period begins August 1, 2017 and ends August 31, 2017. The Plan will be discussed during the regularly scheduled municipal meeting on August 15, 2017 starting at 7PM, at the municipal building.

Meeting Minutes of Middletown Borough Council

August 15, 2017

The August 15, 2017, regular meeting of the Middletown Borough Council was called to order at 7:04 p.m. in Council Chambers at 60 W. Emaus Street, Middletown, Pennsylvania by Council President Damon Suglia.

After the Pledge of Allegiance, the following Council members answered roll call: Damon Suglia, Anne Einhorn, Ian Reddinger, Robert Reid, Dawn Knull and Diana McGlone. Absent: Benjamin Kapenstein. Also present were Mayor James Curry, III, Borough Manager Kenneth Klinepeter, Solicitor Esch McCombie, Director of Finance and Administration Kevin Zartman, Public Works Director Greg Wilsbach, Chief George Mouchette and Borough Secretary Grace Miller.

Public Comment:

Randy Bratina (329 Witherspoon Ave) – Mr. Bratina indicated his company does home repairs and was stopped and asked if he had a permit when he was doing an emergency roof repair. Mr. Bratina suggested the Borough look into implementing some type of building code exemption permit for repairs where contractors would register with the Borough each year and then have an exemption placard for their vehicle so the Borough would not have to review permit applications. Solicitor McCombie indicated if Council was interested he could look at the ordinance and see if it could be streamlined. President Suglia indicated that could be looked into. Councilor McGlone asked if Mr. Bratina would find it helpful if he received a list as to what permits are required. Mr. Bratina indicated that would be helpful.

Brett Stauffer (30 Carmany Ave) – Mr. Stauffer indicated he was representing Patricia Davis who has been dealing with water and sewer issues at the property at 30 Carmany Avenue for years as the polypropylene water line has continued to get pinholes. He needs to extend the sewer main and needs compaction rates and asked who he could talk to at the Borough to get additional information as to requirements and/or standards as he needs to contact Suez for water/sewer, Public Works for highway, and Codes. Mr. Ken Klinepeter asked Mr. Stauffer to contact him tomorrow at the Borough office and he would see he received the information requested.

Bob Houser (37 Brown Street) – Mr. House noted that he attended the anti-blight demonstration of polycarbonate sheeting on Adelia Street. Mr. Houser indicated he provided a 3 pound sledge hammer for the demonstration and it bounced off the sheeting. Mr. Houser indicated this would be a good step to prevent blight from starting.

Fair District PA Presentation - Carol Nechemias was in attendance to request Borough Council pass a Resolution in support of a Citizens Commission for legislative and congressional redistricting in order to reduce the impact of partisanship.

Kyrie Peay Presentation – Catherine Peay was in attendance to request Borough Council to show support and encouragement for her 3-year-old grandson, Kyrie Peay, who had open heart surgery by repeating the phrase Kyrie always says, "I'm smart, I'm strong, I'm brave and I can do anything" at the next Council meeting with Kyrie to be used by CBS21 at a community event

Meeting Minutes of Middletown Borough Council August 15, 2017

October 7 at Hoffer Park. Chief Mouchette has agreed to be the pit master. Council President Suglia asked Ms. Peay to arrange something using Mayor Curry as her contact.

MS4 Presentation – Jamie Eberl of HRG updated Council on MS4 changes in the Chesapeake Bay Pollutant Reduction Plan noting that the Borough will need to reduce BMP's 10% in the Swatara Creek and Laurel Run water shed areas due to 2 small impaired streams. Ms. Eberl presented proposed projects to meet this reduction suggesting the pipe be removed at Hoffer Park and plantings be added and to put in a small infiltration trench at Susquehanna Street Park. Councilor Reid asked about the flooding due to excess water from Penn State. Ms. Eberl explained that MS4 has to do with water quality permit regulations regarding sediment load related to impervious and pervious areas within the Borough and not with flooding issues. Ms. Eberl recommended working with Penn State regarding possible stream restoration which may help reduce flooding. Ms. Eberl noted that public comment ends at the end of August and the report is due on the 15th and implementation of the plan could start after DEP approval.

EIP Phase 3 Presentation – Nancy Hess was in attendance to update Council on discussions with staff regarding SOP's and job descriptions. Ms. Hess indicated job descriptions have changed since she started on the program and are still evolving and is currently working on maintenance and electric workers descriptions. Ms. Hess noted focus was to streamline customer service with a lean staff and recommended the front office person do more work to support Codes and hire a part-time person to focus on business who can fill in when staff is on vacation and can assist the Finance Department. Ms. Hess recommended a position be made for someone to help in the Codes area and other areas not covered allowing for additional support in areas such as MS4 and EMA. Staff has been working on a draft procurement policy SOP to implement so everyone is consistent with customers. Ms. Hess noted staff is very competent, expressing concerns that collection practices impacts staff morale and the time it takes to deal with delinquency issues. The delinquent payment policy will give staff direction in what to say and how to handle payment plans and other delinquent issues noting that she will give additional updates as the project progresses. Mr. Klinepeter indicated other municipalities bill owners for the tenants late payments and the Borough needs something more rigid in consistency so staff's time is not used to try to make payment arrangements. Ms. Hess indicated under that scenario the owner would be the primary contact with the municipality billing the tenant as a courtesy. Ms. Hess noted she is gathering data and will present options to Council at a later time.

Fire Company Presentation – James Wealand and Rich Seachrist were in attendance to request the fire tax be reinstituted for fire apparatus purchases noting that emergency apparatus needs replaced every 25 years and \$4.2 million would be the current replacement value between now and 2028. Councilor Knull asked if the Fire Company has fundraisers. Mr. Wealand noted there is an annual fund drive between Middletown and Royalton as well as a gun raffle, Christmas Tree sales and hall rentals indicating that FEMA has a grant process where the department has been awarded \$80,000 for vehicle exhaust systems. It was noted a generator may be needed which would cost \$150,000 and part of the roof needs replaced.

Meeting Minutes of Middletown Borough Council August 15, 2017

Camera Presentation – Detective Gary Rux informed Council of issues at the police station due to having different camera systems in place which makes it difficult to present crucial information for court cases. Detective Rux noted that the current car system does allow information to be retrieved but is cumbersome and only retains the information for 30 days. Charlie Reuter of IntermixIT indicated there is no easy way to retrieve video from the current system, the drive consistently fails and data has been lost. Mr. Reuter recommended a system that will not only be expandable but will upload video instantly through WiFi when the cruiser drives into the lot at the police station. President Suglia asked what the cost would be with Mr. Reuter noting the person who has the cost information was not present. Officer Tyler Zehring indicated the quote he received from 911 Rapid Response was \$223,000 for 4 vehicles totally equipped (1 sedan and 3 SUV's fully detailed and equipped) and cameras installed for the interview room, evidence room and lock up. Councilor Knull noted the camera system was to be combined with the parks and water sheds. Officer Zehring indicated the system quoted would not be capable of doing that as GTAC does not do outside surveillance. Mr. Reuter concurred noting that no system is able to integrate the two agencies. Officer Zehring noted the approximate cost of a camera per vehicle is \$5,000 and the Department has 6 vehicles. Mayor Curry noted the cost would be a procurement issue so would need bids. Detective Rux noted they would be dealing with an approved CoStars vendor. Councilor Knull recommended due diligence be done by looking into other companies.

Approval of Bills – **MOTION** by Dawn Knull, second by Anne Einhorn to approve payment of bills as shown on the Accounts Payable List dated August 11, 2017, for the period July 31, 2017 through August 11, 2017 and to approve payment of the ICDA bills as shown on the Accounts Payable List dated August 11, 2017 for the period July 19, 2017 through August 11, 2017 and to ratify approval of such bills already paid and to authorize the appropriate officials to take required actions to make said payments. Motion carried 6 to 0.

Manager Report – Mr. Klinepeter noted the Chesapeake Bay Pollutant Reduction Plan as presented by HRG calls for the implementation and funding of BMP's to meet the required reduction in pollutants discharged to the Bay by way of the storm sewer system. A pollutant reduction plan must be submitted to PaDEP as required by law and asked the item be placed on the agenda for approval. Council agreed.

Mr. Klinepeter indicated representatives from the USDA Wildlife Services conducted a trap and release program at the Susquehanna Street boat launch for the purpose of obtaining biological samples from wild ducks in order to test for certain diseases last year, and representatives will be performing this activity again sometime near the end of August or the beginning of September noting this is a 5 year program.

Parks and Recreation Program – Mr. Klinepeter indicated he had received a cost summary for the proposed Parks and Recreation Program as identified in the Peer to Peer Report funded by a DCNR grant. The cost summary provides two cost sharing alternatives one with level annual funding and the second illustrates "step funding" or increased funding each year over the term of the 5-year agreement. The current Olmsted Recreation Board is planning to meet in

Meeting Minutes of Middletown Borough Council August 15, 2017

September to discuss the feedback received from each municipality and the MASD. Mr. Klinepeter asked that Council provide either himself or Councilor Knull with any questions and feedback. Councilor Knull cautioned Council that the program does not include the pool and the Borough would be responsible for all costs associated with the pool such as chemicals, cleaning, repairs, lifeguards, etc. The program locks you in for 5 years and the pool costs approximately \$40,000 with no profit received. Councilor McGlone asked why the pool was not included in the program. Councilor Knull noted it was due to liability issues. Mr. Klinepeter noted the Borough currently pays for liability insurance, cleaning and maintenance of the pool and the other municipalities did not include it in the grant. Mr. Klinepeter asked if Council wanted to get involved in the Peer to Peer where they will manage and coordinate the program and open up school facilities for use. The program director will work with municipalities to write grants and collect fees. Councilor Knull noted the program would be geared more towards Middletown, Royalton and Lower Swatara residents. Councilor McGlone indicated she was in favor of the idea as parks are underutilized and there would be more local activities available. Mr. Klinepeter noted he liked the coordination aspects of the program but the pool is an issue.

Homestead Loan Program – Mr. Klinepeter noted an inquiry for a loan through the Homestead Loan Program was received. Ordinance 1239 provides for an executive committee to approve loans. The committee is to consist of one member of Council who will serve as the chairperson and four members of the general public, each of whom shall serve a four year term. The terms of all previous members have expired and the loan committee would need re-established. In addition, the process for dispersing the funds requires the Borough to make direct payments to the contractor on behalf of the loan recipients. The ordinance also calls for the Borough Secretary to promulgate policies for the validation of the applicant's credit worthiness and the appropriate cost of proposed code or home improvements in addition to being authorized to request information from the Executive committee to make a reasonable determination whether the loan should be approved. Mr. Klinepeter noted the ordinance places the Borough Secretary in a difficult situation in that this position is not skilled in matters of finance, banking or construction and should be moved to the Finance Department where loans can be put on automatic billing. Mr. Klinepeter recommended reviewing Ordinance 1239 for potential revisions regarding loan disbursement and the role of the Borough Secretary. Councilor McGlone indicated this would tie in with the Reinvestment Loan program and asked if the \$463,000 is separate from the Homestead Loan Program and whether the ordinance could be combined and keep the two programs separate. Solicitor McCombie indicated he would have Solicitor Santucci check. Mr. Klinepeter noted \$85,000 is available in the Homestead Loan Program. Mayor Curry asked how delinquent the loans were. Councilor Knull indicated loans in the amount of \$25,815 have been delinquent since 2012. Councilor Reid noted that the Borough would give out loans and wouldn't send reminders. Councilor Reddinger indicated the Borough is not a bank and does not have the staffing required for the program. Mr. Klinepeter agreed indicating staff is now dealing with MS4, Facebook and considerable time is spent researching right to know requests. Kevin Zartman noted the Finance Department can generate the bills but cannot generate amortization schedules. President Suglia recommended the program be put on the back burner. Councilor Reid asked if President Suglia was recommending not having the program. President Suglia indicated yes, that was what he recommends. Councilor McGlone

Meeting Minutes of Middletown Borough Council August 15, 2017

noted that Councilors Kapenstein, Einhorn and herself were in the process of evaluating the program. President Suglia indicated he did not want the program as an agenda item until answers to the questions posed as to who on staff can run the program and how to streamline it can be given to Council. Councilor Einhorn noted when the committee comes up with answers/ideas, they will then present it to Council. Mr. Zartman noted software and hardware will need upgraded in order to handle the program. Mr. Klinepeter recommended Mr. Zartman find out what the cost would be for the software upgrade.

Neighborhood Dispute – Mr. Klinepeter indicated an annual request for funding had been received from the Neighborhood Dispute Settlement requesting the Borough maintain the level of contribution at \$2,400.00 as was granted in 2017. Mr. Klinepeter recommended this be included as an agenda item for Council approval. Council concurred.

Mr. Klinepeter indicated he attended the Central Pa Blight Presentation at 236 Adelia Street on August 14, 2017. Representatives from SecureView, LLC demonstrated an alternative to using plywood to board up blighted properties known as clearboarding. SecureView markets itself as the leading security and building board up system as their product is designed to look like traditional windows and deter intruders while letting in natural light. SecureView claims to benefit homeowners, mortgage lenders, and communities by increasing the marketability of a property while simultaneously fighting community blight.

Winter Agreement with PennDOT – Mr. Klinepeter indicated a proposal was received from PennDOT for a 2017-2018 Municipal Winter Traffic Services Agreement. PennDOT encourages its municipal partners to assist them by way of this agreement in which Borough staff would be responsible for removing snow and ice from Union, Vine and Main Streets in town. The agreement would provide a payment to the Borough in the amount of \$9,127.55 which may be increased by PennDOT to offset and adjust for costs in severe winters. Councilor Einhorn asked if the Borough can keep the funds if they are not used. Mr. Greg Wilsbach noted the coordination of plowing is important as last year the Borough plowed and then PennDOT would come through and plow the roads closed. Mr. Klinepeter requested this be included as an agenda item for Council approval. Council agreed. Councilor Reddinger asked if there was an update on the talks with PennDOT regarding Ann Street. Mr. Klinepeter indicated he had not heard anything officially.

Mr. Klinepeter noted the Olmstead Recreation Board members have agreed to share the cost to purchase two needed replacement chemical feed pumps at the Middletown Pool. The Borough's share of the cost would be \$240. and recommended this be included as an agenda item for Council approval. Council concurred.

M&H Railroad - Mr. Klinepeter noted that M&H Railroad representatives had planned to attend the workshop to seek support for their plans to construct improvements to their rail line in Hummelstown and representatives had indicated they would not be able to attend tonight's meeting but would come to a meeting at a later date.

Meeting Minutes of Middletown Borough Council August 15, 2017

Woodland Hills - Mr. Klinepeter indicated a Developer's Agreement came today from Forino Company, LP for Lot 291 at Woodland Hills Phase I for the apartments. This is the same agreement as with H-T Partners and requested the agreement be included as an agenda item for approval. Council concurred.

Finance Report - Mr. Zartman noted staff had the first budget meeting on Monday July 31st. Budget request forms were distributed to the department managers and the process for the 2018 budget was discussed. Staff will meet again in September where the "bigger ticket" budget items for each department will be looked at. Mr. Zartman cautioned Council that the water/sewer concession agreement annual payment budgeted at \$725,000.00 for 2017 will be half that amount (\$362,500.00) for both 2017 and 2018 due to amendments leaving a hole in the 2017 budget which will need to be made up from water/sewer funds thereby reducing the cash balance in that fund. If the same approach is taken for 2018 it will further reduce the cash position in the water/sewer fund.

Capital Projects Committee: Mr. Zartman indicated the meeting that was scheduled for August to discuss capital projects was cancelled and will be rescheduled. In the interim, he and the Public Works Director will meet to begin work on the capital projects budget.

2018 Minimum Municipal Obligation: - Mr. Zartman noted that the Minimum Municipal Obligation is an annual budget activity required by law whereby the Borough must submit to the state the calculations showing the minimum required municipal contribution to the police and non-uniform pension funds for the next fiscal year. This report must be filed by September of each year and requested this be put on the meeting agenda for Council's approval. Council agreed.

Councilor McGlone asked when the budget meetings were scheduled. Mr. Klinepeter indicated Council of the whole would be scheduling special meetings to discuss the budget in October.

Public Works – Mr. Greg Wilsbach indicated staff has been busy cleaning up after the flood and Woodland Hills is looking for electric switch on within 60 days of when they start to build. Street lights will need to be moved on Sage Blvd. and the LED streetlight project is completed. Mr. Klinepeter noted a bid will need to be submitted for the Emaus Street extension. Mr. Wilsbach requested adding the Park Closing Ordinance to the agenda for approval to advertise. Mr. Klinepeter noted the Ordinance specifies dawn to dusk as the time frame for the parks with exceptions being those with lighted areas. The Ordinance also now allows the Borough Manager to delegate the responsibility of reserving parks if Council should decide to join in Peer to Peer. Council agreed this should be added to the agenda.

Mr. Wilsbach indicated staff painted curbs in high profile areas but with losing summer help on Monday, will try to work on them as able and will also work on painting crosswalks next year. Councilor Einhorn commented on how nice the business area looks. Councilor Reid asked if the areas around the planters could be washed off. Mr. Wilsbach indicated plugs had been ordered to place in the planters to alleviate the wash out of sediment. Councilor Reid commented on repairs needed on Adelia and Emaus Street. Mr. Wilsbach noted those areas would be addressed when the road planer is up and running.

Meeting Minutes of Middletown Borough Council August 15, 2017

Councilor McGlone indicated a resident contacted her about the Tiger Asian mosquitos. Mr. Wilsbach noted he could put a general notice out to employees to keep an eye out for standing water.

Police – Chief George Mouchette reported that Sergeants Dennis Morris and Scott Yoder went to training designed for corporate CEO's in New York.

Mayor James Curry, III presented Officer Rebecca Hulstine an award commending her on the sympathy, caring and professionalism she has shown during her service with the Middletown Police Department. Chief Mouchette presented Detective Gary Rux with an achievement award for exceptional community service commending him on his recent promotion to Detective noting Detective Rux is always willing to serve the community. Chief Mouchette noted that Detective Rux was the lead in reorganizing the entire property room with help from teammates. Chief Mouchette commended Officer Tyler Zehring for an outstanding job and an achievement award for having the most arrests in 2016 citing 99 arrests for the year. Chief Mouchette recognized Officer Wade Bloom as being his right hand man over the last few months where he can call Officer Bloom at any time and he will take care of the issue. Chief Mouchette noted that Officer Bloom has just been assigned to the supervisory shift stating that Officer Bloom is an exemplary police officer.

Mayor Curry ceremoniously swore Dennis Morris and Scott Yoder in as Sergeants in the Middletown Police Department. Chief Mouchette stated that Sergeant Yoder has been with the department for 19 years and singlehandedly started and funded the bike program. Sergeant Morris trained Officer Zehring and has shown the ability to teach and to lead. Mayor Curry noted that Sergeant Yoder has seen growth and development over the last 4 years and Sergeant Morris has been labeled as a work horse by 2 different Chiefs and congratulated both on their promotion to Sergeant.

Mayor Curry presented George Mouchette as the newly selected full-time Chief of Police noting that he shares Chief Mouchette's vision and ceremoniously swore Chief Mouchette in as the Chief of Police of Middletown Police Department.

Resolution to Support Nuclear Energy - Council President Suglia indicated the Resolution to Support Nuclear Energy would be tabled until the September workshop meeting.

Zoning Overlay – Mr. Klinepeter indicated the solicitor had been authorized to draft an ordinance of the Union Street zone as a trial to the Zoning Overlay and is asking if Council wants to include the area extending to the library in the zone and what year is being considered historic. Council Reddinger noted he is not in favor of the Zoning Overlay with Mayor Curry expressing concern about the scope of the overlay and its mandates citing one regarding being unable to put siding over bricks. Mayor Curry indicated the ordinance is counter intuitive to what Council is trying to do in protecting buildings. Solicitor McCombie noted the ordinance is drafted except for the two questions that were presented. Councilor Einhorn noted the Zoning Overlay

Meeting Minutes of Middletown Borough Council
August 15, 2017

standards are not the same as the National Register. Solicitor McCombie indicated the ordinance is mostly suggestions and recommended Council look at the language and then make a decision. Councilor Einhorn indicated she sees the ordinance as a guideline and Council needs to look at the requirements and make recommendations. Councilor McGlone indicated the ordinance is about preserving structures and working with the Historical Restoration Society recommending the library be included with the Union Street overlay. People come to look at the architecture of the town and would like the community to have an overall cohesive appearance. Councilor McGlone noted she did not want restrictions but does want to keep the look of the community. President Suglia suggested 100 years as the age for a historic property. Ms. Jenny Miller commented that Chapter 30 of the Codes clearly states the date as 75 years or older for the Historical Restoration Committee. Solicitor McCombie noted the year is solely for the look of the buildings not for a historical significance. Ms. Miller noted she would bring down a copy of the application. Councilor McGlone recommended 1945 or lower and would like the library included in the zone. Councilor Einhorn concurred. President Suglia requested the solicitor include the library in the zone. Councilor Reid recommended 1900 as the year with Solicitor McCombie noting that the year in question is for the Conditional Use Policy for demolition. Councilor Knull asked whether the ordinance addresses homes being made into apartments. Solicitor McCombie was not sure but indicated he would put the date as 1900/1945 and Council could then review the draft ordinance.

Adjournment –**MOTION** by Ian Reddinger, second by Dawn Knull to adjourn the meeting to Executive Session to discuss real estate, personnel and potential litigation issues. Motion carried unanimously and the meeting was adjourned at 9:41 p.m.



Grace Miller
Borough Secretary

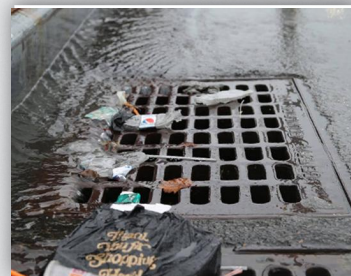


Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Middletown Borough
Chesapeake Bay Pollutant
Reduction Plan
(CBPRP)

August 15, 2017



2018 PAG-13

NPDES (National Pollutant Discharge Elimination System)
General Permit (PAG-13) for Stormwater Discharges from
Small Municipal Separate Storm Sewer Systems (MS4s)

Water Quality Permit

- Water quality directly related to installation of stormwater controls on developed land
- Goal - improve quality of local & downstream waters (Chesapeake Bay)

Most significant change from Prior PAG-13 Permit

- Pollutant Reduction Plans (PRPs) – local impaired waterways
- Chesapeake Bay Pollutant Reduction Plans (CBPRP)



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Watershed Planning Areas

Chesapeake Bay Watershed

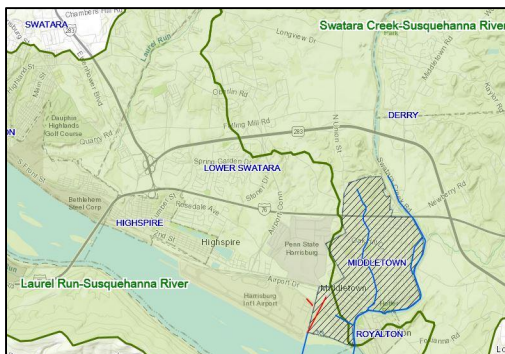
- Includes all Urbanized Area (UA) within Borough (hatched area)

Laurel Run – Susquehanna River Watershed

- Unnamed Tributaries to Susquehanna River (TSS)
- Unnamed Tributaries to Sherman Creek

Swatara Creek – Susquehanna River Watershed

- No Local Impairments



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Pollutant Reduction Requirements

CBPRP Planning Area (all Borough UA)

- Estimate existing Sediment (TSS), Total Phosphorus (TP), and Total Nitrogen (TN) loads to the Chesapeake Bay
- Identify BMPs to reduce pollutant loads by 10%, 5% and 3% respectively* within 5-year permit term

PRP Planning Area (Borough UA within Laurel Run watershed)

- Estimate existing TSS, TP, TN loads within Laurel Run Watershed
- Identify BMPs to reduce pollutant loads by 10%, 5% and 3% respectively* within 5-year permit term

**Presumptive approach in which a 10% sediment reduction is assumed to also result in a 5% TP reduction and a 3% TN reduction.*



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Existing Pollutant Loading

Sediment (TSS)

- Loose particles of clay, silt and sand
- Generated by natural weathering, accelerated erosion from development, and resuspension of previously eroded sediments stored in stream corridors.
- Excess TSS affects stream flows, degrades water quality, and negatively affects local and downstream habitats.
- Nutrients and chemical contaminants can bind with and be transported by sediment.

Sediment Measurement - "lbs/yr"

- Mass per unit area per unit time
- Model-based measure of water quality
- Not a literal pounds removed



Chesapeake Bay (2011)
Sediment transported after
Hurricane Irene & T.S. Lee



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Existing Pollutant Loading, Baseline

- **Borough UA** (2010 US Census)
1,309 acres
- **UA Land Use** (PADEP)
46% Impervious / 54 % Pervious
- **Dauphin County Developed Land Loading Rates** (PADEP)
1,999.14 lbs/ac/yr (Impervious) / 299.62 lbs/ac/yr (Pervious)

Baseline Pollutant Loading

Planning Area	UA (acres)	Pollutant Load TSS (lbs/yr)
CBPRP	1,309	1,415,227
Laurel Run PRP	176	190,370



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Existing Pollutant Loading, Adjusted

Parsed Areas

Existing Permittees

- PennDOT Roadways/PA Turnpike
- PAG-03s (General Permit for Stormwater Assoc. with Industrial Activities)
- Susquehanna Regional Airport
- PSU Harrisburg

Direct Discharge Areas - Areas that drain directly to a waterway without entering the Borough MS4.

Baseline Load Reductions

Existing BMPs - Previously installed structural BMPs located within the UA that provide water quality benefit.

- Impervious areas removed with FEMA hazard mitigation funding (Susquehanna St and Few Ave) counted as BMP.

Adjusted Pollutant Loading

Planning Area	UA (acres)	Pollutant Load TSS (lbs/yr)	Pollutant Load Reduction Goal TSS (lbs/yr)
CBPRP	781	805,757	80,573
Laurel Run PRP	66	13,700	1,370

Pollutant Load Reduction Strategy

Site	BMP Type	Planning Area	Drainage Area (acres)	Length (ft)	TSS Load Reduction (lbs/yr)
Hoffer Park	Bioretention and Outfall Stabilization	CBPRP	77	300	74,941
			n/a	100	4,488
Susquehanna Street Park	Infiltration	CBPRP/ Laurel Run	1.8	n/a	1,849
Total					81,278

Proposed BMP projects are examples of the scale and type of projects that will meet the Borough's permit-required pollutant load reduction.

Factors used to evaluate projects:

- Located entirely on Borough-owned property
- Large drainage area – 1 Large scale project general more cost-effective than multiple small scale projects
- Higher grant funding potential if projects can be linked with recreation improvements

DEP allows municipalities to change Pollutant Load Reduction Strategy's at any time as long as the new proposed BMPs will achieve the same pollutant load reductions.

- Annual Status Updates

Proposed BMPs

Susquehanna Street Park Infiltration

- Laurel Run Watershed planning area
- Infiltration BMP
 - Shallow depression filled with sand and vegetative cover
 - Functions by trapping sediment and allowing runoff to infiltrate into the soil
 - Estimated pollutant load Reduction – 1,849 TSS lbs/yr



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Proposed BMPs

Hoffer Park Bioretention

- Existing Conditions - Stormwater from northeast and northwest of the site is conveyed via the MS4 to a small pool located in the northeast corner of Hoffer Park. Runoff from this pool enters a pipe and is conveyed approx. 300 feet and is discharged to the Swatara Creek.
- Proposed BMP
 - Bioretention Basin** – Replace pipe with bioretention basin to filter runoff and allow stormwater to infiltrate rather than be conveyed directly to Swatara Creek.
 - Stream Restoration** – Repair and stabilize approx. 100 feet of streambank after removal of existing outfall.
 - Estimated pollutant load Reduction** – 74,941 TSS lbs/yr



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Timeline

- **Public comment period** **Aug 1-31, 2017**
- **Revise report** **Sept 1-14 2017**
- **Submit report** **Sept 15, 2017**
- **Implementation**
 - Start in 2018 when permit is approved
 - Complete in 2023 (5 years)
 - Preliminary cost estimate: \$400,000

Questions?



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

Record of Consideration

Comment #1

Received from: Kristen Kyler (PSU Harrisburg Agriculture and Environment Center)

Date: 7/31/17

Comment: Should the rain garden installed at the Borough Building recently count either as a “previously installed BMP” or towards proposed reductions? While not large, it is treating runoff. Page 9: Proposed BMPs, Laurel Run was misspelled as Lauren Run. If possible, on the maps of “Property Locations for FEMA Hazard Mitigation Home Demolition,” the property boundaries of those houses removed should be identified more clearly. It appears that the impervious surface is outlined in black but it is very hard to see.

Changes made to CBPRP in response to comment: Evaluated and added to Existing BMP list; spelling error corrected

Eberl, Jamie

From: Eberl, Jamie
Sent: Friday, August 11, 2017 8:27 AM
To: 'Kristen Kyler'
Subject: RE: Middletown CBPRP Comments

Thanks for the info Kristen, I will check it out while I am there next week.

Jamie Eberl, E.I.T.
Herbert, Rowland & Grubic, Inc.

From: Kristen Kyler [mailto:klk343@psu.edu]
Sent: Thursday, August 10, 2017 12:37 PM
To: Eberl, Jamie <jeberl@hrg-inc.com>
Subject: RE: Middletown CBPRP Comments

Hi Jamie,

It is a very small rain garden located next to the door at the back of the building. It is very obvious if you enter the building by that back door.

I wish I could attend that meeting but I will be in State College. Good luck and I hope you receive good feedback from the community.

Kristen

From: Eberl, Jamie [mailto:jeberl@hrg-inc.com]
Sent: Thursday, August 10, 2017 11:00 AM
To: Kristen Kyler <klk343@PSU.EDU>
Subject: Middletown CBPRP Comments

Hi Kristen,

Thank you for your comments on the Middletown Borough CBPRP. We will incorporate your suggestions into the final version of the report.

I was unaware of rain garden at the Borough Building. Can you describe in a little more detail where this rain garden is located? Is in in the Boro parking lot or is it across the street in the park? I will be discussing the CBPRP at the Boro Council meeting next week. While I'm there I will take a look at the rain garden so it can be included as an existing BMP in the final version of the report.

Jamie Eberl, E.I.T.
Civil Staff Professional II

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
717.564.1121 [phone]
717.561.1765 [fax]
jeberl@hrg-inc.com

www.hrg-inc.com

[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

From: Ken Klinepeter [<mailto:kklinepeter@middletownborough.com>]
Sent: Monday, July 31, 2017 4:02 PM
To: Letavic, Erin <eletavic@hrq-inc.com>; Eberl, Jamie <jeberl@hrq-inc.com>
Subject: FW: Middletown PRP

Erin and Jamie,

Forwarding you the first comments received regarding Middletown's PRP.

Kenneth Klinepeter
Borough Manager
Borough Of Middletown
60 West Emaus Street, Middletown, Pa, 17057
e-mail: kklinepeter@middletownborough.com
phone: 717.902.0706 fax: 717.902.3073
www.MiddletownBorough.com

From: Kristen Kyler [<mailto:klk343@psu.edu>]
Sent: Monday, July 31, 2017 2:50 PM
To: Ken Klinepeter
Subject: Middletown PRP

Hi Ken,

I just reviewed the Borough's PRP. The projects look like good ideas. Please see below for a few comments. I also wanted to let you know that as part of my role with Penn State, I will lead stormwater education programs for the public. If there is ever an interest in hosting an educational event, let me know and I will see how I can help.

Comments:

Should the rain garden installed at the Borough Building recently count either as a "previously installed BMP" or towards proposed reductions? While not large, it is treating runoff.

Page 9: Proposed BMPs, Laurel Run was misspelled as Lauren Run

If possible, on the maps of "Property Locations for FEMA Hazard Mitigation Home Demolition," the property boundaries of those houses removed should be identified more clearly. It appears that the impervious surface is outlined in black but it is very hard to see.

Kristen


Project Coordinator, Agriculture and Environment Center
Penn State University
107 Church Hall
777 West Harrisburg Pike
Middletown, PA 17057
Office: (717) 948-6609
klk343@psu.edu



APPENDIX B


Mapping





45000450
Feet

Mapping derived from data provided by Middletown Borough, PA DEP, PennDOT, US Census, and USGS.
9/7/2017 | PM: EGL | GIS: BLS | QA: MDW | R000516.0459

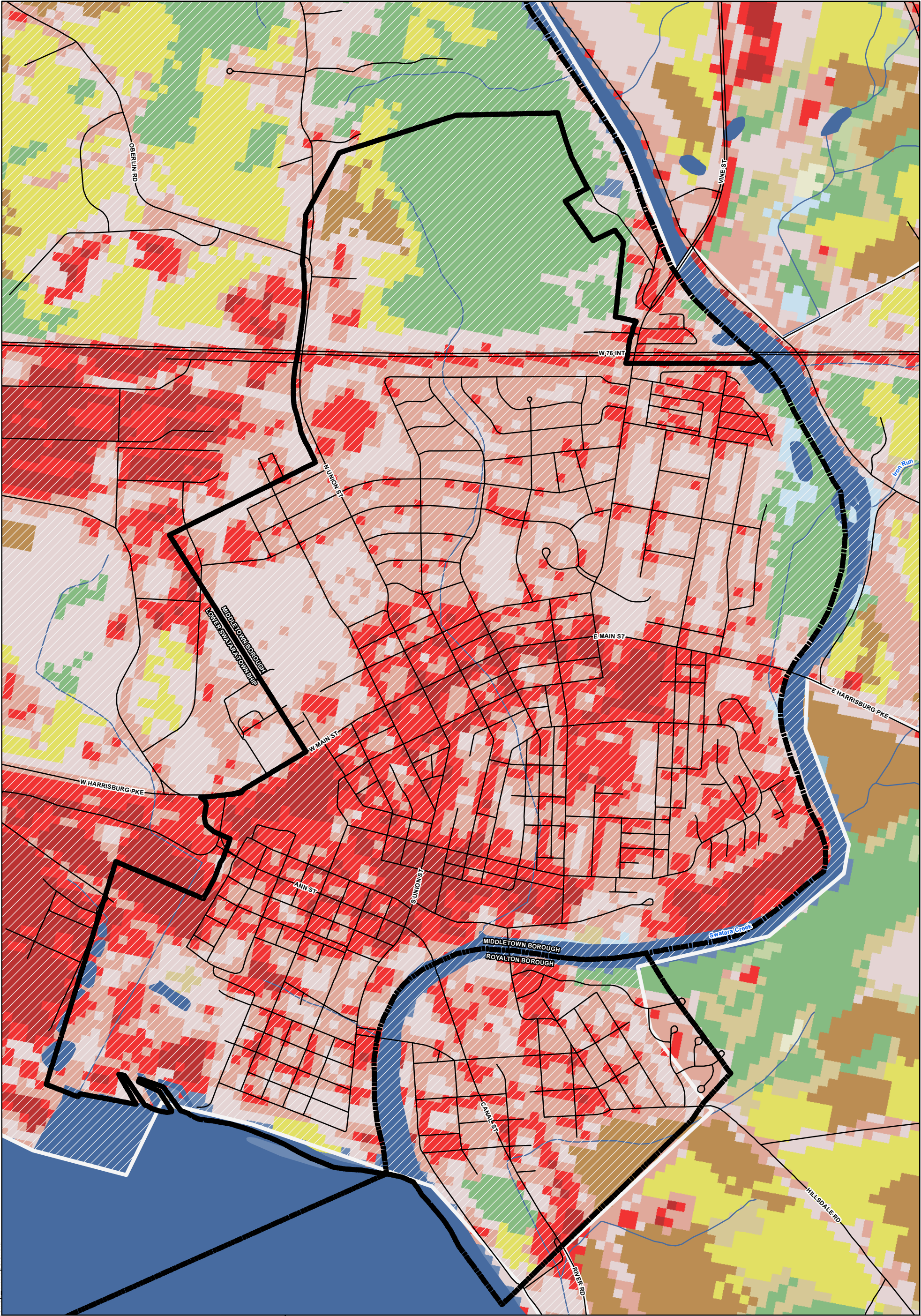



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717.564.1151 (phone)
717.564.1158 (fax)
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● Existing BMP	— Storm Gravity Main	▭ Municipal Boundary
● Proposed BMP	— State Road	▭ Urbanized Area (2010)
● Storm Outfall	— Local Road	▭ Paved Areas
● Storm Inlet	— Sediment Impaired Stream	▭ Watershed (HUC-12)
● Storm Manhole	— Non-Impaired Stream	

CBPRP Planning Area
Middletown Borough
Dauphin County, Pennsylvania

B-2





1,00001,000 Feet

Mapping derived from data provided by Dauphin County, USGS, US Census, and MRLC.

5/5/2017

PM: EGL












GIS: BLS/HMG

QA: HSH

R000257.0439

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
An Employee-Owned Company

**369 East Park Drive
Harrisburg, PA 17111
717.564.1121 [phone]
717.564.1158 [fax]
www.hrg-inc.com**

 Road	 Developed, Medium Intensity	 Shrub/Scrub
 Municipal Boundary	 Developed, High Intensity	 Grassland/Herbaceous
 Open Water	 Barren Land (Rock/Sand/Clay)	 Pasture/Hay
 Developed, Open Space	 Deciduous Forest	 Cultivated Crops
 Developed, Low Intensity	 Mixed Forest	 Woody Wetlands
		 Emergent Herbaceous Wetlands
		 Urban Areas (2010)

Land Use Map

Middletown Borough

Dauphin County, Pennsylvania

P:\0005\000516_0437\GIS\Projects\LandUseMap_11x17port.mxd



APPENDIX C

PADEP Municipal MS4 Requirements Table

MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Dauphin County						
LONDONDERRY TWP	PAG133547	No		Unnamed Tributaries to Conewago Creek	Appendix E-Organic Enrichment/Low D.O. (4a)	Other Habitat Alterations (4c)
				Unnamed Tributaries to Swatara Creek	Appendix E-Siltation (5)	
				Iron Run	Appendix E-Siltation (5)	
				Susquehanna River	Appendix C-PCB (5)	
				Conewago Creek	Appendix E-Nutrients, Siltation, Suspended Solids (4a)	
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Lynch Run	Appendix E-Siltation (4a)	Cause Unknown, Turbidity (4a)
LOWER PAXTON TWP	PAG133643	Yes	TMDL Plan	Slotznick Run		Cause Unknown (5)
				Asylum Run	Appendix B-Pathogens (5)	Water/Flow Variability (4c)
				Spring Creek		Cause Unknown (5)
				Susquehanna River	Appendix C-PCB (5)	
				Paxton Creek TMDL	TMDL Plan-Siltation, Suspended Solids (4a)	
				Paxton Creek	Appendix B-Pathogens (5)	Other Habitat Alterations, Water/Flow Variability (4c)
				Nyes Run	Appendix B-Pathogens (5)	
				Unnamed Tributaries to Nyes Run		Flow Alterations, Other Habitat Alterations (4c)
LOWER SWATARA TWP	PAG133543	No		Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Susquehanna River	Appendix C-PCB (5)	
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Burd Run		Cause Unknown (5)
				Unnamed Tributaries to Sherman Creek	Appendix E-Siltation (5)	Other Habitat Alterations (4c)
MIDDLE PAXTON TWP	PAG133688*	Yes	SP	Unnamed Tributaries to Susquehanna River	Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations (4c)
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Susquehanna River	Appendix C-PCB (5)	
MIDDLETOWN BORO	PAG133645	No		Unnamed Tributaries to Susquehanna River	Appendix E-Siltation (5)	Other Habitat Alterations (4c)
				Unnamed Tributaries to Sherman Creek	Appendix E-Siltation (5)	Other Habitat Alterations (4c)
				Susquehanna River	Appendix C-PCB (5)	
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
PAXTANG BORO	PAG133554	No		Susquehanna River	Appendix C-PCB (5)	
				Unnamed Tributaries to Spring Creek	Appendix E-Siltation (5)	
				Spring Creek		Cause Unknown (5)
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	

MS4 Name	Permit Number	HUC 12 Name	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)
Dauphin County				
LOWER PAXTON TWP	PAG133643	Beaver Creek	Nyes Run	Appendix B-Pathogens
		Laurel Run-Susquehanna River, Paxton Creek	Asylum Run, Paxton Creek, Paxton Creek TMDL	Appendix B-Pathogens, Appendix E-Siltation, Suspended Solids, TMDL Plan-Siltation, Suspended Solids
		Laurel Run-Susquehanna River, Paxton Creek, Spring Creek	Asylum Run, Chesapeake Bay Nutrients/Sediment, Paxton Creek, Paxton Creek TMDL	Appendix D-Siltation/Nutrients, Appendix E-Siltation, Suspended Solids, TMDL Plan-Siltation, Suspended Solids
		Laurel Run-Susquehanna River	Susquehanna River	Appendix C-PCB
		Beaver Creek, Swatara Creek-Susquehanna River	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients
LOWER SWATARA TWP	PAG133543	Laurel Run-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Susquehanna River, Unnamed Tributaries to Sherman Creek, Unnamed Tributaries to Susquehanna River	Appendix C-PCB, Appendix D-Siltation/Nutrients, Appendix E-Siltation
		Swatara Creek-Susquehanna River	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients
MIDDLE PAXTON TWP	PAG133688	Clark Creek, Cove Creek-Susquehanna River, Fishing Creek-Dauphin County, Fishing Creek-Perry County, Laurel Run-Susquehanna River, Stony Creek	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients
		Cove Creek-Susquehanna River, Laurel Run-Susquehanna River	Susquehanna River	Appendix C-PCB
MIDDLETOWN BORO	PAG133645	Laurel Run-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Susquehanna River, Unnamed Tributaries to Sherman Creek, Unnamed Tributaries to Susquehanna River	Appendix C-PCB, Appendix D-Siltation/Nutrients, Appendix E-Siltation
PAXTANG BORO	PAG133554	Laurel Run-Susquehanna River, Spring Creek	Chesapeake Bay Nutrients/Sediment, Unnamed Tributaries to Spring Creek	Appendix D-Siltation/Nutrients, Appendix E-Siltation
		Laurel Run-Susquehanna River	Susquehanna River	Appendix C-PCB
		Spring Creek	Unnamed Tributaries to Spring Creek	Appendix E-Siltation
PENBROOK BORO	PAG133555	Laurel Run-Susquehanna River	Susquehanna River	Appendix C-PCB
		Laurel Run-Susquehanna River, Paxton Creek	Asylum Run, Paxton Creek, Paxton Creek TMDL	Appendix B-Pathogens, TMDL Plan-Siltation, Suspended Solids
		Laurel Run-Susquehanna River, Paxton Creek, Spring Creek	Asylum Run, Chesapeake Bay Nutrients/Sediment, Paxton Creek, Paxton Creek TMDL, Unnamed Tributaries to Spring Creek	Appendix D-Siltation/Nutrients, Appendix E-Siltation, Suspended Solids, TMDL Plan-Siltation, Suspended Solids
ROYALTON BORO	PAG133641	Hartman Run-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Susquehanna River	Appendix C-PCB, Appendix D-Siltation/Nutrients
		Laurel Run-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Susquehanna River	Appendix C-PCB, Appendix D-Siltation/Nutrients
		Swatara Creek-Susquehanna River	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients
SOUTH HANOVER TWP	PAG133500	Beaver Creek	Unnamed Tributaries to Beaver Creek	Appendix E-Siltation
		Beaver Creek, Manada Creek, Swatara Creek-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Unnamed Tributaries to Beaver Creek	Appendix D-Siltation/Nutrients, Appendix E-Siltation
		Manada Creek, Swatara Creek-Susquehanna River	Manada Creek	Appendix B-Pathogens
STEELTON BORO	PAG133625	Beaver Creek, Manada Creek, Swatara Creek-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Unnamed Tributaries to Beaver Creek	Appendix D-Siltation/Nutrients, Appendix E-Siltation
		Laurel Run-Susquehanna River	Chesapeake Bay Nutrients/Sediment, Pennsylvania Canal, Susquehanna River, Unnamed Tributaries to Spring Creek, Unnamed Tributaries to Susquehanna River, Unnamed Tributaries to Swatara Creek	Appendix C-PCB, Appendix D-Siltation/Nutrients, Appendix E-Siltation



APPENDIX D

Existing Pollutant Loading Calculations

Appendix D – Table 1A: Existing Pollutant Load Calculation Summary, CBPRP Planning Area

Planning Area	Urbanized Area*					Loading Rate TSS** (lb/ac/yr)		Total Load TSS (lb/yr)
	UA (acres)	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
Middletown Boro CBPRP	1,309	46%	54%	602.0	706.7	1999.14	299.62	1,415,227
Parsed Areas (State Roads)	64	n/a	n/a	0.0	0.0	1999.14	299.62	90,508
Parsed Areas (Properties)	75	46%	54%	31.4	36.9	1999.14	299.62	80,878
Parsed Areas (PAG-03)	0.96	46%	54%	0.4	0.5	1999.14	299.62	1,038
Parsed Areas (Direct Drainage)	387.9	46%	54%	178.4	209.5	1999.14	299.62	419,476
Existing BMPs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	17,601
Adjusted Baseline Total	781							805,727

*PADEP - Statewide MS4 Land Cover Estimates

**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 1B: Existing Pollutant Load Calculation Summary, Laurel Run Planning Area

Planning Area	Urbanized Area*					Loading Rate TSS** (lb/ac/yr)		Total Load TSS (lb/yr)
	UA (acres)	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
Laurel Run	176	46%	54%	81.0	95.1	1999.14	299.62	190,370
Parsed Areas (State Roads)	1.63	100%	0%	9.6	0.0	1999.14	299.62	3,268
Parsed Areas (Properties)	70.3	46%	54%	32.3	38.0	1999.14	299.62	76,012
Direct Drainage	38.6	46%	54%	39.7	46.5	1999.14	299.62	93,217
Existing BMPs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4,173
Adjusted Baseline Total	66							13,700

*PADEP - Statewide MS4 Land Cover Estimates

**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 2A: Parsed Area Load Reductions - State Roadways (PennDOT), CBPRP Planning Area

Parsed Area (Roadway Name)	UA Length (ft)	UA Width (ft)	Road Surface Width (ft)	Urbanized Area					Loading Rate TSS* (lb/ac/yr)		Total Load TSS (lb/yr)
				UA (acres)	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
PA Turnpike	6,700	200	60	30.7	n/a	n/a	9.2	21.5	1999.14	299.62	24,901
Vine St	4,234.7	36	36	3.5	100%	0%	3.5	0.0	1999.14	299.62	6,993
E High St	2,180.7	40	40	2.0	100%	0%	2.0	0.0	1999.14	299.62	4,001
E Main St	6,735.1	42	42	6.5	100%	0%	6.5	0.0	1999.14	299.62	12,976
Adelia St	2,552.4	42	42	2.5	100%	0%	2.5	0.0	1999.14	299.62	4,918
Emaus St	3615	42	42	3.5	100%	0%	3.5	0.0	1999.14	299.62	6,965
S/N Union St	9,835.5	38	38	8.6	100%	0%	8.6	0.0	1999.14	299.62	17,145
Old Canal St	240.5	34	34	0.2	100%	0%	0.2	0.0	1999.14	299.62	375
Airport Dr	1438	36	36	1.2	100%	0%	1.2	0.0	1999.14	299.62	2,375
Ann St	2,790.1	36	36	2.3	100%	0%	2.3	0.0	1999.14	299.62	4,608
Wood St	825.2	38	38	0.7	100%	0%	0.7	0.0	1999.14	299.62	1,439
N Race St	2,597.5	32	32	1.9	100%	0%	1.9	0.0	1999.14	299.62	3,813
Total				63.6			42.1	21.5			90,509

*PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 2B: Parsed Area Load Reductions - State Roadways (PennDOT), Laurel Run Planning Area

Parsed Areas	Urbanized Area							Loading Rate TSS* (lbs/ac/yr)		Total Load TSS (lbs/yr)
	UA (acres)	Length (ft)	Width (ft)	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
Airport Drive	1.2	1,738	36	100%	0%	1.2	0.0	1999.14	299.62	2,375
Ann St	0.4	541	36	100%	0%	0.4	0.0	1944.85	299.62	893
Total	1.6					1.6				3,268

*PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 3A: Parsed Area Load Reductions – Private Properties, CBPRP Planning Area

Parsed Areas	Urbanized Area*					Loading Rate TSS** (lb/ac/yr)		Total Load TSS (lb/yr)
	UA (acres)	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
Susquehanna Regional Airport	68.3	46%	54%	32.4	38.01	1999.14	299.62	73,849
Penn State Harrisburg	6.5	46%	54%	2.99	3.51	1999.14	299.62	7,029
Total	74.8							80,878

* PADEP - Statewide MS4 Land Cover Estimates

**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 3B: Parsed Area Load Reductions – Private Properties, Laurel Run Planning Area

Parsed Areas	Urbanized Area*					Loading Rate TSS** (lb/ac/yr)		Total Load TSS (lb/yr)
	UA (acres)	% Imperv.	% Pervious	Imperv. (acres)	Pervious (acres)	Imperv.	Pervious	
Airport	68.3	46%	54%	32.34	38.01	1999.14	299.62	73,849
Penn State Harrisburg	2.0	46%	54%	0.92	1.08	1999.14	299.62	2,163
Total	70.3							76,012

* PADEP - Statewide MS4 Land Cover Estimates

**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D - Table 4: Parsed Area Load Reductions - PAG-03 Discharge of Stormwater Associated with Industrial Activities,

Site*	Permit Date	Site Address	Urbanized Area**					Loading Rate TSS*** (lbs/ac/yr)		Total Load TSS (lbs/yr)
			Acres	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
First Student Inc No 20576	11/19/15	461 Spruce St Middletown, PA	0.96	54%	46%	0.52	0.44	1944.85	308.31	1,829
Total										1,829

*As listed on EFACTS (6/2017)

**PADEP - Statewide MS4 Land Cover Estimates

***PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 6: Parsed Area Load Reductions – Direct Discharge Areas by Planning Area

Planning Area	Urbanized Area*					Loading Rate TSS** (lbs/ac/yr)		Total Load TSS (lbs/yr)
	UA (acres)	% Imperv.	% Perv.	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.	
Laurel Run PRP	38.6	46%	54%	39.5	46.5	1999.14	299.62	93,217
CBPRP	387.9	46%	54%	178.4	209.5	1999.14	299.62	419,475

*PADEP - Statewide MS4 Land Cover Estimates

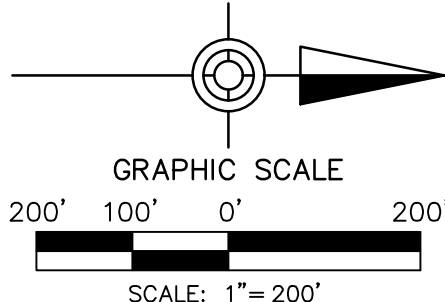
**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties

Appendix D – Table 7: Baseload Reduction Documentation - Previously Installed BMPs

Map ID	BMP Type	Location	Plan Date	Address	Lat	Long	Planning Area	Project Area (acres)	Drainage Area Characteristics				Loading Rate TSS** (lbs/ac/yr)		Total Load TSS (lbs/yr)	BMP Effectiveness ***	Pollutant Load Reduction TSS (lb/yr)
									% Imperv.	% Perv	Imperv. (acres)	Perv. (acres)	Imperv.	Perv.			
Ex-1	Underground Detention	Westporte Center	4/25/2011	North Wood St at Nissley St, Middletown	40.196875	-76.736186	CBPRP	13.94	46%	54%	6.41	7.53	1999.14	299.62	15,073.6	60%	9,044
Ex-2	Biofiltration Basin	AutoZone #6430	06/10/205	East Main St, Middletown	40.201029	-76.723084	CBPRP	0.81	46%	54%	0.37	0.43	1999.14	299.62	870.5	95%	827
Ex-3	Rain Garden	Municipal Office	2017	60 W Emaus St, Middletown	40.194954	-76.732642	CBPRP	0.05	46%	54%	0.02	0.03	199.14	299.62	54.1	90%	49
See Attached Map	Removed Impervious Area	Few Ave Properties	2013	Few Ave, Middletown	40.205555	-76.718266	CBPRP	2.09	100%	0%	2.09	0.00	1999.14	299.62	4,173	n/a	4,173
See Attached Map	Removed Impervious Area	Susquehanna St Properties	2013	Susquehanna St, Middletown	40.187807	-76.737832	CBPRP/ Laurel Run	1.78	100%	0%	1.78	0.00	1999.14	299.62	3,557	100%	3,557
Total																	17,650

*Plan on file in municipal office
**PADEP - Statewide MS4 Land Cover Estimates
***PADEP – BMP Effectiveness Values

IMPERVIOUS AREA = 90,920 SQ. FT



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

MIDDLETOWN BOROUGH
60 W. EMAUS STREET
MIDDLETOWN, PA 17057
(717) 902-0706

PROPERTY LOCATIONS
FOR
FEMA HAZARD MITIGATION HOME DEMOLITION
MIDDLETOWN BOROUGH DAUPHIN COUNTY PENNSYLVANIA

PROJ. MGR. - SMF
DESIGN- EGL
CADD- PMF
CHECKED- EGL
SCALE- 1" = 200'
DATE- JULY 2013

DRAWING NO.
EXH-1
SHEET NO.
1 OF 2
PROJECT R000516.0431

IMPERVIOUS AREA = 77,506 SQ. FT



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DESIGN— EGL
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CHECKED—EGL
SCALE— 1" = 200'
DATE— JULY 2013

DRAWING NO.
EXH-2
SHEET NO.
2 OF 2
PROJECT R000516.0431



APPENDIX E

Proposed BMP Pollutant Load Reduction Calculations



Appendix E – Table 1: Proposed BMPs

Site	BMP ID	BMP Type	Planning Area	Lat	Long	Drainage Area (acres)	Length (ft)	Drainage Area Characteristics				Loading Rate TSS* (lbs/ac/yr)		Total Load TSS (lbs/yr)	BMP Effectiveness **	Pollutant Load Reduction TSS (lb/yr)
								% Imperv.	Imperv. (acres)	% Perv.	Perv. (acres)	Imperv.	Perv.			
Hoffer Park	BMP-1	Bioretention	CBPRP	40.193040	-76.721918	77	300	46%	35.42	54%	41.58	1999.14	299.62	83,268	90%	74,941
		Stream Restoration				n/a	100	n/a	n/a	n/a	n/a	n/a	n/a	n/a	44.88 lb/ft	4,488
Susquehanna Street Park	BMP-2	Infiltration	CBPRP/Laurel Run	40.186689	-76.735464	1.8	n/a	46%	0.82	54%	0.97	1999.4	299.62	1,947	95%	1,849
Total																81,278

*PADEP - Statewide MS4 Land Cover Estimates
**PADEP PRP Instructions - Attachment B, Developed Land Loading Rates for PA Counties
***PADEP – BMP Effectiveness Values