



**CITY OF WILLIAMSPORT
MUNICIPAL SEPARATE STORM
SEWER SYSTEM (MS4) PROGRAM
OFFSITE COMPLIANCE AUDIT REPORT**

CITY OF WILLIAMSPORT
253 W 4TH STREET
WILLIAMSPORT, PA 17701

Audit Dates: October 28-30, 2020

Report Date: December 16, 2020

**U.S. Environmental Protection Agency, Region III
Water Protection Division
Office of NPDES Enforcement (3WP42)
1650 Arch Street
Philadelphia, PA 19103**

Report Prepared by:

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Table 1. Summary of Permit Requirements and Audit Observations

Program Element	Observations
Chesapeake Bay Restoration and Meeting Total Maximum Daily Loads (TMDLs)	The EPA Audit Team reviewed the City's submitted Chesapeake Bay Pollutant Reduction Plan (CBPRP) to address pollutant reduction measures. There were no significant observations made about this program element. A description of the City's CBPRP status at the time of the audit is included in the report.
Overall Program Management	The EPA Audit Team reviewed the City's MS4 program structure and implementation. There were no significant observations made about this program element. A description of the City's overall MS4 program is included in the report.
Minimum Control Measure (MCM) 3 (Illicit Discharge Detection and Elimination (IDDE))	Observation 1. The City is meeting the Permit-required frequency of screening outfalls "once during each permit coverage term". However, the frequency may not be sufficient to properly detect and eliminate dry weather flows. The City most recently conducted dry weather outfall screenings in 2016. Observation 2. The City had developed and implemented the <i>City of Williamsport Stormwater Management Ordinance</i> (2012), but the City lacked enforcement policy and procedures regarding illicit discharges.
MCM 4 (Construction Site Stormwater Runoff Control)	The EPA Audit Team reviewed the City's Construction Site Stormwater Runoff Control program. There were no significant observations made about this program element. A description of the program is included in the report.
MCM 5 (Post-Construction Stormwater Management)	Observation 3. The City does not have a process for routinely inspecting and ensuring maintenance of post-construction stormwater best management practices (BMPs). Observation 4. The City's ordinance does require installation and maintenance of post-construction BMPs. However, the City lacks the policy and procedures to enforce maintenance of BMPs. Observation 5. The City does not ensure that property owners are aware of private BMP maintenance obligations. Observation 6. The City's inventory of private/City-owned and operated post-construction stormwater BMPs is incomplete. Additionally, the inventory is missing information on dates of installation and dates of inspection/maintenance related activities.

Program Element	Observations
MCM 6 (Pollution Prevention and Good Housekeeping)	Observation 7. The City had not developed formal inspection procedures nor were they conducting inspections of municipal operations and facilities as a part of their operation and maintenance program. Observation 8. The City's past pollution prevention and good housekeeping trainings did not include all applicable City personnel.

TABLE OF CONTENTS

	Page
INTRODUCTION	2
CITY OF WILLIAMSPORT BACKGROUND	3
INFORMATION OBTAINED RELATIVE TO PERMIT REQUIREMENTS.....	4
CHESAPEAKE BAY POLLUTANT REDUCTION PLANS:.....	4
MINIMUM CONTROL MEASURE 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)	4
MINIMUM CONTROL MEASURE 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL	6
MINIMUM CONTROL MEASURE 5: POST CONSTRUCTION STORMWATER MANAGEMENT	6
MINIMUM CONTROL MEASURE 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING.....	9
 Appendix A: Pennsylvania Department of Environmental Protection <i>National Pollutant Discharge Elimination System General Permit for Discharges from Small Municipal Separate Storm Sewer Systems</i> (General Discharge Permit PAI134808 A-2)	
Appendix B: EPA Records Requests	
Appendix C: Exhibit Log	

INTRODUCTION

On October 28-30, 2020, staff from U.S. Environmental Protection Agency (EPA) Region 3 and EPA's contractor, PG Environmental (hereinafter, EPA Audit Team) conducted an offsite compliance audit of the municipal separate storm sewer system (MS4) program of the City of Williamsport, Pennsylvania (hereinafter, City or Permittee). Representatives of the Williamsport Sanitary Authority (WSA) and Pennsylvania Department of Environmental Protection (DEP) also attended the audit. Discharges from the City's MS4 are regulated by the National Pollutant Discharge Elimination System (NPDES) Individual Permit (IP) for Stormwater Discharges From Small Municipal Separate Storm Sewer Systems (MS4s) (Permit No. PAI134808 A-2; hereinafter, the Permit), effective April 1, 2014 – March 31, 2019 which has been administratively extended. This Permit includes the following co-applicants: City of Williamsport, Pennsylvania College of Technology, Old Lycoming Township, Borough of Montoursville, Hepburn Township, Fairfield Township, Lycoming Township, and Loyalsock Township. The City, along with Loyalsock Township applied for individual Permit coverage on October 1, 2018. At the time of the audit, the new Permit was under a public comment period. A copy of the existing Permit is included as Appendix A.

The purpose of this audit was to obtain information to assist EPA in assessing the City of Williamsport's compliance with the requirements of the Permit, as well as the implementation status of its current MS4 program. The presentation of audit observations in this report does not constitute a formal compliance determination or notice of violation.

The audit focused on the following Permit components:

- Overall Program Management
- Illicit Discharge Detection and Elimination (IDDE)
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management (PCSM) in New Development and Redevelopment
- Pollution Prevention and Good Housekeeping
- Pollutant Control Measures and Pollutant Reduction Plans (TMDL Implementation)

The EPA Audit Team obtained its information through a records review and a series of interviews via conference calls with Williamsport and WSA representatives. A copy of the EPA records request with Williamsport's response is included in Appendix B. The following primary representatives were involved in the audit:

City Representatives:	Mr. Jon Sander – Williamsport City Engineer Mr. Scott Dolan – City of Williamsport Administrative Foreman at Streets and Parks
WSA Representatives:	Ms. Marcia Lebeau – WSA Environmental Supervisor Ms. Wendy Walter – WSA Director of Compliance, Safety, and Security Mr. Michael Miller – WSA Executive Director
EPA Representatives:	Ms. Kaitlin McLaughlin – EPA Region 3

PADEP Representatives: Ms. Anne Hughes – Pennsylvania DEP Environmental Group Manager
Mr. Brandon Shihinski – Pennsylvania DEP Water Quality Specialist

EPA Contractors: Mr. Steven Chase, PG Environmental
Mr. Taylor Fontaine, PG Environmental

CITY OF WILLIAMSPORT BACKGROUND

The City encompasses approximately 9 square miles of land in north-central Pennsylvania with the West Branch Susquehanna River serving as the southern boundary. According to the 2010 U.S. Census, the total population of the City is 28,186. The City comprises approximately 25% industrial/commercial land and 75% residential and operates a combined sewer system (CSS) that collects both sanitary sewage and stormwater. The City currently has 40 stormwater outfalls and 162 miles of storm sewer. The City is located within the Chesapeake Bay and Susquehanna River watersheds. Locally, the City's primary receiving waters are the Susquehanna River, Daugherty Run, Fox Hollow Run, Spring Run, Lycoming Creek, Cemetery Run, Grafius Run, and McClures Run.

At the time of the audit, the City had in place a service agreement with WSA to handle administrative aspects of the Permit (e.g., annual report development, tracking of MS4 program goals). The City is responsible for the implementation and execution of the MS4 program and is ultimately responsible for Permit compliance. The City and WSA were in discussions about transferring all responsibilities of the MS4 program and Permit to WSA by establishing a stormwater utility. At the time of the audit, no timeline for this transition had been established. City representatives explained that currently the City's General Fund supports stormwater management projects and operational costs associated with implementing the MS4 program, including fees for MS4 administrative services provided by WSA.

The City has a Public Service Agreement (PSA) with WSA and Memorandums of Understanding (MOUs) with WSA, Loyalsock Township, and the County of Lycoming and Clean Water Institute of Lycoming College, which establish a basis for cooperation between the entities and the City in implementing the Permit requirements.

On December 21, 2017, WSA agreed to administer the MCMs on behalf of the City as part of a PSA (refer to [Appendix C, Exhibit 1](#)). The 2020 amended PSA with WSA (dated August 12, 2020) clarifies the roles, responsibilities, and specifically states that while WSA is responsible for the administrative services, they are not ultimately responsible for MS4 Permit compliance. This responsibility falls to the City. In an MOU with the Lycoming County and Clean Water Institute of Lycoming College, these entities agree to provide stormwater outfall survey field work and laboratory testing for all applicants listed in the Permit to include the City.

INFORMATION OBTAINED RELATIVE TO PERMIT REQUIREMENTS

During the audit, the EPA Audit Team obtained documentation and other supporting evidence regarding compliance with the Permit. Referenced documentation used as supporting evidence is provided in Appendix C, Exhibit Log.

The EPA Audit Team provided the City with a written list of requested records on October 6, 2020 (refer to Appendix B), for review prior to the audit. The City made MS4 program-related documents available electronically to the EPA Audit Team on October 15, 2020. Following the audit discussions, the EPA Audit Team did not have any additional documentation requests.

The following sections describe and outline Permit requirements and observations made during the audit.

CHESAPEAKE BAY POLLUTANT REDUCTION PLANS:

Permit Part C.3.a states that the permittee, “Shall within twelve (12) months of the effective date of the Approval of Coverage, develop and submit to DEP for approval a Chesapeake Bay Pollutant Reduction Plan, including a schedule, to implement BMPs to reduce nitrogen, phosphorus, and sediment associated with existing stormwater discharges into regulated small MS4s discharging to receiving waters tributary to the Chesapeake Bay.”

As part of the pre-audit records request, City representatives provided the EPA Audit Team with a copy of the City’s most recent draft of the Chesapeake Bay Pollutant Reduction Plan (CBPRP) (refer to Appendix C, Exhibit 2). The City’s CBPRP was initially submitted to Pennsylvania DEP on October 1, 2018. After developing an amended version in August 2020, the CBPRP’s public comment period took place August 3, 2020 through September 2, 2020 and was submitted to Pennsylvania DEP for final approval on September 18, 2020. At the time of the audit, the plan was still pending approval from the State prior to implementation.

MINIMUM CONTROL MEASURE 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

Permit Appendix A, MCM#3, BMP#4 states, “Following the IDD&E program created pursuant to BMP #1, the permittee shall conduct outfall field screening, identify the source of any illicit discharges, and remove or correct any illicit discharges using procedures developed under BMP #1 ... For renewal permittees, each of the identified regulated small MS4 outfalls shall be screened at least once during each permit coverage term. For areas where past problems have been reported or known sources of dry weather flows occur on a continual basis, outfalls shall be screened annually.”

Observation 1: The City is meeting the Permit-required frequency of screening outfalls “once during each permit coverage term”. However, the frequency may not be sufficient to properly detect and eliminate dry weather flows. The City most recently conducted dry weather outfall screenings in 2016.

As part of the pre-audit records request, City representatives provided the EPA Audit Team with a copy of their 2016 Outfall Screening Summary Report as well as their outfall map (dated September 2, 2020) (refer to Appendix C, Exhibits 3 and 4). Staff from the Clean Water Institute of Lycoming College conducted the screening of 40 outfalls, noting the outfall reference number, GPS coordinates, description, and a photograph of each outfall. The outfall map provided by the City includes information gathered during the 2016 outfall screening in addition to identification of the City's eight (8) primary receiving waters.

The EPA Audit Team reviewed in detail the Outfall Screening Summary report and noted that Outfalls WB01, WB10, WB18, WB19, WB21 and LY06 were noted as having dry weather flows. No subsequent investigation was conducted of these dry weather flows. Further, these outfalls were not subsequently screened annually as required by the Permit. Additionally, the EPA Audit Team noted that several outfalls that were determined to have "no flow" were submerged during the 2016 Outfall Screening. City representatives were unable to explain to the EPA Audit Team how conditions of no flow were determined on the submerged outfalls (refer to Appendix C, Exhibits 3).

The City has not been actively screening the outfalls since 2016. It may benefit the City to take a more proactive approach in these outfall screenings.

Permit Appendix A, MCM#3, BMP#5 requires that the Permittee, "Enact a stormwater management ordinance to implement and enforce a stormwater management program (SWMP) that includes prohibition of non-stormwater discharges to the regulated small MS4." Additionally, Permit Appendix A, MCM#3, BMP#1 states the Permittee, "shall develop and implement a written program for the detection, elimination, and prevention of illicit discharges into your regulated MS4s."

Observation 2: The *City of Williamsport Stormwater Management Ordinance* (hereinafter, Ordinance) was enacted on April 15, 2012. The City provided the EPA Audit Team with a copy of the ordinance prior to the audit (refer to Appendix C, Exhibit 5).

The Ordinance describes unauthorized (illicit) discharges, and allows for penalties of up to \$300 per day per violation. The EPA Audit Team noted the City's IDDE plan designates enforcement responsibility of the Ordinance to the Stormwater Management Enforcement Officer but does not outline policies, procedures, or guidance on how or when enforcement should be conducted.

City representatives explained that compliance with the Ordinance to date has been achieved through informal enforcement actions such as verbal warnings. At the time of the audit, City representatives were unaware of any formal

enforcement actions ever undertaken by the City since the Ordinance had been enacted.

MINIMUM CONTROL MEASURE 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Permit Appendix A, MCM#4, BMP#1 states that the permittee must “Develop your program consisting of all procedures necessary to comply with the requirements of this MCM. Your program shall provide for construction stormwater permitting, construction inspection, and enforcement of installation and maintenance of the necessary Erosion and Sedimentation (E&S) control measures. Your program shall describe clearly how your program will be coordinated with DEP’s NPDES Construction Stormwater Permitting program.”

At the time of the audit, construction site plans submitted to the City were provided to the City Zoning Officer who would confer with the City Engineer for stormwater measures consistency and compliance. If there were any revisions required, these would be sent to the City Engineer. At the time of the audit, the EPA Audit Team did not find any observations of note related to Minimum Control Measure 4: Construction Site Stormwater Runoff Control.

MINIMUM CONTROL MEASURE 5: POST CONSTRUCTION STORMWATER MANAGEMENT

Permit Appendix A, MCM#5, BMP#1 states that the permittee shall, “Develop a written procedure that describes how the permittee shall address all required components of this MCM. Guidance can be found in the Pennsylvania Stormwater Best Management Practices Manual. This plan shall include the following components:

- a. Minimum requirements for use of structural and/or non-structural BMPs in plans for development and redevelopment;
- b. Criteria for selecting and standards for sizing stormwater BMPs;
- c. Implementation of an inspection program to ensure that BMPs are properly installed.”

Observation 3: At the time of the audit, the City had not developed and implemented a documented routine inspection program for ensuring maintenance of City-owned or private post-construction stormwater BMPs. During audit discussions, City representatives stated that private post-construction stormwater BMPs are primarily inspected on an as-needed reactive basis. City representatives added that in June 2020, the City Engineer conducted inspections at each of the City-owned and private post-construction stormwater BMPs included in the City’s current inventory, but this appeared to the Inspection Team to be a one-time occurrence. The June 2020 inspections were not documented or conducted under formal procedures. Furthermore, City representatives stated that the City has never enforced maintenance requirements for private post-construction BMPs.

City representatives stated that the City had 29 publicly owned post-construction stormwater BMPs that were maintained by the Parks and Streets Departments on an as needed basis, but that maintenance and inspection were not specifically documented for Permit compliance.

Permit Appendix A, MCM#5, BMP#6 requires the permittee to, “Ensure adequate Operation and Maintenance (O&M) of all post-construction stormwater management BMPs installed at all qualifying development or redevelopment projects (including those owned or operated by the permittee).

Measurable Goal - 1: Within the first year of coverage under this permit, new permittees shall develop and implement a written inspection program to ensure that stormwater BMPs are properly operated and maintained. The program shall include sanctions and penalties for non-compliance. All permittees shall review and update the inspection program annually and shall continue to implement this BMP.”

Observation 4: The City’s Ordinance requires installation and maintenance of post-construction BMPs. According to Article 1395.02, Operation And Maintenance Agreements of the Ordinance, “The owner is responsible for operation and maintenance of the SWM BMPs. If the owner fails to adhere to the operation and maintenance agreement, the City of Williamsport may perform the services required and charge the owner appropriate fees. Non-payment of fees may result in a lien against the property.

Each stormwater management plan shall contain provisions which clearly set forth the ownership and maintenance responsibility of all permanent storm water management, and erosion and sediment control facilities. Including:

- a. Description of maintenance requirements.
- b. Establishment of suitable easements for access to all facilities by public officials, in accordance with this Article.
- c. Municipalities are exempt from the requirement to sign and record an operation and maintenance agreement.
- d. Identification of the responsible party or entity for ownership and maintenance of both temporary and permanent stormwater management, and erosion and sediment pollution control facilities. In meeting this requirement, the following options are hereby provided for upon approval by the City of Williamsport.

Facilities may be incorporated within individual lots so that the respective lot owners will own and be responsible for maintenance in accordance with recorded deed restriction. A description of the facility or system and the terms of the required maintenance shall be incorporated as part of the deed to the property.”

However, the City does not have policies, procedures or guidance on how or when enforcement of the ordinance should be conducted or a plan to ensure private landowners are aware of and following maintenance agreements. At the time of the audit, City representatives were unaware of any formal enforcement actions ever undertaken by the City since the Ordinance had been enacted.

Observation 5: At the time of the audit, the City did not have language/documentation to ensure that property owners were aware of private BMP maintenance obligations. According to the Ordinance Article 1395.02(d), *Operation And Maintenance Agreements*, “A description of the facility or system and the terms of the required maintenance shall be incorporated as part of the deed to the property.”

During audit discussions, City representatives stated that they followed General Provisions of the *Pennsylvania Code* (refer to Appendix C, Exhibit 6), Chapter 102.8.(m)(2), post construction stormwater management (PCSM) long-term operation and maintenance requirements (pdf. p. 24) which states, “For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance for PCSM BMPs and provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the notice of termination under § 102.7(b)(5) (relating to permit termination).”

During inspection discussions, City representatives stated that Lycoming County implemented Chapter 102 provisions and attached maintenance requirements to property deeds for projects over one acre. In some cases, the City’s Ordinance requires PCSM BMPs on projects less than one acre. For example, City PCSM BMP requirements are triggered by the City Ordinance for projects over 5,000 square feet, but not required by County, the City implements maintenance requirements in these cases. However, City representatives stated that in instances where Chapter 102 PCSM BMP requirements were not triggered but City PCSM BMP requirements were triggered, the City had no means to attach maintenance requirements to property deeds. In these instances, maintenance requirements are included in the initial site plans. However, these maintenance requirements were not attached to the property in perpetuity and it was unclear to the EPA Audit Team if the City had the ability to enforce these property specific maintenance requirements attached to initial site plans.

Permit Appendix A, MCM#5, BMP#6, Measurable Goal 2 states that, “An inventory of PCSM BMPs shall be developed by permittees and shall be continually updated during the term of coverage under the permit as development projects are reviewed, approved, and constructed. This inventory shall include all PCSM BMPs installed since March 10, 2003 that discharge directly or indirectly to your regulated small MS4s. The inventory also should include PCSM BMPs discharging to the regulated small MS4 system that may cause or contribute to violation of water quality standard. The inventory shall include:

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

Observation 6: At the time of the audit, the City’s inventory of private/City-owned and operated PCSM BMPs was incomplete. As part of the pre-audit records request, the City provided a document titled, “*The City of Williamsport Inventory of Development and [Redevelopment] Projects Authorized for Construction that Discharge Stormwater into an MS4 (March 2003 - Present)*” (refer to Appendix C, Exhibit 7). This inventory was last updated on June 24, 2020 and was initially provided to the City by the County of Lycoming Conservation District. The inventory listed approximately forty-five (45) City-owned and private projects and associated PCSM BMPs within the City. While the inventory included information on the specific type of PCSM BMP and approximate latitude/longitude, the City did not include all of the information required by the Permit including installation date, required maintenance, and associated inspection/maintenance activities. Additionally, it should be noted that this initial list only included projects that triggered Chapter 102 PCSM BMP requirements and not PCSM BMPs required solely by the City ordinance. WSA and the City have been working to fully complete the list in guidance with Permit requirements. City representatives stated they were unaware of how many of these City-triggered PCSM BMPs may exist and had no means to catalog them.

MINIMUM CONTROL MEASURE 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING

Due to COVID-19, the audit was conducted remotely; therefore, specific issues related to the onsite conditions of City facilities were not evaluated as a component of the audit. Observations are based on discussions with City representatives and document review.

Permit Appendix A, MCM#6, BMP#2 states that the permittee shall, “Develop, implement and maintain a written operation and maintenance (O&M) program for all municipal operations and facilities that could contribute to the discharge of pollutants from the regulated small MS4s, as identified under BMP #1. This program (or programs) shall address municipally owned stormwater collection or conveyance systems, but could include other areas (as identified under

BMP #1). The O&M program(s) should stress pollution prevention and good housekeeping measures, contain site-specific information, and address the following areas:

- a. Management practices, policies, procedures, etc. shall be developed and implemented to reduce or prevent the discharge of pollutants to your regulated small MS4s. You should consider eliminating maintenance-area discharges from floor drains and other drains if they have the potential to discharge to storm sewers.
- b. Maintenance activities, maintenance schedules, and inspection procedures to reduce the potential for pollutants to reach your regulated small MS4s. You also should review your procedures for maintaining your stormwater BMPs.
- c. Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt / sand (anti-skid) storage locations and snow disposal areas.
- d. Procedures for the proper disposal of waste removed from your regulated small MS4s and your municipal operations, including dredge spoil, accumulated sediments, trash, household hazardous waste, used motor oil, and other debris.”

Observation 7: At the time of the audit, the City had not developed formal inspection procedures nor were they conducting inspections of municipal operations and facilities as a part of their operation and maintenance program. As part of the pre-audit records request, City representatives provided the EPA Audit Team with a copy of their *Pollution Prevention and Good Housekeeping Municipal Operations And Maintenance Plan* (refer to [Appendix C, Exhibit 8](#)). This Plan (pdf. p. 2) includes language regarding keeping records of inspections and documenting inspections “on an appropriate form”. However, at the time of the audit, the City was not regularly conducting inspections of municipal operations and facilities or documenting existing inspection activities. Furthermore, the City had not developed a standard inspection form in order to document these inspection activities. As mentioned previously, due to COVID-19, the EPA Audit Team did not visit any City-owned facilities to verify and evaluate site conditions.

Permit Appendix A, MCM#6, BMP#3 states that the permittee shall, “Develop and implement an employee training program that addresses appropriate topics to further the goal of preventing or reducing the discharge of pollutants from municipal operations to your regulated small MS4s. The program may be developed and implemented using guidance and training materials that are available from federal, state or local agencies, or other organizations. Any municipal employee or contractor shall receive training. This could include public works staff, building / zoning / code enforcement staff, engineering staff (on-site and contracted), administrative staff, elected officials, police and fire responders, volunteers, and contracted personnel. Training topics should include operation, inspection, maintenance and repair activities associated with any of the municipal operations / facilities identified under BMP #1. Training should cover all relevant parts of the permittee’s overall stormwater management program that could affect municipal operations, such as illicit discharge detection and elimination, construction sites, and ordinance requirements.”

Observation 8: The City’s past pollution prevention and good housekeeping trainings were not provided to all applicable City personnel (i.e., police, fire department, and contractor personnel). As part of the pre-audit records request, City representatives provided the EPA Audit Team with a copy of the attendance log from their 2019 and 2020 training events (refer to Appendix C, Exhibits 9 and 10). The City’s *Pollution Prevention and Good Housekeeping Municipal Operations And Maintenance Plan*, Requirement 3, Develop Employee Training Schedule and Program (pdf. p. 4) states, “The City routinely completes the following trainings as they pertain to activities completed by City employees within the small regulated MS4:

- Provide on-site training for new Personnel/Contractor conducted in an informal manner with hands-on training.
- Train all personnel involved in activities with pollution potential.
- Train relevant emergency personnel in proper spill responses. The local Fire Departments are called in for spills (all fire departments have Hazmat training). The municipality has an Emergency Management Coordinator on staff; he is trained quarterly through Lycoming County’s Department of Public Safety.”

However, the City did not ensure that representatives from all municipal departments attended these training events as required by the Permit and as stated in the City’s training program plan. Additionally, while local fire departments are stated as receiving hazardous materials (HAZMAT) training, it does not appear they are receiving pollution prevention and good housekeeping-specific training. The City should be incorporating representatives from all municipal departments to these training events to educate personnel on preventing or reducing the discharge of pollutants from municipal operations.

Appendix A

Commonwealth Of Pennsylvania
Department of Environmental Protection
Approval of NPDES MS4 Individual
Permit (IP) Coverage (NPDES Permit No:
PAI134808 A-2)



APPROVAL OF NPDES MS4 INDIVIDUAL PERMIT (IP) COVERAGE

UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) INDIVIDUAL PERMIT (IP) FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

NPDES PERMIT NO: PA1134808 A-2

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Sections 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, *as amended*, 35 P.S. Section 691.1 *et seq.*, the Pennsylvania Department of Environmental Protection (DEP) hereby approves coverage for an NPDES MS4 Individual Permit pursuant to the application submitted by:

APPLICANT(S) (NAME AND ADDRESS):

WATERSHED(S):

City of Williamsport
245 West 4th Street
Williamsport, PA 17701

Pennsylvania College of Technology
One College Avenue
Williamsport, PA 17701

Old Lycoming Township
1951 Green Avenue
Williamsport, PA 17701

10-A, 10-B, and
10-D

Borough of Montoursville
617 North Loyalsock Avenue
Montoursville, PA 17754

Hepburn Township
3662 Pleasant Valley Road
Cogan Station, PA 17728

Fairfield Township
834 Church Road
Montoursville, PA 17754

Lycoming Township
328 Dauber Road
Cogan Station, PA 17728

Loyalsock Township
2501 E. Third Street
Williamsport, PA 17701

to discharge stormwater to surface waters of the Commonwealth.

This approval to discharge is made subject to DEP's enclosed Authorization to Discharge Under the NPDES Individual Permit for Discharges of Stormwater from Small MS4s. **This Authorization is granted** based, in part, on information provided by the permittee in the IP Application. **The information provided by the person seeking the authorization, including all appendices, attachments, plans and supporting documentation, is incorporated by reference as a part of this Approval of NPDES MS4 IP Coverage and is enforceable as a condition of the authorization.** If there is a conflict between the permit and the IP Application, **including any appendices, attachments, plans and other supporting documentation, the more environmentally stringent provisions apply.**

THIS PERMIT SHALL BECOME EFFECTIVE ON APRIL 1, 2014

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON MARCH 31, 2019

OR UPON TERMINATION OF THIS PERMIT IN WRITING BY DEP. TO CONTINUE DISCHARGING AFTER THE EXPIRATION DATE FOR COVERAGE UNDER THIS INDIVIDUAL PERMIT, AN ADMINISTRATIVELY COMPLETE AND ACCEPTABLE APPLICATION MUST BE RECEIVED BY DEP NO LATER THAN 180 DAYS PRIOR TO THE COVERAGE EXPIRATION DATE. (SEE ITEM #6 ON PAGE 1 OF THE AUTHORIZATION TO DISCHARGE FOR FURTHER INFORMATION).

DATE PERMIT ISSUED MARCH 7, 2014

ISSUED BY /s/

DATE AMENDMENT ISSUED SEPTEMBER 27, 2018

Thomas M. Randis
Clean Water Program Manager
Northcentral Regional Office



AUTHORIZATION TO DISCHARGE

UNDER THIS NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) INDIVIDUAL PERMIT (IP) FOR DISCHARGES OF STORMWATER FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

GENERAL PROVISIONS:

Dischargers of stormwater from regulated small MS4s, as defined in 40 CFR § 122.26(b)(16), are required under the federal stormwater regulations (40 CFR Part 122) and state regulations incorporating those federal requirements by reference (25 Pa. Code § 92a.3), to submit an application and obtain a National Pollutant Discharge Elimination System (NPDES) permit to discharge stormwater into surface waters of the Commonwealth of Pennsylvania.

This Individual Permit (IP) authorizes stormwater discharges subject to the provisions of the Clean Water Act, 33 U.S.C. Sections 1251 *et seq.*, Pennsylvania's Clean Streams Law, *as amended*, 35 P.S. Sections 691.1 *et seq.*, and 25 Pa. Code Chapter 92a.

Municipalities operating under this permit have been either automatically designated as regulated by the Environmental Protection Agency (EPA) pursuant to 40 CFR § 122.32(a)(1) or designated as regulated by DEP under 40 CFR § 122.32(a)(2).

This authorization to discharge stormwater is subject to the terms and conditions set forth in Parts A, B and C herein. This permit authorizes discharges from regulated small MS4s, as defined herein, to surface waters of the Commonwealth, when such discharges are composed entirely of stormwater as defined in this Individual Permit, except as otherwise provided herein. The permittee is required to submit reports to document the implementation of the Stormwater Management Program (SWMP), as set forth in Appendix A hereto, designed to reduce the discharge of pollutants from the regulated small MS4 to the Maximum Extent Practicable (MEP); and when required, progress with the development, submission to DEP for approval, and activity to ensure implementation of an MS4 Total Maximum Daily Load (TMDL) Plan consistent with applicable Wasteload Allocations (WLAs) in an approved TMDL; and when required, progress with the development, submission to DEP for approval, and ensuring implementation of a Chesapeake Bay Pollutant Reduction Plan.

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

1. When an NPDES MS4 Individual Permit is issued to an owner or operator of a regulated small MS4 otherwise subject to a General Permit, the applicability of the General Permit to said regulated small MS4 is automatically terminated on the effective date of the Approval of Coverage for this NPDES MS4 Individual Permit.
2. This Individual Permit may be modified or revoked and reissued by DEP.
3. An application for renewal of coverage under this Individual Permit shall be received by DEP at least 180 days prior to the Expiration Date on the Approval of Individual Permit Coverage (unless written permission has been granted by DEP for submission at a later date). A request for renewal of coverage must be made using an application form provided by DEP.
4. Permittees who submit a timely renewal application in accordance with paragraph 3 may continue to operate pursuant to the terms and conditions of this permit until the Approval of Coverage under the renewal permit becomes effective.
5. For those portions of the permittee's regulated small MS4 that are located in, or discharge to, Waters of the Commonwealth, including wetlands, that have an existing or designated use that qualifies as either "High Quality Waters" or "Exceptional Value Waters" under 25 Pa. Code Chapter 93 of DEP's regulations, the permittee shall not authorize stormwater discharges from any new development or redevelopment into that portion of the regulated small MS4 until the person proposing the discharges demonstrates that appropriate measures will be implemented to ensure that the discharges will not cause or contribute to degradation of the quality of those receiving waters.
6. DEP will publish a notice in the Pennsylvania Bulletin of the draft renewal Individual Permit. After a comment period specified in the notice of draft Individual Permit, a notice that the final renewal Individual Permit was issued will be published in the Pennsylvania Bulletin.

7. No condition of this Individual Permit shall release the permittee from any responsibility or requirements under other federal or Pennsylvania environmental statutes or regulations.
8. Timely submission of the application and, if applicable, the MS4 TMDL Plan.
9. Permittees may implement a local or tribal Qualifying Local Program (QLP) pursuant to 40 CFR 122.44(s) under this Individual Permit. Permittees wishing to propose a QLP must submit complete documentation of the proposed QLP for review and approval by DEP.
10. The permittee agrees to fully implement and enforce to the MEP the SWMP (outlined in Part A, Section 2 below, and detailed in Appendix A); and if required, an MS4 TMDL Plan (outlined in Part C below), consistent with the assumptions and requirements of any applicable Waste Load Allocation (WLA) defined in approved TMDLs, that is designed to reduce the discharge of pollutants from the permittee's regulated small MS4 to meet applicable requirements, to protect water quality, and to satisfy the appropriate water quality requirements of the federal Clean Water Act, the Pennsylvania Clean Streams Law, and regulations promulgated thereto.

INDIVIDUAL PERMIT ELIGIBILITY:

This Individual Permit authorizes the discharge of stormwater from regulated small MS4s defined at 40 CFR §122.26(b)(16). This includes small MS4s designated as regulated under 40 CFR §122.32(a)(1) and 40 CFR §122.32(a)(2). The operator of the regulated small MS4 is eligible to discharge under this Individual Permit if all of the following conditions are met:

1. The regulated MS4 is not large or medium MS4s as defined in 40 CFR §122.26(b)(4) or (7);
2. The regulated small MS4 is located fully or partially in an Urbanized Area (UA) as determined by the latest Decennial Census by the Bureau of Census at the time an administratively complete and acceptable application for an Individual Permit is submitted to DEP;
3. The permittee submits an administratively complete and acceptable application and obtains written authorization from the DEP.
4. The regulated small MS4 does not, and shall not, discharge hazardous pollutants, toxics or any other substance which, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause or contribute to an increase in mortality or morbidity in either an individual or the total population or pose a substantial present or future hazard to human health or the environment when discharged into waters of the Commonwealth.

INDIVIDUAL PERMIT COVERAGE AND LIMITATIONS:

1. The following are authorized discharges:
 - a. Stormwater discharges. This permit authorizes stormwater discharges to surface waters of the Commonwealth from regulated small MS4s, except as excluded in Section 2 below.
 - b. Non-stormwater discharges. The following categories of non-stormwater discharges or flows are authorized by this permit unless the permittee or DEP has identified them as significant contributors of pollutants to the regulated small MS4 or its discharges:
 - i. discharges or flows from fire fighting activities;
 - ii. discharges from potable water sources including dechlorinated water line and fire hydrant flushing;
 - iii. irrigation water and landscape drainage;
 - iv. diverted stream flows;
 - v. uncontaminated pumped ground water;
 - vi. uncontaminated water from foundation and footing drains;
 - vii. air conditioning condensation;
 - viii. springs;
 - ix. water from crawl space pumps;
 - x. water from lawn watering;

- xi. individual residential car washing;
- xii. flows from riparian habitats and wetlands; and
- xiii. dechlorinated swimming pool discharges. (clean, no filter backwash)

2. Limitations on Coverage: This permit does not authorize any of the following:

- a. Discharges that are mixed with sources of non-stormwater unless such non-stormwater discharges are in compliance with a separate NPDES permit, or are determined not to be a significant contributor of pollutants to surface waters of the Commonwealth (as per section 1(b) herein).
- b. Stormwater discharges associated with industrial activity as defined in 40 CFR §122.26(b)(14)(i)-(ix) and (xi).
- c. Stormwater discharges associated with construction activity as defined in 40 CFR §122.26(b)(14)(x) or 40 CFR §122.26(b)(15).
- d. Stormwater discharges currently covered under another NPDES permit.
- e. Discharges that contain hazardous pollutants, toxics or any other substance which, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause or contribute to an increase in mortality or morbidity in either an individual or the total population or pose a substantial present or future hazard to human health or the environment when discharged into waters of the Commonwealth.
- g. MS4 systems where any portion of the discharges would be to impaired waters with an applicable and approved TMDL wasteload allocation (WLA) unless the permittee has an approved MS4 TMDL Plan.
- h. Discharges that are not, or shall not be, in compliance with the terms or conditions of this permit.
- i. Discharges where the applicant has failed and continues to fail to comply, or has shown a lack of ability or intention to comply, with a regulation, permit, schedule of compliance, or order issued by DEP.
- j. Discharges that do not, or shall not, result in compliance with applicable effluent limitations or water quality standards.
- k. Discharges that may adversely affect a Pennsylvania or federal endangered or threatened species, or its critical habitat.
- m. Discharges from an MS4 where an NPDES permit has been terminated or denied.

PART A

STORMWATER MANAGEMENT PROGRAM (SWMP)

The Stormwater Management Program is contained at Appendix A hereto, which is incorporated by reference herein. The SWMP that you submitted with your application for each of the six (6) MCMs may be either DEP's program or your own alternative program. If you prepared and submitted your own program for any of the MCMs, your program must be at least as protective of water quality as the program in DEP's version of Appendix A. You must implement, enforce and report on such activities related to the approved Stormwater Management Program in Appendix A which is designed to reduce the discharge of pollutants from your regulated small MS4 to the Maximum Extent Practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the federal Clean Water Act, the Pennsylvania Clean Streams Law, and regulations promulgated thereto.

This permit requires enactment and implementation of one of the following: (1) adoption of an MS4 Stormwater Management Ordinance; (2) adoption of an Ordinance from an applicable Act 167 Stormwater Management Plan approved by DEP in 2005 or later; or (3) an ordinance(s) that satisfies all applicable requirements in a completed and signed MS4 Stormwater Management Ordinance Checklist.

1. DEFINITIONS

Applicant: Refers to the owner or operator of a regulated small municipal separate storm sewer system (MS4) seeking to discharge under, and pursuant to, the terms of this permit.

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, structural controls (e.g., infiltration trenches), design criteria, maintenance procedures, and other management practices to prevent or reduce pollution to the waters of the Commonwealth. BMPs include Erosion and Sedimentation Control Plans, Post Construction Stormwater Management Plans, MS4 TMDL Plans, Stormwater Management Act Plans, and other treatment requirements, operating procedures and practices to control runoff, spillage or leaks, sludge or waste disposal, drainage from raw material storage, and methods to reduce pollution, to recharge groundwater, to enhance stream base flow and to reduce the threat of flooding and stream bank erosion.

Better Site Design (BSD): An approach to residential and commercial development that, when properly conducted, can simultaneously reduce pollutant loads, conserve natural areas, save money, and increase property values. BSD promotes three main goals for new development sites: (1) to reduce the amount of impervious cover, (2) to increase the amount of natural lands set aside for conservation, and (3) to better integrate stormwater treatment systems on-site. Green Infrastructure techniques like green roofs, rain gardens, and vegetated swales can be used in BSD to manage stormwater runoff and increase the amount of local green space. Also, reducing the overall scale of streets, driveways, setbacks, parking spaces, and lot sizes are effective methods of reducing impervious cover.

<http://cfpub.epa.gov/npdes/greeninfrastructure/information.cfm#glossary>

Clean Water Act (CWA): The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), as amended, 33 U.S.C. §§ 1251, et. seq.

Control Measure: As used in this permit refers to any BMP in the MS4 Stormwater Management Program, the MS4 TMDL Plan or any other method used to prevent or reduce the discharge of pollutants to waters of the Commonwealth.

Consistent with the TMDL: Implementing measures as soon as practicable to make measurable progress in substantially reducing the applicable pollutant loads specified in the applicable WLA of the TMDL, and ultimately achieving the pollutant reductions required in the WLA through implementation of measures in accordance with an implementation timeline contained in the MS4 TMDL Plan.

Department: The Department of Environmental Protection (DEP)

Designated uses: Those uses specified in 25 Pa. Code §§ 93.4(a) and 93.9a – 93.9z for each waterbody or segment whether or not they are being attained.

Director: The Secretary of the Department of Environmental Protection or any authorized employee thereof.

Dry Weather: For required outfall inspections, dry weather is a continuous time interval without stormwater producing events that immediately follows an initial 48 hour period with no stormwater producing events. (**NOTE:** For additional information regarding dry weather, see Chapter 11 of *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* [CWP, October 2004]. <http://cfpub.epa.gov/NPDES/stormwater/idde.cfm>.)

Existing uses: Those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.

Illicit Connection: Any physical connection to a separate stormwater drainage system that conveys illicit discharges into the system and/or is not authorized or permitted by the local authority.

Illicit Discharge: Any discharge (or seepage) to a municipal separate storm sewer that is not composed entirely of stormwater. This does not refer to discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the regulated small MS4); certain allowable non-stormwater discharges described in the EPA regulations, NPDES MS4 permit or the MS4 permittee's ordinance; and discharges resulting from fire fighting activities. Examples of illicit discharges include dumping of motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, animal wastes, or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-stormwater waste into a separate stormwater drainage system. Illicit discharges can be accidental or intentional.

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

Low Impact Development (LID): A set of site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located on-site. <http://cfpub.epa.gov/npdes/greeninfrastructure/information.cfm#glossary>

Maximum Extent Practicable (MEP): A technology-based discharge standard established in the CWA at §402(p)(3)(B)(iii) that requires NPDES MS4 permittees to optimize reductions in stormwater pollutants on a location-by-location basis by minimizing pollutant loads in stormwater discharges and maximizing technically achievable and cost-effective water quality improvements. MEP as used in this program also includes the requirement under the Pennsylvania Clean Streams Law to prevent pollution from changes in stormwater rate, volume, and temperature associated with alteration of the land. The MEP standard requires the development, implementation, and enforcement of measures including BMPs, control techniques, system design, engineering methods, and other provisions that DEP determines to be appropriate for the control of such pollutants. MEP is an iterative, dynamic, flexible standard that the permittee shall evaluate and update continuously, as necessary, to better tailor or expand the program based on its effectiveness in reducing pollutant discharge load.

Measurable Goals: Best Management Practice design objectives or goals that quantify the progress of program implementation and the performance of the chosen BMPs. They are objective markers or milestones that can be used to track the progress and effectiveness of BMPs in reducing pollutants to the MEP.

Municipal Separate Storm Sewer: A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), which is all of the following:

- (1) owned or operated by a state, city, town, borough, township, county, district, association or other public body (created under state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater or other wastes,
- (2) designed or used for collecting or conveying stormwater,
- (3) not a combined sewer, and
- (4) not part of a Publicly Owned Treatment Works as defined at 40 CFR § 122.2.

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

Municipality: Any county, city, borough, town, township, school district, or any institution or any authority created by one or more of the aforementioned.

MS4 TMDL Plan: A plan that is required for a regulated small MS4 that discharges stormwater into a waterbody with an approved applicable wasteload allocation (WLA) in a TMDL. The MS4 TMDL Plan shall detail measures that will be implemented to make measurable progress in substantially reducing the applicable pollutant loads specified in the applicable WLA of the TMDL, as soon as practicable, consistent with the TMDL. In addition, the MS4 TMDL Plan shall include a timeline, with milestones, that specifies when the pollutant load reductions set forth in the WLA will be attained. Implementation of the MS4 TMDL Plan may be phased, in accordance with the timeline, and can be adaptive, iterative and dynamic. The MS4 TMDL Plan shall be evaluated and updated by the permittee continuously, as necessary. The term "implement" includes any action that may be necessary for the permittee to ensure the proper operation and maintenance of all pollutant control measures identified in, or associated with, the MS4 TMDL Plan.

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

New Permittee: Any municipality that has been designated as a regulated small MS4 and has not previously obtained coverage under PAG-13 or obtained an Individual NPDES MS4 Permit.

NOI: The Notice of Intent for Coverage under the NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems.

Non-structural BMP: Actions that involve management and source controls such as: (1) Policies and ordinances that provide requirements and standards to direct growth to identified areas, protect areas such as wetlands and riparian areas, maintain and/or increase open space, provide buffers along waterbodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation; (2) policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure; (3) education programs for developers and the public about minimizing water quality impacts; (4) other measures such as minimizing the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, and source control measures often thought of as good housekeeping, maintenance, and spill prevention.

Outfall: A "Point Source", as that term is defined herein, where an MS4 discharges stormwater to other surface waters of this Commonwealth. This does not include open conveyances connecting two (2) municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream and are used to convey waters of the Commonwealth.

Owner or operator: The owner or operator of any "facility" or "activity" subject to regulation under the NPDES program.

Permittee: Refers to the owner or operator of a regulated small municipal separate storm sewer system seeking to discharge under, and pursuant to, the terms of this Permit, and thereby agreeing to fully comply with all terms set forth therein. Permittees assume all responsibility for meeting conditions of coverage under this Permit.

Point Source: As defined by 25 Pa. Code § 92a.2, which is any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated aquatic animal production facility, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft, from which pollutants are or may be discharged.

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

Pollution: Shall be construed to mean contamination of any waters of the Commonwealth such as will create or is likely to create a nuisance or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life, including but not limited to such contamination by alteration of the physical, chemical or biological properties of such waters, or change in temperature, taste, color or odor thereof, or the discharge of any liquid, gaseous, radioactive, solid or other substances into such waters. The department shall determine when a discharge constitutes pollution, as herein defined, and shall establish standards whereby and wherefrom it can be ascertained and determined whether any such discharge does or does not constitute pollution as herein defined (The Clean Streams Law, 35 P.S. § 691.1).

Regulated Small MS4: Any small MS4 that is covered by the federal Phase II stormwater program, either through automatic nationwide designation under 40 CFR § 122.32(a)(1) (via the Urbanized Area criteria) or by designation on a case-by-case basis by DEP pursuant to 40 CFR § 122.32(a)(2). “Regulated small MS4s” are a sub-set of “small MS4s.”

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

Section 303(d) Listed Waters: Stream segments placed on a list when, based on existing and readily available data and/or information, the technology-based effluent limitations required by the federal Clean Water Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed.

Small Municipal Separate Storm Sewer System (Small MS4): All separate storm sewers that are:

- (1) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity.
- (2) Not defined as “large” or “medium” municipal separate storm sewer systems pursuant to 40 CFR §§122.26(b)(4) and (7), or designated under 40 CFR § 122.26(a)(1)(v).
- (3) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospitals or prison complexes, and highways and other thoroughfares.

Storm Sewershed: The catchment area that drains into the storm sewer system based on the surface topography in the area served by the storm sewer.

Stormwater: Runoff from precipitation, snow melt runoff and surface runoff and drainage. “Stormwater” has the same meaning as “Storm Water.”

Stormwater Management Program (SWMP): A comprehensive program prepared by the applicant and approved by DEP to manage the quality of stormwater discharged from the municipal separate storm sewer system. Permittees are required to develop, implement and enforce a SWMP designed to reduce the discharge of pollutants from the regulated small MS4s to the MEP, to protect water quality and quantity, and to satisfy the appropriate water quality requirements of the Pennsylvania Clean Streams Law and the CWA and regulations promulgated thereto. The permittee is required to implement the SWMP attached as Appendix A hereto.

Structural BMP: Storage practices including, but not limited to, wet ponds and extended-detention outlet structures; filtration practices such as grassed swales, sand filters and filter strips; and infiltration practices such as infiltration basins and infiltration trenches.

Surface Waters: Perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process.

Total Maximum Daily Load (TMDL): The sum of individual wasteload allocations for point sources, load allocations for nonpoint sources, a margin of safety, and natural background. TMDLs can be expressed in terms of mass per time, toxicity or other appropriate measures.

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

Wasteload Allocation (WLA): The portion of a surface water's loading capacity that is allocated to existing and future point source discharges.

Water Quality Criteria: Numeric concentrations, levels or surface water conditions that need to be maintained or attained to protect existing and designated uses.

Water Quality Standards: The combination of water uses to be protected and the water quality criteria necessary to protect those uses.

Waters of the Commonwealth: Any and all rivers, streams, creeks, rivulets, impoundments, ditches, water courses, storm sewers, lakes, dammed water, ponds, springs and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

2. EFFLUENT LIMITATIONS AND OTHER REQUIREMENTS FOR THIS INDIVIDUAL PERMIT

- a. The permittee shall implement, enforce and report on the Stormwater Management Program (SWMP) as set forth in Appendix A hereto, designed to reduce the discharge of pollutants from the regulated small MS4s to the MEP, to protect water quality and quantity, and to satisfy the appropriate water quality requirements of the Clean Water Act, the Pennsylvania Clean Streams Law, and regulations promulgated thereto.
- b. The SWMP shall include Best Management Practices (BMPs) to comply with the following six (6) Minimum Control Measures (MCMs) in the following areas:
 1. Public Education and Outreach on Stormwater Impacts
 2. Public Involvement/Participation
 3. Illicit Discharge Detection and Elimination
 4. Construction Site Stormwater Runoff Control
 5. Post-Construction Stormwater Management (PCSM) in New and Re-Development Activities
 6. Pollution Prevention/Good Housekeeping for Municipal Operations
- c. The SWMP as set forth in Appendix A of this permit contains the approved approach for satisfying each of the six (6) MCMs. The SWMP in Appendix A describes each MCM including BMPs and measurable goals.

- d. New permittees shall enact and implement within the first year of permit coverage, one (1) of the appropriate MS4 Stormwater Management Ordinances; an Ordinance from an applicable Act 167 Stormwater Management Plan approved by DEP in 2005 or later; or an ordinance(s) that satisfies all applicable requirements in a completed and signed MS4 Stormwater Management Ordinance Checklist. The permittee must satisfy these requirements in accordance with the information provided by the permittee in the permit application.

Renewal permittees must continue to maintain, update, implement, and enforce a Stormwater Management Ordinance that satisfies all applicable requirements.

- e. The permittee shall ensure that its SWMP, including its stormwater management ordinance(s), is designed to prevent increased loadings of pollutants and to not cause or contribute to a violation of water quality standards by any discharges from its regulated small MS4s (40 CFR 122.4(i), 40 CFR 122.44(d)(1), and 25 Pa. Code Chapters 91-97, 102, and 105).
- f. The permittee shall develop and maintain adequate legal authorities to implement all parts of this permit, including the SWMP attached as Appendix A hereto.
- g. The permittee shall maintain adequate funding and staffing to implement and manage all provisions of the attached SWMP.
- h. Sharing responsibility
 1. Implementation of one (1) or more of the minimum control measures may be shared with another entity, or the other entity may fully take over implementation of the measure. Because the permittee is responsible for meeting all permit conditions regardless of its delegations to other entities, the permittee should take steps to ensure that:
 - i. The other entity, in fact, implements the control measures in the regulated small MS4 area;
 - ii. The particular control measures as implemented by the other entity, or components of control measures, are at least as protective of water quality as the corresponding permit requirement.
 - iii. The other entity agrees to implement the control measures on behalf of the permittee. The agreement between the parties shall be documented in writing and retained by the permittee consistent with the record keeping requirements for this permit.

2. The permittee shall perform reasonable oversight and the permittee remains responsible for compliance with the obligations of this permit if any other entity fails to implement any of the control measures (or any components thereof).
- i. The permittee shall submit reports to DEP as described in Part B, Section 3.d. below.

PART B

STANDARD CONDITIONS

1. RESPONSIBILITIES

- a. **Duty to Comply.** The permittee shall comply with all terms and conditions of this permit. Any permit non-compliance constitutes a violation of the Pennsylvania Clean Streams Law and the federal Clean Water Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification or denial of a permit or permit renewal. Financial distress does not relieve the permittee of the terms and conditions of this permit.
- b. **Penalties for Violations of Permit.** The permittee may be subject to criminal and/or civil penalties for violations of the terms and conditions of this permit under Section 602 and 605 of the Clean Streams Law, 35 P.S. Sections 691.602 and 691.605, and under the Clean Water Act as specified in 40 CFR Sections 122.41(a)(2) and (3).
- c. **Need to Halt or Reduce Activity Not a Defense.** The permittee may not use as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit.
- d. **Penalties and Liability.** Nothing in this permit may be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the CWA (33 U.S.C. §1321) or Section 106 of the Comprehensive Environmental response, Compensation, and Liability Act, 42 U.S.C. § 9606.
- e. **Periodic report (periodic reports, periodically report):** First term permittees and all permittees with any portion of a regulated small MS4 discharging stormwater into the Chesapeake Bay Watershed shall submit all required information in annual reports. Renewal permittees with no portion of a regulated small MS4 discharging stormwater into the Chesapeake Bay Watershed shall provide all required information in periodic progress reports submitted in permit years one (1), three (3), and with the renewal application (or renewal NOI for PAG-13) in year five (5) (also see Part B.3.d).
- f. **Property Rights.** The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
- g. **Severability.** The provisions of this permit are severable. If any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.
- h. **Other Laws.** Nothing in this permit may be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.
- i. **Right of Entry.** Pursuant to Sections 5(b) and 305 of the Pennsylvania Clean Streams Law (35 P.S. §§ 691.5(b) and 691.305), 25 Pa. Code Chapter 92a, section 1917-A of the Administrative Code, section 308 of the CWA and 40 CFR § 122.41 (i), the permittee shall allow an authorized representative of the Environmental Protection Agency (EPA) or DEP, upon the presentation of credentials and other documents, as may be required by law, to:
 - i. Enter upon the permittee's premises where a regulated activity is located or conducted or where records must be kept under the conditions of this permit;
 - ii. Have access to and copy at reasonable times, any records that must be kept under the terms and conditions of this permit;
 - iii. Inspect any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required under this permit;
 - iv. Sample or monitor any substances or parameters, including the discharge of stormwater, at any location within the regulated small MS4.

- j. **Penalties for Falsification of Reports.** Section 309(c)(4) of the Clean Water Act provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years or by both. In addition, criminal sanctions are set forth for false swearing and unsworn falsification at 18 Pa. C.S. §§ 4903-4904.
- k. **Penalties for Falsification of Monitoring Systems.** The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by fines and imprisonment described in Section 309 of the Clean Water Act. In addition, criminal sanctions are set forth for false swearing and unsworn falsification at 18 Pa. C.S. §§ 4903-4904.
- l. **Test Procedures.** With the exception of the field screening conducted under the Illicit Discharge Detection and Elimination (IDD&E) measure, wherever monitoring or sampling may be required, it shall be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the Authorization to Discharge or have been approved by DEP in writing.
- m. **Removed Substances.** Solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters or drinking water, implementation of BMPs, or operating or maintaining the regulated small MS4, shall be managed and disposed of in accordance with the requirements of the Solid Waste Management Act, 35 P.S. § 6018.101, *et seq.*, and the Clean Streams Law, 35 P.S. §§ 691.1 *et seq.*, and in a manner such as to prevent any pollutant in such materials from adversely affecting the environment.
- n. **BMP Implementation and Facilities Construction, Operation, and Maintenance.** The permittee shall properly design, build, operate, and maintain all facilities and systems of treatment and control, including BMPs and any stormwater pollution prevention or management plans, which are installed or used by the permittee to achieve compliance with the conditions of this permit. The permittee shall ensure that BMPs are planned, designed, implemented, and maintained to minimize or eliminate the impacts of stormwater runoff to the maximum extent practicable (MEP) for BMPs associated with the Stormwater Management Program and to reduce the discharge of pollutants consistent with applicable TMDLs for BMPs associated with approved MS4 TMDL Plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures and requires the operation of backup or auxiliary facilities, BMPs, or similar systems, installed or implemented by a permittee only when necessary to achieve compliance with the conditions of this permit.
- o. **Adverse Impact.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
- p. **Monitoring Requirement.** DEP may require monitoring of an individual discharge as may be reasonably necessary in order to characterize the nature, volume or other attributes of that discharge or its sources. If the permittee is required to develop, submit to DEP for approval, and ensure implementation of an MS4 TMDL Plan pursuant to Condition C.1. herein, the permittee shall conduct monitoring of the BMPs and other measures undertaken pursuant to such section in order to demonstrate that measurable progress toward meeting the pollutant load reductions is being achieved consistent applicable waste load allocations in approved TMDLs.

2. MANAGEMENT REQUIREMENTS

- a. **Permit Modification, Termination, or Revocation and Reissuance**
 - 1. This permit may be modified, suspended, revoked, reissued, or terminated during its term for any of the causes specified in 25 Pa. Code Chapters 92a and 102, as applicable.
 - 2. The filing of a request by the permittee or co-permittee for a permit or coverage modification, revocation, reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not eliminate any existing permit conditions.
 - 3. Permit modification or revocation shall be conducted according to 25 Pa. Code Chapters 92a and 102, as applicable.

b. Duty to Provide Information

1. The permittee shall furnish to DEP, within a reasonable time, any information that DEP may request to determine whether cause exists for modifying, revoking and reissuing, terminating, or determining compliance with, this permit.
2. The permittee shall furnish to DEP, upon request, copies of records that are required to be kept under the conditions of this permit.
3. When the permittee becomes aware of a failure to submit any relevant facts, of the existence of incorrect information in the permit application, or in any other report to DEP, the permittee shall promptly submit documents to correct such facts or information.
4. The permittee shall give advance notice to DEP of any planned physical alterations or additions to the regulated small MS4 which could, in any way, substantially affect the quality and/or quantity of stormwater discharged from the regulated small MS4.

c. Operation and Maintenance Requirements. The Stormwater Management Program (Appendix A), MS4 stormwater management ordinance(s), and MS4 TMDL Plan, if required, shall include provisions to ensure that proper operation and maintenance is performed on all stormwater BMPs and all pollutant reduction BMPs that discharge through the regulated small MS4. The requirement to perform proper operation and maintenance of BMPs that discharge through the regulated small MS4s applies to the owners and operators of all such BMPs, including the permittee.

3. MONITORING, REPORTING, AND RECORDKEEPING

The permittee shall evaluate program compliance, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals.

a. Records of field investigations. When the permittee conducts monitoring of illicit discharges pursuant to MCM #3, samples and measurements taken shall be representative of the monitored activity. Records of monitoring information shall include:

1. The date, exact place, and time of sampling, measurements, or observations;
2. The name(s) of the individual(s) who performed the sampling, measurements, or observations;
3. The date(s) when sample analyses were performed;
4. The names of the individuals who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analysis.

b. Retention of Records. The permittee shall retain copies of the documentation related to the SWMP developed in accordance with this permit for a minimum of three (3) years, and until at least one (1) year after coverage under this permit terminates. The permittee shall retain all records of all monitoring information, copies of all reports required by this permit, and records of all data used to complete the application until at least one (1) year after coverage under this permit terminates. In addition, the permittee shall retain on site, at all times, a complete copy of the application, this permit, and any authorizations received from DEP pursuant to this permit, until at least one (1) year after coverage under this permit terminates. This period may be explicitly modified by alternative provisions of this permit or extended by request of DEP at any time.

c. Signatory Requirements

1. All reports and applications required by the permit and other information requested by DEP shall be signed and certified by a principal executive officer or ranking elected official or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - i. The authorization is made in writing by a person described above and submitted to DEP with the reports.
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for

environmental matters for the organization. (A duly authorized representative may be either a named individual or any individual occupying a named position).

2. **Changes in Authorized Individuals or Positions.** If an authorization for an individual or a position to submit reports to DEP is no longer accurate because a different individual or position has responsibility for the overall operation of the regulated small MS4, a new authorization satisfying the above requirements shall be submitted to DEP prior to, or together with, any reports, information, or applications to be signed by the newly authorized representative.
3. **Progress Reports Shall Include the Following Signed and Dated Certification:**
"I certify under penalty of law that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

d. Periodic Reports (Annual Reports and Progress Reports)

1. New permittees and all permittees with any portion of a regulated small MS4 discharging stormwater into the Chesapeake Bay Watershed shall submit annual reports to DEP reporting on SWMP activities, Chesapeake Bay Pollutant Reduction Plan activities, and MS4 TMDL Plan activities performed during the preceding permit year. The report shall be in the format provided by the Department. Report Forms are available on DEP's website at <http://www.elibrary.dep.state.pa.us>, select "Forms", "Point and Non-Point Source Management", and "Municipal Separate Storm Sewer System MS4 Annual Progress Report".
2. Renewal permittees with no portion of a regulated small MS4 discharging stormwater into the Chesapeake Bay Watershed shall submit Progress Reports to DEP documenting the SWMP and MS4 TMDL Plan activities that were performed during the preceding reporting time interval.
3. Permittees shall submit the appropriate report form, available on DEP's website.
4. The reports shall include information regarding (but not limited to):
 - i. Status of compliance with the conditions of this permit and progress towards meeting the measurable goals of each MCM;
 - ii. Status of progress towards achieving the statutory requirements of reducing the discharge of pollutants to the MEP and complying with water quality standards.
 - iii. Assessment of the appropriateness of the BMPs;
 - iv. Steps to be taken to address any deficiencies in the BMPs or other aspects of the SWMP developed by the permittee;
 - v. Results of information collected and analyzed during the reporting period;
 - vi. Summary of stormwater activities planned during the next reporting cycle;
 - vii. Any proposed changes to the permittee's SWMP, including changes to BMPs, measurable goals, or responsible parties;
 - viii. Notices, intergovernmental agreements, and other relevant documents if the permittee is relying on another governmental entity to satisfy any of its permit obligations;
 - ix. Progress with implementation of the MS4 TMDL Plan, including a summary of implementation and monitoring data of all control measures and of all BMPs implemented in connection with the MS4 TMDL Plan;
 - x. Progress with preparation, submission to DEP for approval, and implementation of the Chesapeake Bay Pollutant Reduction Plan for permittees with any regulated small MS4s are located in and discharging to receiving watersheds draining to the Chesapeake Bay. Include a list of BMPs implemented and their associated pollutant load reductions.
 - xi. For new permittees, a letter signed by a municipal official, municipal engineer or the municipal solicitor as an attachment to the first year report certifying the enactment of either an ordinance from an Act 167 Plan approved by the DEP in 2005 or later; enactment of the appropriate MS4 Stormwater Management Ordinance; or enactment of an ordinance(s) that satisfies all applicable requirements in a completed and signed MS4 Stormwater Management Ordinance Checklist.

5. All Reports shall be submitted to the appropriate Regional DEP Office.
6. The deadlines for submission of Annual Reports and Progress Reports are as follows:
 - a. Annual Reports no later than 90 days following the end of each permit year.
 - b. Progress Reports no later than 60 days following the end of permit years one (1) and three (3). In year five (5) the report shall be submitted with the application for renewal of this permit.

4. TRANSFER OF OWNERSHIP OR CONTROL

This permit is not transferable to any person except after notice to DEP.

- a. In the event of any pending change in control or ownership of the regulated small MS4 from which the authorized discharges emanate, the permittee shall notify DEP by letter of such pending change at least 30 days prior to the change in ownership or control. The letter shall be accompanied by the application and a written agreement between the existing permittee and the new owner or operator stating that the existing permittee shall be liable for violations of the permit up to and including the date of coverage transfer and that the new owner or operator shall be liable for permit violations under the permit after that date.
- b. After receipt of the required documentation, DEP shall notify the existing permittee and the new owner or controller of its decision concerning approval of the transfer. Such requests shall be deemed approved unless DEP notifies the applicant otherwise within 30 days.

5. TERMINATION OF COVERAGE

- a. **Notice of Termination.** Where all stormwater discharges from a regulated small MS4 that are authorized by this permit are eliminated, the operator of the regulated small MS4 may submit a letter that is signed in accordance with Part B.3.c. (signatory requirements) of this permit certifying that:

"Under penalty of law, I hereby certify that all MS4 discharges that are authorized by this NPDES MS4 Permit have been eliminated. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater from the small MS4 regulated under this permit, and that discharging stormwater or pollutants to surface waters of the Commonwealth is unlawful under the Clean Water Act and Clean Streams Law where the discharge is not authorized by an NPDES MS4 permit."

- b. **Addresses.** All letters certifying discharge termination are to be sent to the appropriate regional office of DEP.

6. ANNUAL FEE

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. Annual fees are due on each anniversary of the effective date of the most recent new or reissued permit.

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Throughout a five year permit term, permittees will pay four annual fees followed by a permit renewal application fee in the last year of permit coverage. Permittees may contact the DEP at 717-787-6744 with questions related to annual fees.

Payment for annual fees shall be remitted to DEP at the address below by the anniversary date. Checks should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection
Bureau of Point and Non-Point Source Management
Re: Chapter 92a Annual Fee
P.O. Box 8466
Harrisburg, PA 17105-8466

PART C

OTHER CONDITIONS

1. TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS:

If the regulated small MS4 discharges stormwater into any portion of a receiving water with applicable Wasteload Allocations (WLAs) in approved TMDLs, the permittee shall implement an approved MS4 TMDL Plan that is designed to achieve pollutant reductions consistent with the applicable WLAs in the TMDLs. When an MS4 TMDL Plan is required, that MS4 TMDL Plan must be implemented according to the schedule in the approved plan.

For each regulated small MS4 that discharges stormwater into any portion of a receiving water with applicable wasteload allocations in approved TMDLs, permittees shall develop, submit to DEP for approval, and ensure implementation of a written MS4 TMDL Plan that is designed to achieve pollutant reductions consistent with the assumptions and requirements of the applicable wasteload allocations in the approved TMDLs. An MS4 TMDL Plan consists of two (2) components: an MS4 TMDL Strategy and MS4 TMDL Design Details. The MS4 TMDL Strategy must include a narrative discussion of how the MS4 TMDL Plan will satisfy the requirements in Subsections a through c below. MS4 TMDL Design Details must be submitted to DEP within one (1) year of the effective date of this permit for written approval by DEP. The complete MS4 TMDL Plan must satisfy the requirements in Subsections a through d below, including final design details for the BMPs that will be implemented during the term of this permit. MS4 TMDL Plans must include a timeline (schedule) with milestones and upon approval the plan must be implemented as soon as practicable, and no later than according to the approved timeline.

a. MS4 TMDL Plan for Impaired Waters with a TMDL

The MS4 TMDL Plan must be consistent with the conditions and assumptions of the any applicable waste load allocation(s) (WLAs) in approved TMDLs, and it must include implementation of pollutant control measures that reduce pollutants in discharges from the regulated small MS4s as required by the wasteload allocations in the TMDLs. (Note: The MS4 TMDL Plan is in addition the Stormwater Management Program (SWMP) in Appendix A required to satisfy the six (6) mandatory MCMs).

The permittee's progress with implementation of the MS4 TMDL Plan must be fully described in every periodic report (see Part B.3.d of the Authorization to Discharge).

b. MS4 TMDL Plan, Required Contents

The MS4 TMDL Plan shall reduce pollutants in discharges from the regulated small MS4 as required by applicable wasteload allocations in approved TMDLs. The permittee must develop, submit to DEP for approval, and ensure implementation of the MS4 TMDL Plan in accordance with the approved timeline.

MS4 TMDL Plans shall include:

- i. The Title of TMDL or TMDL(s);
- ii. A list of the watershed name(s) and the eight-digit Hydrologic Unit Code (HUC) for the areas that discharge through the regulated MS4s to waterbodies with TMDLs;
- iii. A list of the pollutant(s) and Waste Load Allocations (WLAs) assigned to each regulated small MS4 in each municipality covered by this permit;
- iv. For each applicable TMDL, a list all of the municipalities subject to the TMDL within the area of the same eight-digit HUC;
- v. For each applicable TMDL, a list of all the counties subject to the TMDL within the area of the same eight-digit HUC;
- vi. Allocated pollutant loadings established in each applicable TMDL;
- vii. Reductions in pollutant loads (pounds or percent) necessary to meet each applicable TMDL or WLA;
- viii. For each regulated small MS4 outfall that discharges to waters with TMDLs, and for each TMDL, list all of the control measures and BMPs that will be implemented and reported to achieve consistency

with each applicable TMDL or WLA. Include a brief analysis to explain and justify the control measures and BMPs that were selected for implementation.

- ix. Permittees must include an analysis to show that implementation of the MS4 TMDL Plan, including the selected control measures and BMPs, will reduce the pollutant loads consistent with the applicable WLAs established in approved TMDLs. Permittees must include a timeline with milestones. Implementation of the MS4 TMDL Plan may be phased, in accordance with the timeline, and can be adaptive, iterative, and dynamic to show measurable progress toward meeting pollutant load reductions. Permittees must evaluate and update MS4 TMDL Plans as necessary, based on effectiveness in reducing pollutant discharge loads to meet approved TMDLs and applicable WLAs. MS4 TMDL Plans must include a process for evaluating control measures and BMPs, implementation efforts undertaken to date, and any changes made to the control measures or BMPs to obtain greater reductions in pollutant loadings from the outfalls of the regulated MS4s.
- x. Additional information deemed necessary by DEP or by the permittee for addressing the TMDL.

Information for TMDLs (including HUC numbers) can be found at www.depweb.state.pa.us, keyword: TMDL.

c. Signature and Seal by Professional Engineer for MS4 TMDL Plans

MS4 TMDL Strategies and an MS4 TMDL Plans must be signed and sealed by a Professional Engineer (PE) holding a valid license in good standing from the Pennsylvania Department of State.

d. Implementation Requirements

Permittees shall develop, submit to DEP for approval, and ensure implementation of an MS4 TMDL Plan that is consistent with the applicable WLAs in approved TMDLs and that is designed to achieve the pollutant reductions established by applicable WLAs in the TMDLs. The term "implement" includes any action that may be necessary for the permittee to ensure the proper operation and maintenance of all pollutant control measures identified in, or associated with, the MS4 TMDL Plan. Permittees shall report on implementation of the MS4 TMDL Plan in each periodic report submitted under this permit. All pollutant control measures needed to reduce the pollutant load consistent with the TMDL shall be implemented as soon as practicable, in accordance with the MS4 TMDL Plan's timeline, to make measurable progress in substantially reducing the applicable pollutant loads. Implementation of all measures can be adaptive, iterative, and dynamic. The MS4 TMDL Plan shall be evaluated and updated by the permittee as necessary, based on its effectiveness in reducing pollutant loads in discharges from the regulated small MS4s.

The MS4 TMDL Plan shall demonstrate that the required pollutant load reductions will be achieved, consistent with the TMDL, and the Plan must be implemented as soon as practicable. The MS4 TMDL Plan can demonstrate this by showing how measurable implementation progress will be made in substantially reducing applicable pollutant loads specified in the WLA, in accordance with the implementation timeline, including attainment of applicable milestones, along with the proposed end date for ultimate attainment of the pollutant load reductions set forth in the WLA.

Permittees shall report on progress with implementation of the MS4 TMDL Plan in all periodic reports and in the final report submitted with the next renewal application. Permittees must include the reductions in pollutant loads attained by implementation of control measures or BMPs, broken down measure by measure or BMP by BMP. Permittees must have physical pollutant removal measures installed on-the-ground in time for their successful operation to be documented in the periodic report or the progress report submitted at the end of the third year of coverage under this permit. Additional measurable substantial progress with installation of physical pollutant removal measures must be documented in the reports submitted with the next successive application for a renewal permit.

2. DISCHARGES TO IMPAIRED WATERS WITHOUT A TMDL:

For each regulated small MS4 that discharges stormwater into any portion of a receiving water that is impaired, but does not have an approved TMDL, permittees shall ensure that new discharges from the permittee's regulated small MS4s do not cause or contribute to exceedances of water quality standards. Permittees must:

- a. identify outfalls that discharge to impaired waters;
- b. identify additional or modified BMPs in the SWMP to ensure that new discharges do not cause or contribute to the impairment; and

- c. implement such BMPs and report on the status of each.

Permittees shall report on progress with implementation of the additional or modified BMPs in the each periodic report.

3. CHESAPEAKE BAY POLLUTANT REDUCTION PLANS:

Permittees with regulated small MS4s located in and discharging to receiving watersheds draining to the Chesapeake Bay:

- a. Shall within twelve (12) months of the effective date of the Approval of Coverage, develop and submit to DEP for approval a Chesapeake Bay Pollutant Reduction Plan, including a schedule, to implement BMPs to reduce nitrogen, phosphorus, and sediment associated with existing stormwater discharges into regulated small MS4s discharging to receiving waters tributary to the Chesapeake Bay;
- b. The Chesapeake Bay Pollutant Reduction Plan required under this permit shall include a narrative description of the estimated area, including impervious cover, draining to the regulated small MS4, which may be based upon existing documents or data, such as zoning maps. This narrative description should identify areas where municipal infrastructure upgrades are planned and include an evaluation of the suitability for incorporation of green infrastructure, ESD, or LID BMPs into the planned municipal infrastructure upgrades. Where feasible, such practices should be incorporated into the municipal infrastructure upgrades and be included in the Chesapeake Bay Pollutant Reduction Plan BMP implementation schedule.
- c. The Chesapeake Bay Pollutant Reduction Plan required under this permit shall include BMPs that are designed to achieve reductions of nitrogen, phosphorus, and sediment consistent with the goals and objectives of the Pennsylvania Chesapeake Watershed Implementation Plan and must be signed and sealed by a Professional Engineer holding a valid license in good standing from the Pennsylvania Department of State;
- d. In the development of the Chesapeake Bay Pollutant Reduction Plan, the permittee shall evaluate and incorporate into the plan a combination of TMDL control measures listed in Section II.F of the Instructions for an Application for an Individual Permit;
- e. Upon approval by DEP, the permittee shall ensure implementation of the Chesapeake Bay Pollutant Reduction Plan consistent with the approved schedule; and
- f. In the annual report to the Department required under Part B of this permit, the permittee shall include a list of BMPs implemented and their associated reductions, and a narrative description of the progress with development, submission to DEP for approval, and ensuring implementation of the Chesapeake Bay Pollutant Reduction Plan.
- g. Where the permittee is required to develop, submit to DEP for approval, and ensure implementation of an MS4 TMDL Plan to meet a WLA for nitrogen, phosphorus, or sediment as described in Part C(1) of this permit, the permittee may rely on and incorporate the portions of such MS4 TMDL Plan that address nitrogen, phosphorus, and sediment associated with existing stormwater discharges into the Chesapeake Bay Pollutant Reduction Plan.



Individual Permit Appendix A Stormwater Management Program

This Appendix A contains specific Best Management Practices (BMPs) and Measurable Goals that make up the permittee's Stormwater Management Program (SWMP) and that are required for the permittee to comply with this NPDES Municipal Separate Storm Sewer System (MS4) permit. There are six (6) Minimum Control Measures (MCMs), which are required by Federal Regulations. Within each MCM, the permittee will implement several BMPs as conditions of this permit. Associated with each BMP are Measurable Goals, which represent the means by which the permittees' accomplishments shall be reported and evaluated. For supplemental information on the six (6) MCMs, permittees are encouraged to refer to www.depweb.state.pa.us, keyword: Stormwater. For a national perspective on guidance for setting measurable goals, please refer to EPA's publication "Measurable Goals Guidance for Phase II Small MS4s," available from EPA's website:

<http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm>.

In your permit application you indicated whether the BMPs and Measurable Goals under each of the six (6) MCMs follow exactly the wording provided by DEP in DEP's version of this Appendix A, or whether you provided alternative BMPs and Measurable Goals for any of the MCMs. You are required to satisfy all requirements of this Stormwater Management Program as a condition of this permit during the term of this permit.

MCM #1: Public Education and Outreach on Stormwater Impacts

The following are the requirements for MCM #1 that are included in the Federal Regulations:

- *Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff (40 CFR Part 122.34(b)(1)(i)).*

The following requirements, Best Management Practices (BMPs) and Measurable Goals are to be implemented and achieved:

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

Measurable Goal: For new permittees, a PEOP shall be developed and implemented during the first year of coverage under this permit and shall be re-evaluated each permit year thereafter and revised as needed. For renewal permittees, the existing PEOP shall be reviewed and revised as necessary. The permittee's PEOP shall be designed to achieve measurable improvements in the target audience's understanding of the causes and impacts of stormwater pollution and the steps they can take to prevent it.

Recommendation: Refer to the Environmental Protection Agency (EPA) document, "[Getting In Step, A Guide for Conducting Watershed Outreach Campaigns](#)" (EPA 841-B-03-002, December, 2003), for guidance on developing and implementing the PEOP.

BMP #2: Develop and maintain lists of target audience groups that are present within the areas served by your regulated small MS4s. In most communities, the target audiences shall include residents, businesses (including commercial, industrial and retailers), developers, schools, and municipal employees.

Measurable Goal: For new permittees, the lists shall be developed within the first year of coverage under the permit and reviewed and updated as necessary every year thereafter. For renewal permittees, the lists shall continue to be reviewed and updated annually.

Recommendation: Utilize databases or spreadsheets to record and track this information and to allow for easy identification and creation of mailing lists easily retrievable.

BMP #3: You must annually publish at least one (1) issue of a newsletter, a pamphlet, a flyer, or a website that includes general stormwater educational information, a general description of your Stormwater Management Program, and/or information about your stormwater management activities. The list of publications, including websites, and the content of the publications must be reviewed and updated at least once during each year of permit coverage. Publications should include a list of references (or links) to refer the reader to additional information (e.g., PADEP and US EPA stormwater websites, and any other sources that will be helpful to readers). You must implement at least one of the following alternatives:

- a. Publish and distribute in printed form a newsletter, a pamphlet or a flyer containing information consistent with this BMP.
- b. Publish educational and informational items including links to DEP's and EPA's stormwater websites on your municipal website.

Measurable Goals: For new permittees, stormwater educational and informational items shall be produced and published in print and/or on the Internet within the first year of permit coverage. In subsequent years (and for renewal permittees), the list of items published and the content in these items shall be reviewed, updated, and maintained annually. Your publications shall contain stormwater educational information that addresses one (1) or more of the six (6) MCMs.

Recommendation: There are numerous example educational resources available from the sources listed at: www.depweb.state.pa.us, keyword: Stormwater. Periodically you should review and consider distributing or republishing stormwater information available from DEP, EPA, and other sources. Your stormwater materials can be published either in print format or electronically on the internet. Permittees can partner with other MS4 permittees to meet this BMP.

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

Measurable Goal: All permittees shall select and utilize at least two (2) distribution methods in each permit year. These are in addition to the newsletter and website provisions of BMPs #3 and #4.

Recommendations: Abundant educational resources and examples are available from numerous sources (see www.depweb.state.pa.us, keyword: Stormwater) that can be adapted for use, including the DEP brochure titled "When It Rains, It Drains." Since school districts frequently cross MS4 boundaries, seek out watershed groups or other qualified service providers to help assist and/or implement school education on behalf of the group of permittees. Permittees also can partner with other permittees to jointly arrange for school education.

MCM #2: Public Involvement / Participation

The following are the requirements for MCM #2 that are included in the Federal Regulations:

- *Comply with applicable state and local public notice requirements when implementing a public involvement / participation program (40 CFR Part 122.34(b)(2)(i)).*

The following requirements, Best Management Practices (BMPs) and Measurable Goals are to be implemented and achieved by MS4 permittees in Pennsylvania:

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

Measurable Goal: New permittee's PIPP shall be developed and implemented during the first year of coverage under this permit. All permittees shall re-evaluate the PIPP each permit year and revise as needed. Your PIPP shall include, but not be limited to:

- a. Opportunities for the public to participate in the decision-making processes associated with the development, implementation, and update of programs and activities related to this permit.
- b. Methods of routine communication to groups such as watershed associations, environmental advisory committees, and other environmental organizations that operate within proximity to the permittee's regulated small MS4s or their receiving waters.
- c. Making your periodic reports available to the public on your website, at your municipal offices, or by US Mail upon request.

BMP #2: Prior to adoption of any ordinance required by this permit, provide adequate public notice and opportunities for public review, input, and feedback.

Measurable Goal: Advertise any proposed MS4 Stormwater Management Ordinance, provide opportunities for public comment, evaluate any public input and feedback, and document the comments received and the municipality's response.

BMP #3: Regularly solicit public involvement and participation from the target audience groups. This should include an effort to solicit public reporting of suspected illicit discharges. Assist the public in their efforts to help implement your SWMP. Conduct public meetings to discuss the on-going implementation of your SWMP.

Measurable Goals: Conduct at least one (1) public meeting per year to solicit public involvement and participation from target audience groups. The public should be given reasonable notice through the usual outlets a reasonable period in advance of each meeting. During the meetings, you should present a summary of your progress, activities, and accomplishments with implementation of your SWMP, and you should provide opportunities for the public to provide feedback and input. Your presentation can be made at specific MS4 meetings or during any other public meeting. Under this MCM, you should document and report instances of cooperation and participation in your activities; presentations you made to local watershed organizations and conservation organizations; and similar instances of participation or coordination with organizations in your community. You also should document and report activities in which members of the public assisted or participated in your meetings and in the implementation of your SWMP, including education activities or organized implementation efforts such as cleanups, monitoring, storm-drain stenciling, or others.

MCM #3: Illicit Discharge Detection and Elimination (IDD&E)

The following are the requirements for MCM #3 that are included in the Federal Regulations:

- *Develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4 (40 CFR Part 122.34(b)(3)(i)).*
- *Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and locations of all surface waters of the Commonwealth that receive discharges from those outfalls (40 CFR Part 122.34(b)(3)(ii)(A)).*
- *To the extent allowable under State or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into your storm sewer system and implement appropriate enforcement procedures and actions (40 CFR Part 122.34(b)(3)(ii)(B)).*
- *Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, to your system (40 CFR Part 122.34(b)(3)(ii)(C)).*
- *Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste (40 CFR Part 122.34(b)(3)(ii)(D)).*

The following requirements, Best Management Practices (BMPs) and Measurable Goals are to be implemented and achieved:

BMP #1: You shall develop and implement a written program for the detection, elimination, and prevention of illicit discharges into your regulated MS4s. Your program shall include dry weather field screening of outfalls for non-stormwater flows and sampling of dry weather discharges for selected chemical and biological parameters. Test results shall be used as indicators of possible discharge sources. The program shall include the following:

- a. Procedures for identifying priority areas. These are areas with a higher likelihood of illicit discharges, illicit connections, or illegal dumping. Priority areas may include areas with older infrastructure, a concentration of high-risk activities, or past history of water pollution problems.
- b. Procedures for screening outfalls in priority areas during varying seasonal and meteorological conditions.
- c. Procedures for identifying the source of an illicit discharge when a contaminated flow is detected at a regulated small MS4 outfall.
- d. Procedures for eliminating an illicit discharge.
- e. Procedures for assessing the potential for illicit discharges caused by the interaction of sewage disposal systems (e.g., on-lot septic systems, sanitary piping) with storm-drain systems.
- f. Mechanisms for gaining access to private property to inspect outfalls (e.g., land easements, consent agreements, search warrants).
- g. Procedures for program documentation, evaluation and assessment.

Measurable Goal: For new permittees, the IDD&E program shall be developed during the first year of coverage under this permit and shall be implemented and evaluated each year thereafter. For renewal permittees, the existing IDD&E program shall continue to be implemented and evaluated annually. Records shall be kept of all outfall inspections, flows observed, results of field screening and testing, and other follow-up investigation and corrective action work performed under this program.

Recommendation: For information on development and implementation of an IDD&E program, refer to: *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP, October 2004). <http://cfpub.epa.gov/NPDES/stormwater/idde.cfm>

BMP #2: Develop and maintain a map of your regulated small MS4. The map must also show the location of all outfalls and the locations and names of all surface waters of the Commonwealth (e.g., creek, stream, pond, lake, basin, swale, channel) that receive discharges from those outfalls.

Measurable Goals: For new permittees, develop the map(s) of your regulated small municipal separate storm sewer systems (MS4) and the information on all outfalls from your regulated small MS4 by the end of the fourth (4th) year of

permit coverage. For renewal permittees, the existing map(s) of your regulated small MS4 shall be updated and maintained as necessary during each year of coverage under the permit.

BMP #3: In conjunction with the map(s) created under BMP #2 (either on the same map or on a different map), new permittees shall show, and renewal permittees shall update, the entire storm sewer collection system, including roads, inlets, piping, swales, catch basins, channels, basins, and any other features of the permittee's storm sewer system, including municipal boundaries and/or watershed boundaries.

Measurable Goal: For new permittees, develop the map(s) by the end of the fourth (4th) year of coverage under the permit and update and maintain the map(s) as necessary each year of permit coverage thereafter. For renewal permittees, update and maintain the map(s) as necessary during each year of permit coverage.

BMP #4: Following the IDD&E program created pursuant to BMP #1, the permittee shall conduct outfall field screening, identify the source of any illicit discharges, and remove or correct any illicit discharges using procedures developed under BMP #1.

Measurable Goals: For new permittees, all of the identified regulated small MS4 outfalls shall be screened during Dry Weather on at least two (2) different occasions during the permit coverage term. In each permit coverage year, at least forty percent (40%) of the total number of outfalls should be screened.

For renewal permittees, each of the identified regulated small MS4 outfalls shall be screened at least once during each permit coverage term. For areas where past problems have been reported or known sources of dry weather flows occur on a continual basis, outfalls shall be screened annually.

For each outfall, if the screening reveals dry weather flow, the discharge from the outfall and the area around the outfall shall be inspected visually for color, turbidity, sheen, floating or submerged solids; for adverse affects on plants or animals in proximity to the outfall; and for odor. If the outfall produces any odor, or if the visual inspection shows any indication that the discharge may contain pollutants, then samples of the discharge shall be collected for field and / or lab testing of selected chemical and biological parameters as part of a process to determine if the dry weather flow is illicit. Common parameters include: pH; conductivity; E. Coli bacteria; fecal coliform bacteria; metals; suspended solids; dissolved solids; oils; ammonia; surfactants; chlorine; and fluoride.

You shall implement the IDD&E plan that you developed to address any non-storm water discharges. If an outfall does not have any dry weather flow, then sampling and testing are not needed.

For all permittees, outfall inspections need to be prioritized according to the perceived chance of illicit discharges within the outfall's contributing drainage area. Observations of each outfall shall be recorded each time an outfall is screened, regardless of the presence of dry weather flow. Proper quality assurance and quality control procedures shall be followed when collecting, transporting or analyzing water samples. All outfall inspection information shall be recorded on the Outfall Reconnaissance Inventory/Sample Collection field sheet (attached below) excerpted from the *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP, October 2004). Adequate written documentation shall be maintained to justify a determination that an outfall flow is not illicit. If an outfall flow is illicit, the actions taken to identify and eliminate the illicit flow also shall be documented.

The results of outfall inspections and actions taken to remove or correct illicit discharges shall be summarized in periodic reports.

Recommendation: All permittees should consider conducting some outfall screenings during varying seasonal and meteorological conditions since it is possible for illicit discharges/connections to occur during different times of the year and during or just after rain events. Seasonal outfall screenings conducted during periods of both low and high groundwater conditions can be beneficial in identifying illicit discharges that can occur during these times.

BMP #5: Enact a stormwater management ordinance to implement and enforce a stormwater management program (SWMP) that includes prohibition of non-stormwater discharges to the regulated small MS4.

Measurable Goal - 1: Within the first year of coverage under the permit, new permittees shall enact and implement an ordinance from an Act 167 Plan approved by the Department in 2005 or later; one (1) of the MS4 Stormwater Management Ordinances; or an ordinance that satisfies all applicable requirements in a completed and signed MS4 Stormwater Management Ordinance Checklist.

Renewal permittees must continue to maintain, update, implement, and enforce a Stormwater Management Ordinance that satisfies all applicable requirements.

Measurable Goal - 2: New permittees shall submit a letter signed by a municipal official, municipal engineer, or the municipal solicitor as an attachment to their first year report certifying the enactment of an ordinance that meets all applicable requirements of this permit. Renewal permittees shall update their existing ordinance, if necessary, and submit documentation of completion to the DEP.

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

Educational outreach should include:

- a. Distribution of brochures and guidance for target audiences including schools;
- b. Programs to encourage and facilitate public reporting of illicit discharges;
- c. Organizing volunteers to locate and visually inspect outfalls and to stencil storm drains; and
- d. Implement and encourage recycling programs for common wastes such as motor oil, antifreeze and pesticides.

Measurable Goals: During each year of permit coverage, appropriate educational information concerning illicit discharges shall be distributed to the target audiences using methods outlined under MCM #1. If not already established, set up and promote a stormwater pollution reporting mechanism (e.g., a complaint line with message recording) by the end of the first year of permit coverage for the public to use to notify you of illicit discharges, illegal dumping or outfall pollution. Respond to all complaints in a timely and appropriate manner. Document all responses, include the action taken, the time required to take the action, whether the complaint was resolved successfully.

MCM #4: Construction Site Stormwater Runoff Control

If you checked Option MCM #4.A in Section E(4)-(5) of the NOI, then you are relying on DEP's statewide QLP for issuing NPDES Permits for Stormwater Discharges Associated with Construction Activities to satisfy all requirements under this MCM #4 and under BMPs #1 through #3 of MCM #5; therefore, all requirements are met for both this MCM #4 and BMPs #1 through #3 of MCM #5.

If you checked Option MCM #4.B in Section E(4)-(5) of the NOI, you are not relying on DEP's QLP for issuing NPDES Permits for Stormwater Discharges Associated with Construction Activities to satisfy this MCM #4 and BMPs #1 through #3 of MCM5; therefore, you must implement and achieve all of the requirements in this MCM #4 and all of the requirements in MCM #5, including the Best Management Practices (BMPs) and the Measurable Goals.

The following are the requirements for MCM #4 that are included in the Federal Regulations:

- *Develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that equals one acre or more (40 CFR Part 122.34(b)(4)(i)).*
- *Develop and implement an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law (40 CFR Part 122.34(b)(4)(ii)(A)).*
- *Require construction site operators to implement appropriate erosion and sediment control best management practices (BMPs) (40 CFR Part 122.34(b)(4)(ii)(B)).*
- *Develop and implement requirements for construction site operators to control waste at the construction site that may cause adverse impacts to water quality. These wastes can include discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste (40 CFR Part 122.34(b)(4)(ii)(C)).*
- *Develop and implement procedures for site plan review which incorporate consideration of potential water quality impacts (40 CFR Part 122.34(b)(4)(ii)(D)).*
- *Develop and implement procedures for receipt and consideration of information submitted by the public (40 CFR Part 122.34(b)(4)(ii)(E)).*
- *Develop and implement procedures for site inspections and enforcement of control measures (40 CFR Part 122.34(b)(4)(ii)(F)).*

Under 25 Pa. Code, Chapter 102 of Department regulations issued under the authority of the Pennsylvania Clean Streams Law, the permittee (a municipality or a county) may not issue a building or other permit or final approval to those proposing or conducting earth disturbance activities requiring a DEP permit until the DEP has issued the permit, or DEP or a delegated county conservation district (CCD) has approved coverage under an NPDES Permit for Stormwater Discharges Associated With Construction Activities.

BMP #1: Develop your program consisting of all procedures necessary to comply with the requirements of this MCM. Your program shall provide for construction stormwater permitting, construction inspection, and enforcement of installation and maintenance of the necessary Erosion and Sedimentation (E&S) control measures. Your program shall describe clearly how your program will be coordinated with DEP's NPDES Construction Stormwater Permitting program.

Measurable Goal - 1: For new permittees, the written program for this MCM shall be developed during the first year of permit coverage; nevertheless, you are responsible for implementation of this MCM during entire term of this permit, including the time you are developing your program.

For all permittees, your program shall be reviewed and updated during each year of permit coverage. The purpose of the written program is to establish clear roles and responsibilities for the implementation of the MCM #4 requirements. An agreement between the permittee, the CCD, and any other resources to be used by the permittee that clearly defines roles for each entity is recommended. If an agreement is made, you shall place and keep a written copy in your file, consistent with the Retention of Records requirements in this Permit. Please note that in accordance with

Section A.2.h in Part A of the Authorization to Discharge, as the permittee you are responsible to ensure that implementation of all requirements under this Permit are fulfilled.

Recommendation: Develop a tracking system that summarizes your actions to comply with this BMP (e.g., number of active construction sites, inspections, enforcement actions, etc.) and which can be described in a summary report format.

Measurable Goal - 2: If any portion of your regulated small MS4 is located in, or discharging to, Waters of the Commonwealth, including wetlands, that have an existing or designated use that qualifies as either "High Quality Waters" or "Exceptional Value Waters" under 25 Pa. Code Chapter 93 of DEP's regulations, then your program for this MCM, as written and as implemented, must ensure that stormwater discharges from new development or redevelopment into that portion of your regulated small MS4 will not cause or contribute to degradation of the quality of the receiving waters.

Recommendation: Develop maps, design guidance, application review guidance, inspection procedures, enforcement procedures, and a tracking system to ensure that this requirement is met.

BMP #2: The permittee shall enact, implement, and enforce an ordinance to require the implementation of erosion and sediment control BMPs, as well as sanctions to ensure compliance.

Measurable Goal - 1: Within the first year of coverage under the permit, new permittees shall enact and implement an ordinance that meets all applicable requirements of this permit.

Measurable Goal - 2: Permittees shall submit a letter signed by a municipal official, municipal engineer or the municipal solicitor as an attachment to their first periodic report certifying the enactment and implementation of a stormwater management ordinance that meets all requirements of this permit

BMP #3: Develop and implement requirements for construction site operators to control waste at the construction site that may cause adverse impacts to water quality. While sediment is the most common pollutant of concern for MCM #4, there are other types of pollutants that also can be a concern and the intent of this BMP is to address these other types of pollutants, such as, but not limited to, discarded building materials, washout from concrete trucks, chemicals, litter, and sanitary waste.

Measurable Goal: New permittees shall establish requirements to address this BMP by the end of the first year of permit coverage. Renewal permittees shall continue to implement existing requirements and update as necessary. This could be implemented by written municipal ordinance/code provisions, by standard notes on the site plans, by any other written format that accomplishes the objectives of this BMP, or by any combination of these measures. The goal of this BMP shall be communicated to construction site operators during pre-construction meetings. This BMP shall be implemented during each year of the MS4 permit. Permittees must prepare and maintain records of site inspections, including dates and results and you must maintain these records in accordance with the Retention of Records requirements in this Permit.

Recommendation: Verification of proper waste handling procedures can be determined at the same time that site E&S control inspections are conducted under BMP #1, described above.

BMP #4: Develop and implement procedures for the receipt and consideration of public inquiries, concerns, and information submitted by the public (to the permittee) regarding local construction activities. The permittee shall demonstrate acknowledgement and consideration of the information submitted, whether submitted verbally or in writing.

Measurable Goal: Permittees shall establish and implement a tracking system to keep a record of any submitted public information as well as your response, actions, and results. This BMP shall be implemented during each year of coverage under this permit and information should be submitted with the each periodic report.

Recommendation: Develop a tracking system that can keep a record of information submitted by the public as well as your responses to such public inquiries. The tracking system should be capable of producing periodic summary reports.

MCM #5: Post-Construction Stormwater Management (PCSM) in New and Re-Development Activities

If you checked Option MCM #4.A in Section E(4)-(5) of the NOI, then you are relying on DEP's statewide QLP for issuing NPDES Permits for Stormwater Discharges Associated with Construction Activities to satisfy all requirements under BMPs #1 through #3 of this MCM #5; therefore, all requirements are met for BMPs #1 through #3 of this MCM #5 and for all requirements under MCM #4.

If you checked Option MCM #4.B in Section E(4)-(5) of the NOI, you are not relying on DEP's QLP for issuing NPDES Permits for Stormwater Discharges Associated with Construction Activities to satisfy the requirements in BMPs #1 through #3 of this MCM #5; therefore, you must implement and achieve all of the requirements in this MCM #5 and all of the requirements in MCM #4, including the Best Management Practices (BMPs) and the Measurable Goals.

The following are the requirements for MCM #5 that are included in the Federal Regulations:

- *Develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Your program shall ensure that controls are in place that would prevent or minimize water quality impacts (40 CFR Part 122.34(b)(5)(i)).*
- *Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for your community (40 CFR Part 122.34(b)(5)(ii)(A)).*
- *Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law (40 CFR Part 122.34(b)(5)(ii)(B)).*
- *Ensure adequate long-term operation and maintenance of BMPs (40 CFR Part 122.34(b)(5)(ii)(C)).*

The following requirements, Best Management Practices (BMPs) and Measurable Goals are to be implemented and achieved:

Note: Please refer to the definitions section of this permit for clarification of terms used in this MCM. In the following language, the term "BMPs" refers to **post-construction stormwater management controls and Best Management Practices**.

BMP #1: Develop a written procedure that describes how the permittee shall address all required components of this MCM. Guidance can be found in the Pennsylvania Stormwater Best Management Practices Manual. This plan shall include the following components:

- a. Minimum requirements for use of structural and/or non-structural BMPs in plans for development and redevelopment;
- b. Criteria for selecting and standards for sizing stormwater BMPs;
- c. Implementation of an inspection program to ensure that BMPs are properly installed;

Measurable Goal: The written procedure shall be developed by the end of the first year of permit coverage and be reviewed and updated every permit year thereafter, as needed. The intent of BMP #1 is for the permittee to describe how the listed tasks will be accomplished.

BMP #2: Require the implementation of a combination of structural and/or non-structural BMPs that are appropriate to the local community, that minimize water quality impacts, and that are designed to maintain pre-development runoff conditions. This requirement can be met by ensuring that the selected BMPs comply with the municipal Stormwater Management Ordinance that meets the requirements of this permit.

Measurable Goal: All qualifying development or redevelopment projects shall be reviewed to ensure that their post-construction stormwater management plans and selected BMPs conform to the applicable requirements. A tracking system (e.g., database, spreadsheet, or written list) shall be maintained to record qualifying projects and their associated BMPs. In your records, you shall note if there are no qualifying projects in a calendar year.

BMP #3: Ensure that controls are installed that shall prevent or minimize water quality impacts.

Measurable Goal: All qualifying development or redevelopment projects shall be inspected during the construction phase to ensure proper installation of the approved structural PCSM BMPs. A tracking system (e.g., database, spreadsheet, or written list) shall be implemented to track the inspections conducted and to track the results of the inspections (e.g., BMPs were, or were not, installed properly). Permittees not relying on DEP's statewide QLP to satisfy requirements under this BMP shall summarize construction inspections and results in periodic reports. See BMP #6 for requirements related to post-construction inspection and tracking of PCSM BMPs to ensure that the operation and maintenance plan is being implemented.

BMP #4: The permittee shall enact, implement, and enforce an ordinance or other regulatory mechanism to address post-construction stormwater runoff from new development and redevelopment projects, as well as sanctions and penalties associated with non-compliance, to the extent allowable under State or local law.

Measurable Goal - 1: Within the first year of coverage under this permit, new permittees shall enact and implement a stormwater management ordinance that meets the requirements of this permit.

Measurable Goal - 2: All permittees shall submit a letter signed by a municipal official, municipal engineer or the municipal solicitor as an attachment to their first periodic report certifying the enactment of a stormwater management ordinance that meets the requirements of this permit.

BMP #5: Develop and implement measures to encourage and expand the use of Low Impact Development (LID) in new and redevelopment. Measures also should be included to encourage retrofitting LID into existing development. DEP's Pennsylvania Stormwater Best Management Practices Manual provides guidance on implementing LID practices.

Measurable Goal - 1: In your inventory of development and redevelopment projects authorized for construction since March 10, 2003, that discharge stormwater to your regulated small MS4s, indicate which projects incorporated LID practices and for each project list and track the BMPs that were used.

Measurable Goal - 2: Enact ordinances consistent with LID practices and repeal sections of ordinances that conflict with LID practices. Progress with enacting and updating your ordinances to enable the use of LID practices shall be summarized in the periodic reports.

Recommendations: The EPA website provides publications on LID, including Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices Publication Number EPA 841-F-07-006, December 2007 at <http://www.epa.gov/owow/nps/lid/costs07/>. The Pennsylvania Standards for Residential Site Development, Pennsylvania Housing Research/Resource Center, The Pennsylvania State University, April 2007 at <http://www.engr.psu.edu/phrc/>.

BMP #6: Ensure adequate Operation and Maintenance (O&M) of all post-construction stormwater management BMPs installed at all qualifying development or redevelopment projects (including those owned or operated by the permittee).

Measurable Goal - 1: Within the first year of coverage under this permit, new permittees shall develop and implement a written inspection program to ensure that stormwater BMPs are properly operated and maintained. The program shall include sanctions and penalties for non-compliance. All permittees shall review and update the inspection program annually and shall continue to implement this BMP.

Measurable Goal - 2: An inventory of PCSM BMPs shall be developed by permittees and shall be continually updated during the term of coverage under the permit as development projects are reviewed, approved, and constructed. This inventory shall include all PCSM BMPs installed since March 10, 2003 that discharge directly or indirectly to your regulated small MS4s. The inventory also should include PCSM BMPs discharging to the regulated small MS4 system that may cause or contribute to violation of water quality standard. The inventory shall include:

- a. All PCSM BMPs that were installed to meet requirements in NPDES Permits for Stormwater Discharges Associated with Construction Activities approved since March 10, 2003.

- b. The exact location of the PCSM BMP (e.g., street address);
- c. Information (e.g., name, address, phone number(s)) for BMP owner and entity responsible for BMP Operation and Maintenance (O&M), if different from BMP owner;
- d. The type of BMP and the year it was installed;
- e. Maintenance required for the BMP type according to the Pennsylvania Stormwater BMP Manual or other manuals and resources;
- f. The actual inspection/maintenance activities for each BMP;
- g. An assessment by the permittee if proper occurred during the year and if not, what actions the permittee has taken, or shall take, to address compliance with O&M requirements

Recommendation: Develop a single system that supports recording and tracking the information specified in BMPs #3, #4 and #5.

Measurable Goal - 3: If any portion of your regulated small MS4 is located in, or discharging to, Waters of the Commonwealth, including wetlands, that have an existing or designated use that qualifies as either “High Quality Waters” or “Exceptional Value Waters” under 25 Pa. Code Chapter 93 of DEP’s regulations, then your inspection program for this MCM, as written and as implemented, must ensure that stormwater discharges from new development or redevelopment into that portion of your regulated small MS4 will not cause or contribute to degradation of the quality of the receiving waters.

Recommendation: Develop maps, inspection procedures, enforcement procedures, and a tracking system to ensure that this requirement is met.

MCM #6: Pollution Prevention/Good Housekeeping for Municipal Operations

The following are the requirements for MCM #6 that are included in the Federal Regulations:

- *Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations (40 CFR Part 122.34(b)(6)(i)).*
- *Provide employee training to prevent and reduce stormwater pollution from activities such as parks and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance (40 CFR Part 122.34(b)(6)(i)).*

The following requirements, Best Management Practices (BMPs) and Measurable Goals are to be implemented and achieved:

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

Measurable Goal: By the end of the first year of permit coverage, new permittees shall identify and document all types of municipal operations, facilities and activities and land uses that may contribute to stormwater runoff within areas of municipal operations that discharge to the regulated small MS4. Renewal permittees should have completed this list during the previous permit term. For all permittees, this information shall be reviewed and updated each year of permit coverage, as needed. Part of this effort shall include maintaining a basic inventory of various municipal operations and facilities.

BMP #2: Develop, implement and maintain a written operation and maintenance (O&M) program for all municipal operations and facilities that could contribute to the discharge of pollutants from the regulated small MS4s, as identified under BMP #1. This program (or programs) shall address municipally owned stormwater collection or conveyance systems, but could include other areas (as identified under BMP #1). The O&M program(s) should stress pollution prevention and good housekeeping measures, contain site-specific information, and address the following areas:

- a. Management practices, policies, procedures, etc. shall be developed and implemented to reduce or prevent the discharge of pollutants to your regulated small MS4s. You should consider eliminating maintenance-area discharges from floor drains and other drains if they have the potential to discharge to storm sewers.
- b. Maintenance activities, maintenance schedules, and inspection procedures to reduce the potential for pollutants to reach your regulated small MS4s. You also should review your procedures for maintaining your stormwater BMPs.
- c. Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt / sand (anti-skid) storage locations and snow disposal areas.
- d. Procedures for the proper disposal of waste removed from your regulated small MS4s and your municipal operations, including dredge spoil, accumulated sediments, trash, household hazardous waste, used motor oil, and other debris.

Measurable Goal: During the first year of permit coverage, new permittees shall develop and implement a written O&M program that complies with BMPs #1 and #2. Renewal permittees shall continue to implement their existing program. All permittees shall review the O&M program annually, edit as necessary, and continue to implement during every year of permit coverage.

Guidance: Permittees may develop a single all encompassing written O&M program or they may develop separate programs for their stormwater system and for their vehicles.

BMP #3: Develop and implement an employee training program that addresses appropriate topics to further the goal of preventing or reducing the discharge of pollutants from municipal operations to your regulated small MS4s. The program may be developed and implemented using guidance and training materials that are available from federal, state or local agencies, or other organizations. Any municipal employee or contractor shall receive training. This could include public works staff, building / zoning / code enforcement staff, engineering staff (on-site and contracted), administrative staff, elected officials, police and fire responders, volunteers, and contracted personnel. Training topics should include operation, inspection, maintenance and repair activities associated with any of the municipal operations / facilities identified under BMP #1. Training should cover all relevant parts of the permittee's overall stormwater management program that could affect municipal operations, such as illicit discharge detection and elimination, construction sites, and ordinance requirements.

Measurable Goal - 1: During the first year of permit coverage, new permittees shall develop and implement a training program that identifies the training topics that will be covered, and what training methods and materials will be used. Renewal permittees shall continue to operate under their existing program. All permittees shall review the training program annually, edit it as necessary, and continue to implement it during every year of permit coverage.

Measurable Goal - 2: Your employee training shall occur at least annually (i.e., during each permit coverage year) and shall be fully documented in writing and reported in your periodic reports. Documentation shall include the date(s) of the training, the names of attendees, the topics covered, and the training presenter(s).

Guidance: The training requirements of this BMP can be met in various ways. Training can be:

- a. formal or informal;
- b. conducted on-site or off-site;
- c. conducted on-the-job or during dedicated training periods;
- d. conducted one-on-one or in a group setting (including with staff from other MS4s);
- e. conducted by municipal staff or consultants/volunteers;
- f. conducted via oral presentations/instructions and/or via written materials (e.g., SOP's, guidance manuals, tests).

Recommendation: For efficiency and cost savings, you may wish to arrange and schedule joint training events with other nearby operators of regulated small MS4s.

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Appendix B

Pre-MS4 Audit Records Request

The EPA Inspection Team requests the City, if possible, to provide an electronic copy of the following items. Please denote the name of each document and associated explanatory notes in the applicable table cells below.

	Document Request	Name of Document(s) Provided	Description / Comments / Notes
Program Management	1. Permit Notice of Intent.		
	2. MS4 Annual Reports (two most recent reporting years).		
	3. Organizational chart clearly indicating positions or divisions responsible for your MS4 program.		
	4. A copy of the most recent SWMP and/or associated documents used to implement the MS4 program and associated MCMs.		
	5. Any formal agreements with other entities or local governments for implementation of your MS4 programs (e.g., memoranda of understanding–MOUs, etc.).		
Illicit Discharge Detection and Elimination	6. Map showing the extent of the urbanized area, location of outfalls, observation points and location and names of all surface waters that receive discharge from the outfalls.		
	7. A map showing the entire storm sewer collection system and its components (if different from the map in item six above).		
	8. Completed examples of dry-weather screening inspection checklists (most recent reporting year).		
	9. Documentation, including field screening reports and follow up actions, from any dry weather screening that has occurred during the Permit term.		

	10. Inventory of complaints and identified illicit discharges and actions taken to resolve the discharges in the two most recent reporting periods.		
	11. A copy of the stormwater ordinance or SOP that prohibits non-stormwater discharges.		
	12. Copies of educational materials used for outreach for public employees, businesses, property owners, the general public and elected officials.		
Construction Site Stormwater Runoff Control	13. Map/inventory showing the location of current active construction sites in the permitted area (differentiating County-sponsored from private projects).		
	14. Ordinance or SOP that requires the implementation and maintenance of erosion and sediment control BMPs.		
	15. Written program and procedures for implementation and enforcement of erosion and sediment control BMPs. (Include tools such as checklists used for documenting inspections and enforcement activity.)		
	16. Example construction inspection records (most recent reporting year).		
	17. Example/case file of a construction site issue where City used ordinance or other regulatory mechanism(s) to enforce compliance (Ideally, select example showing full extent of City's enforcement authority).		

Post Construction Stormwater Management (PCSW) In New Development and Redevelopment	18. Current inventory and associated information required by the Permit (i.e., location, ownership, type, etc.) of post-construction BMPs within the MS4.		
	19. Inspection and maintenance records for the most two recent reporting periods for post-construction BMPs within the MS4.		
Pollution Prevention / Good Housekeeping	20. Current map/inventory of City facilities, properties and operations that have the potential to generate pollution in stormwater.		
	21. The written O&M program for all operations that could contribute to the discharge of pollutants from the MS4.		
	22. Employee training materials and attendance logs for the two previous reporting periods.		
Pollutant Control Measures and Pollutant Reduction Plans (TMDL Implementation)	23. Copy of the City's most current pollutant reduction plan (PRP).		
	24. Inventory of all pollutant sources associated with applicable waterbody impairments requiring pollutant control measures (PCMs) to be implemented by the MS4.		
	25. Documentation (including written notifications to DEP) and/or sampling results of any investigation into pollutant sources listed in the inventory above (if not included in the submitted annual reports)		

Appendix C

Exhibit Log

Exhibit 1

MS4 Professional Services Agreement



WILLIAMSPORT SANITARY AUTHORITY
253 WEST FOURTH STREET
WILLIAMSPORT, PA 17701
(570) 323-6148

December 22, 2017

Mrs. Rebecca Haladay, Engineer
City of Williamsport
245 West Fourth Street
Williamsport, PA 17701

Dear Mrs. Haladay,

Please find enclosed your copy of the fully executed Professional Service Agreement (PSA) where the Williamsport Sanitary Authority (WSA) has agreed to facilitate the Minimum Control Measures (MCMs) identified in the NPDES Individual Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), Permit Number PA1134808, on behalf of the City of Williamsport. Please note, this scope does not include the annual Chesapeake Bay report update for the CBPRP that is due to be submitted with the permit renewal application in 2018. The WSA will schedule a meeting in January 2018 to discuss the details involved with the implementation of the PSA.

If you have any questions or concerns prior to that time, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Wendy J. Walter'.

Wendy J. Walter
Interim Executive Director



WILLIAMSPORT SANITARY AUTHORITY
253 WEST FOURTH STREET
WILLIAMSPORT, PA 17701
(570) 323-6148

MS4 PROFESSIONAL SERVICES AGREEMENT

The Williamsport Sanitary Authority (WSA) is pleased to offer the following proposal to assist the City of Williamsport in meeting its Municipal Separate Storm Sewer System (MS4) permit requirements:

- WSA personnel will provide professional guidance and staffing redundancy to ensure administrative tasks required under the MS4 permit are completed in a timely and efficient manner.
- WSA will conduct regular meetings of the MS4 Coalition. Meeting agendas will be made with the intent to address outstanding issues and keep coalition members fully engaged and informed in the most effective manner possible. Coalition members will provide input into meeting agendas, and the WSA will provide written summaries of each meeting. A timeline has been developed and will be used to keep the Coalition on target to meet all responsibilities.
- WSA will prepare and submit the Annual Report on behalf of the eight joint permittees, and respond to all comments, with the understanding that the coalition members will play an integral role in providing information and input as necessary.
- ~~Third party contracts that are determined to be jointly shared will be administered by the WSA, to include a defined scope of work and pricing approved by a majority vote. The cost of any third party contracts administered by WSA will be reimbursed by members to the WSA in accordance with the pre-determined cost allocation, and shown as a pass-through line item on WSA invoices.~~ RAH 12/7/17
- ~~WSA will bill each coalition member (Group of 10) \$500 annually to offset costs of the Authority for administrative functions, public outreach for MCMs #1 and #2, and one annual training event in accordance with MCM #6, all of which has been estimated at \$5,000 per year.~~ RAH 12/7/17
- ~~WSA will bill each joint permittee (Group of 8) an additional \$4,250 annually to offset costs of the Authority in preparation and submission of the Annual Report, and administration of MCMs as agreed and summarized on the attached table, all of which has been estimated at \$34,000 per year.~~ RAH 12/7/17

- In anticipation of full participation, the City of Williamsport will be billed \$4,750 annually for these administrative services. Should there be a change in the number of actual members participating, the estimated costs for WSA services will be equally split amongst the active participants.
- Billing will occur on a quarterly basis in advance of work performed.
- WSA will monitor actual costs incurred. To the extent that actual annual costs exceed billed costs, the City will reimburse the WSA their appropriate share, and subsequent quarterly charges will reflect the higher anticipated annual costs. Should actual annual costs incurred by the WSA be lower than anticipated in the annual charges, a reimbursement will be made to the City, and subsequent quarterly charges will be adjusted as appropriate.

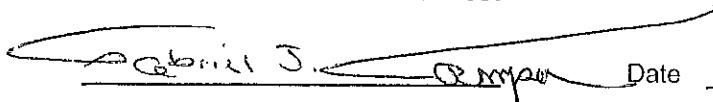
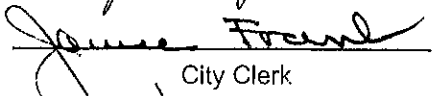
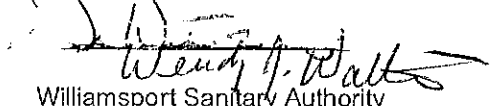
The WSA, under this Agreement, assumes no responsibility for the ownership or operation of the City of Williamsport storm sewer system. The City will continue to be responsible for the day to day maintenance including, but not limited to the routine monitoring, operation and maintenance, cleaning, street sweeping, and general maintenance related to the storm sewer facilities and equipment.

The WSA will not be responsible for failure to meet any requirements of the MS4 permit caused by a failure of one or more coalition or joint permittee members to provide timely information to the WSA, or the failure of one or more members to appropriately address required activities.

This Agreement will commence on the date of approval as signed below, with WSA activity and billing retroactive to August 2017. The Agreement shall renew automatically for consecutive renewal terms of twelve months, and may be terminated by either party upon 90 days' written notice. Upon termination, actual versus billed costs to-date will be analyzed, with the parties agreeing to reimburse the other for any difference determined.

This Agreement contains the entire understanding of the parties with respect to its subject matter, and there are no other agreements, representations or warranties, whether made as an inducement to the execution of this Agreement or otherwise. This Agreement may be modified only by a written agreement executed and approved by both parties. Neither party shall assign, sublet or transfer their interest in the Agreement without the written consent of the other.

AUTHORIZED SIGNATURES:

	Date _____
Mayor	
	Date _____
City Controller	
	Date _____
City Clerk	
	Date <u>12-21-17</u>
Williamsport Sanitary Authority	

15

CITY OF WILLIAMSPORT, PA RESOLUTION

RESOLUTION # 8722

DATE 12-14-17

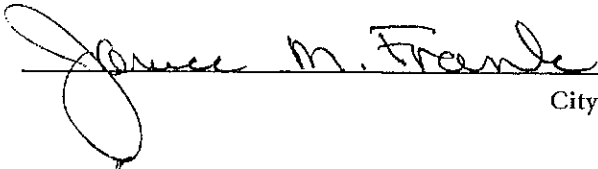
TITLE

**RESOLUTION AUTHORIZING A MEMORANDUM OF AGREEMENT BETWEEN
THE CITY OF WILLIAMSPORT AND THE WILLIAMSPORT SANITARY
AUTHORITY FOR MUNICIPAL SEPARATE STORM SEWER SYSTEM
COORDINATION SERVICES**

WHEREAS, the City of Williamsport wishes to enter into an agreement with the Williamsport Sanitary Authority (WSA) for Municipal Separate Storm Sewer System (MS4) Coordination services,

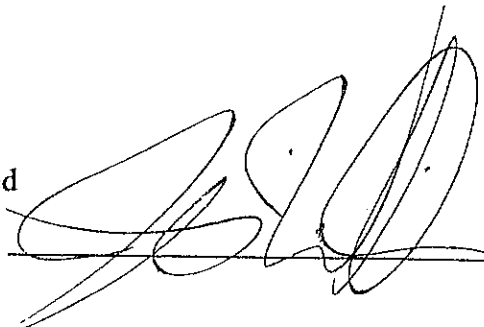
NOW, THEREFORE BE IT HEREBY RESOLVED BY, the City Council of the City of Williamsport, Lycoming County, Pennsylvania that the Mayor and City Controller are authorized to execute the attached Memorandum of Agreement between the Williamsport Sanitary Authority, and the City of Williamsport;

BE IT FURTHER RESOLVED, that City Council of the City of Williamsport hereby allocates resources in the amount of and not to exceed \$4,750.



City Clerk

Approved



President

Exhibit 2

Joint Chesapeake Bay Pollutant Reduction Plan (PRP)



776 Bull Run Crossing, Suite 200
Lewisburg, PA 17837
570.524.6744
www.hrg-inc.com

VIA EMAIL

September 18, 2020

Mr. Thomas Randis
Pennsylvania Department of Environmental Protection
North Central Regional Office
208 West Third Street, Suite 101
Williamsport, Pennsylvania 17701

Re: PRP Plan Revision/Addendum
Joint Client Williamsport Area Joint MS4s

Dear Mr. Randis:

On behalf of Loyalsock Township and the City of Williamsport, the Joint Applicants who collaborated on the Joint Pollutant Reduction Plan (PRP) for their respective MS4 Service Areas, we offer this plan revision/addendum regarding the above-referenced project.

Sincerely,
Herbert, Rowland & Grubic, Inc.

Matthew J. Vanaskie, P.E.
Project Manager

MJV

R003405.0431

\\hrg.local\hrgdfsfiles\Project\0034\003405_0431\Admin\Reports\MS4\JointPRPRevision2020\SecondDraft\TransmittalLetter_CBPRP_Revision_200918.docx

c: Bill Burdett, Loyalsock Township
Jon Sander, City of Williamsport
Michael Miller, Williamsport Sanitary Authority
Wendy Walter, Williamsport Sanitary Authority
Marcia LeBeau, Williamsport Sanitary Authority
Erin Letavic, HRG

HRG

Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

AN EMPLOYEE-OWNED COMPANY

WILLIAMSPORT AREA JOINT MS4s

JOINT CHESAPEAKE BAY POLLUTANT REDUCTION PLAN



"The Place to Live!"

LOYALSOCK TOWNSHIP



Submitted to:

LOYALSOCK TOWNSHIP
2501 East Third Street
Williamsport, PA 17701

CITY OF WILLIAMSPORT
245 West Fourth Street
Williamsport, PA 17701

WILLIAMSPORT SANITARY AUTHORITY
253 West Fourth Street
Williamsport, PA 17701

Submitted by:

HERBERT, ROWLAND & GRUBIC, INC.
776 Bull Run Crossing, Suite 200
Lewisburg, PA 17837
570.524.6744

Williamsport Area Joint MS4s
Joint Chesapeake Bay Pollutant Reduction Plan
CITY OF WILLIAMSPORT AND LOYALSOCK TOWNSHIP
LYCOMING COUNTY, PENNSYLVANIA

TABLE OF CONTENTS

Introduction	1
Section A: Public Participation	2
Section B: Mapping	2
Section C: Pollutants of Concern.....	3
Section D: Determine Existing Loading for Pollutants of Concern	4
D.1 Sewershed Planning Areas	4
D.2 Parsed Area Calculation.....	4
D.3 Existing Pollutant Load Calculation	5
D.4 Existing Pollutant Loading Adjustment for Previously Implemented BMPs.....	5
Section E: BMPs to Achieve the Required Pollutant Loading Reductions.....	6
E.1 Required Pollutant Reduction Calculation.....	6
E.2 Proposed BMPs.....	7
E.3 Secondary Projects and Meeting the MS4 Goal	8
Section F: Funding Mechanisms.....	10
Section G: BMP Operations and Maintenance	10
APPENDIX A: Public Participation Documentation	
APPENDIX B: Mapping	
APPENDIX C: PADEP Municipal MS4 Requirements Table	
APPENDIX D: Existing Baseline Pollutant Load Calculations	
APPENDIX E: Existing BMP Documentation	
APPENDIX F: Proposed BMP Documentation	
Appendix G: Municipal Agreement for CBPRP.....	

INTRODUCTION

The City of Williamsport and Loyalsock Township (Applicants) discharge stormwater to surface waters located within the Chesapeake Bay Watershed and are therefore regulated by the National Pollutant Discharge Elimination System Individual Permit to Discharge Stormwater from Small Municipal Separate Sewer Systems. The Applicants submitted a Municipal Separate Storm Sewer System (MS4) individual permit application and a Joint Pollutant Reduction Plan (PRP) to the Pennsylvania Department of Environmental Protection (PADEP) on October 1, 2018, and the Applicants have determined that the PRP should be amended so that it is an implementable plan with confidence that the proposed best management practices (BMPs) meet PADEP's credit eligibility guidelines. This Joint Chesapeake Bay Pollutant Reduction Plan (CBPRP) was developed in accordance with both individual permit requirements, and it documents how the Applicants intend to achieve the pollutant reduction requirements listed in the PADEP Municipal MS4 Requirements Table¹ and the NPDES Stormwater Discharges From Small Municipal Separate Storm Sewer Systems Pollutant Reduction Plan (PRP) Instructions².

General Information	
Permittee Name: Williamsport Area Joint MS4s	NPDES Permit No.: PAI134813 (previously PAI134808)
Mailing Address: 253 West Fourth Street	Effective Date: April 1, 2014
City, State, Zip: Williamsport, PA 17701	Expiration Date: March 31, 2019
MS4 Contact Person: Marcia LeBeau	Renewal Due Date: September 20, 2020
Title: Joint Permit Contact	Municipality: City of Williamsport & Loyalsock Township
Phone: 570-323-6140	County: Lycoming
Email: mlebeau@wmwa-wsa.org	
Client/Operator Name: City of Williamsport, Lycoming County	Client/Operator Name: Loyalsock Township, Lycoming County
Mailing Address: City Clerk Office Williamsport City Hall 245 West Fourth Street	Mailing Address: 2501 East Third Street
City, State, Zip: Williamsport, PA 17701	City, State, Zip: Williamsport, PA 17701
Contact Person: Jon Sander	Contact Person: Bill Burdett
Title: City Engineer	Title: Township Manager
Phone: 570-220-1872	Phone: 570-323-6151
Email: jsander@cityofwilliamsport.org	Email: bill@loyalsocktownship.org
Consultant Name: Herbert, Rowland & Grubic, Inc.	Consultant Contact: Matthew Vanaskie, P.E. 776 Bull Run Crossing, Suite 200 Lewisburg, PA 17837 (570) 524-6744 mvanaskie@hr-g-inc.com

The City of Williamsport (City) and Loyalsock Township (Township) have approximately 9,792 acres of urbanized area within municipal boundaries and an additional 287 acres area that drains to

¹ PADEP, MS4 Requirements Table (Municipal) (rev. 11/18/2019)

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

stormwater systems within the City and Township's municipal boundaries. The total 10,113 acres of urbanized area and contributing storm sewershed area are considered to be the planning area for the Applicants' Joint PRP.

Loyalsock Township is in the Millers Run, Mill Creek-West Side of Loyalsock Creek, Little Bear Creek-Loyalsock Creek, and Lycoming Creek-West Branch of Susquehanna River HUC-12 watersheds. Williamsport City is in the Millers Run, Lycoming Creek, and Quenschukey Creek HUC-12 watersheds.

SECTION A: PUBLIC PARTICIPATION

A.1 2018 Plan

A public notice was published in the Williamsport Sun-Gazette on July 2, 2018 and the Applicants had made a complete copy of the proposed PRP available for public review. Written comments were received for 30 days after the public notice was published. On July 19 and July 24, 2018, the Applicants presented their PRP at regularly scheduled meetings within the 30-day review period.

A.2 2020 Plan Revision

A revised copy of this CBPRP was made available for the public to review at the City of Williamsport and Loyalsock Township municipal websites from August 3, 2020 to September 2, 2020. The availability of the document was publicized on the municipal websites for at least 30 days and published in a legal advertisement in the Williamsport Sun-Gazette on July 29, 2020. 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. Copies of the public notice as posted on the municipal websites and published in the Williamsport Sun-Gazette are included in Appendix A.

The information contained in this report revision was presented to the public during the regularly scheduled Loyalsock Township Board of Supervisor's meeting held on August 25, 2020. The report revision was also discussed at the City of Williamsport Public Works Committee meeting on August 25, 2020 and the City Council meeting on August 27, 2020.

Written comments were accepted for 30 days following the publication date of the public notice. One comment was received and is addressed in Appendix A.

SECTION B: MAPPING

The PRP planning area map is provided in Appendix B. The figure illustrates the planning area with municipal boundaries, urbanized area, and water course features. Additional elements included are parsed areas, impaired stream reaches, storm sewershed additions to the planning area, and the locations of existing and proposed BMPs. A description of the parsed areas is provided in Section D. A description of primary and secondary BMPs selected to address pollution reduction requirements is provided in Section E and Appendices E and F.

SECTION C: POLLUTANTS OF CONCERN

The pollutants of concern for the City and Township were determined by referencing the PADEP MS4 Municipal Requirements Table³ (Table 1). The applicable section of this table is included for reference in Appendix C.

TABLE 1. POLLUTANTS OF CONCERN

Planning Area (Watershed)	Impaired Downstream Water	Pollutants of Concern	City of Williamsport	Loyalsock Township
CBPRP	Chesapeake Bay Nutrients/ Sediment	Appendix D - Nutrients, Siltation (4a)	X	X
Lycoming Creek-West Branch Susquehanna River	Unnamed Tributaries to Lycoming Creek	Appendix E-Organic Enrichment/Low D.O. (5)	X	X
Mill Creek-West Side of Loyalsock Creek	West Branch Susquehanna River	Appendix C-PCB (5)		X
Little Bear Creek-Loyalsock Creek	West Branch Susquehanna River	Appendix C-PCB (5)		X
Millers Run	West Branch Susquehanna River	Appendix C-PCB (5)	X	X
Lycoming Creek-West Branch Susquehanna River	West Branch Susquehanna River	Appendix C-PCB (5)	X	X
Quenshukeny Run	West Branch Susquehanna River	Appendix C-PCB (5)	X	

Likely sources of these pollutants include:

- Siltation – (Sediment, Total Suspended Solids)
 - o Streambank erosion
 - o Construction/earth moving activities
 - o Agricultural activities
 - o Urban runoff
- Nutrients – (Total Nitrogen, Total Phosphorus)
 - o Lack of adequate stream buffer
 - o Heavy use of lawn fertilizers
 - o Agricultural activities
 - o Urban runoff / discharges from septic tanks
- Organic Enrichment / Low Dissolved Oxygen
 - o Eutrophication from high nutrients (see nutrients above)
- PCB / Priority Organics
 - o Sources where PCBs were used prior to the 1979 ban (manufacturing, electrical transformers, capacitors, etc.)
 - o Priority Organics (pesticides, volatile organic compounds, synthetic organic compounds, etc.)

³ PADEP, MS4 Requirements Table (Municipal) (rev. 11/18/2019)

SECTION D: DETERMINE EXISTING LOADING FOR POLLUTANTS OF CONCERN

D.1 Planning Area

The spatial extents of the 2018 Joint PRP planning area was utilized and pollutant loads were modeled utilizing Model My Watershed. Model My Watershed is the present day iteration of the Mapshed and GWLF-E watershed modeling tools. These tools have been developed to support total maximum daily load (TMDL) and MS4-related watershed analyses and have been identified by PADEP guidance for developing PRPs as an acceptable approach for calculating baseline loads and load reductions.

Consideration was given to areas outside of the urbanized area when delineating the planning area. Namely, storm sewersheds contributing to the impaired streams were reviewed for pollutant reduction BMP opportunities. Consequently, the extents of the planning area were adjusted as necessary to include areas draining to potentially beneficial BMP locations and the baseline pollutant loading was increased to accommodate for the additional planning area.

D.2 Parsed Area Calculation

In order to calculate the actual pollutant loads applicable to the City's and Township's MS4s, the PRP instructions allow areas that do not drain to the MS4 and areas that are already covered by their own MS4 or other NPDES permit to be removed from the planning area through the parsing process⁴.

Therefore, the following areas were removed from the CBPRP and PRP planning areas:

- PennDOT roadway and land area – The estimated pollutant load from stormwater runoff generated by PennDOT roadways located within the Planning Area was parsed from the existing pollutant base load, as PennDOT maintains their own MS4 permit to account for stormwater runoff generated from their facilities.
- Non-municipal stormwater NPDES permit area – land area associated with non-municipal stormwater NPDES permit coverage that exists within the urbanized area of a municipality.
- Land area that does not enter the MS4 – as defined by PADEP, if an accurate storm sewershed map is developed, these lands may be parsed or excluded as part of that process. Potential examples include homeowner's associations and schools which do not contain municipal roads or their municipal infrastructures. Also, areas that directly discharge to surface water without entering the MS4 may be parsed.
- Combined sewer system area – it has also been determined during preliminary discussions between the City of Williamsport, Loyalsock Township, and PADEP, along with the MS4 FAQ, that all stormwater draining to Combined Sewer Outfalls (CSOs) can be parsed from the planning area because it is regulated under a different NPDES program.

⁴ PADEP - PRP Instructions, Attachment A: Parsing Guidelines for MS4s in Pollutant Reduction Plans (rev. 3/2017)

A summary of parsed area removed from the Applicant's planning area is shown in Table 2. Parsed areas are shown on the CBPRP Planning Area Map (Appendix B). Supporting information for the pollutant load calculations using Model My Watershed output associated with each parsed area included in Appendix D.

TABLE 2. PARSED AREA SUMMARY

Planning Area Categories	Planning Area (acres)
Total Planning Area	10,113
Parsed Areas - PennDOT Roadway Area	-485
Parsed Areas – NPDES Permit Holders	-127
Parsed Areas – Combined Sewer System Area	-3,674
Parsed Areas – Non-MS4 Direct Drainage	-1,201
Adjusted Planning Area	4,626

D.3 Existing Pollutant Load Calculation

The existing pollutant loadings were calculated using the Model My Watershed online tool and BMP Spreadsheet. In accordance with this method, 2011 National Land Cover Database is the default land use file used by Model My Watershed. The existing pollutant loading was determined for the Planning Area as well as for each watersheds' PRP planning areas, as this is the native output from Model My Watershed.

The pollutants of concern identified in Section C are total suspended solids (TSS), total nitrogen (TN), and total phosphorus (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 achieved. Therefore, only the TSS pollutant loading was calculated in Table 3. Detailed pollutant load calculations are provided in Appendix D.

TABLE 3. EXISTING POLLUTANT LOADING FOR THE PLANNING AREA

HUC-12 Planning Area	Planning Area (acres)	Regulated Pollutant Load TSS (lbs/yr)
Mill Creek-West Side of Loyalsock Creek	150	54,610
Little Bear Creek-Loyalsock Creek	519	252,368
Millers Run	5,914	3,854,122
Lycoming Creek-West Branch Susquehanna River	1,575	906,064
Quenshukeny Run	1,956	1,407,385
Parsed Area	- 5,487	- 3,862,332
CBPRP Total	4,626	2,612,218

D.4 Existing Pollutant Loading Adjustment for Previously Implemented BMPs

Loyalsock Township and the City of Williamsport adjusted Planning Area contains various previously installed BMPs, which continue to function as designed. The municipally-owned BMPs

are maintained by public works staff, and are inspected regularly. Privately owned BMPs located within the Planning Area are to be maintained in accordance with Operation and Maintenance agreements recorded with the land development plan or local municipal stormwater ordinances.

Land use information from aerial flight data and PADEP's standard BMP Effectiveness Values⁵ were used to estimate the pollutant load reduction associated with BMPs. Additional information on existing BMPs is provided in Appendix E. The locations of existing BMPs are shown on the CBPRP Planning Area Map in Appendix B.

Since the 2018 CBPRP was finalized, an inventory of additional installed stormwater BMPs was completed. The inventory was cross referenced with available BMP characteristics to determine the TSS removal efficiencies for existing BMPs and baseload reductions were calculated for the additional BMPs.

TABLE 4: ADJUSTED BASELINE LOAD SUMMARY

HUC-12 Planning Area	Pollutant Load TSS (lbs/yr)	Installed BMP Reduction TSS (lbs/yr)	Adjusted Pollutant Load TSS (lbs/yr)
Mill Creek-West Side of Loyalsock Creek	54,610	11,339	43,271
Little Bear Creek-Loyalsock Creek	252,368	26,730	225,639
Millers Run	3,854,122	187,640	3,666,482
Lycoming Creek-West Branch Susquehanna River	906,064	30,944	875,120
Quenshukeny Run	1,407,385	55,659	1,351,726
Parsed Area	- 3,862,332	0	- 3,862,332
CBPRP Total	2,612,218	312,312	2,299,906

SECTION E: BMPS TO ACHIEVE THE REQUIRED POLLUTANT LOADING REDUCTIONS

E.1 Required Pollutant Reduction Calculation

The Applicants discharge stormwater to surface waters located within the Chesapeake Bay Watershed and must address PA DEP Appendix D requirements (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 previously described, 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 achieved⁶. 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

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

⁶ PADEP – PRP Instruction, Document #3800-PM-BCW0100k (rev. 3/2017)

requirements listed below consider adjustments to baseline loading from the parsed areas and existing BMPs discussed in Section D.

The total CBPRP planning area required sediment load reduction is 229,991 lbs/yr. The municipalities have agreed to share responsibility for reducing the sediment loading as follows: The City of Williamsport will have a reduction requirement of 80,497 lbs/yr or 35% of the total required loading and the remaining 149,494 lbs/yr or 65% of the required reduction will be the responsibility of Loyalsock Township. The memorandum of understanding documenting the agreement and roles and responsibilities of the municipalities is included in Appendix G.

TABLE 5: REQUIRED POLLUTANT LOAD REDUCTION GOAL

Planning Area	Non-Parsed Planning Area Baseline Pollutant Load TSS (lbs/yr)	Parsed Area Pollutant Load TSS (lbs/yr)	Existing BMP Load Reduction TSS (lbs/yr)	Adjusted Baseline TSS (lbs/yr)	Required 10% Load Reduction TSS (lbs/yr)
CBPRP Total	6,479,549	-3,862,332	-312,312	2,299,906	229,991

E.2 Proposed BMPs

This 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 municipal staff, in-field site assessments, and public outreach meetings.

A summary of the type and scale of BMP projects included in the pollutant reduction strategy is listed in Table 6. The pollutant loading reductions for each proposed BMP were calculated in terms of pounds per year using a combination of the Expert Panel Report⁷ and PADEP's standard BMP Effectiveness Values⁸. Calculations for the anticipated pollutant load reductions for each BMP in Table 6 is provided in Appendix F.

TABLE 6: CITY OF WILLIAMSPORT AND LOYALSOCK TOWNSHIP JOINT PRP PROPOSED BMP SUMMARY – PRIMARY LOCATIONS

Project Site	BMP ID	BMP Type	Drainage Area (acres) or Length as noted	Load Reduction TSS (lbs/yr)
Robbins Road	BMP-204	Infiltration Berm	3.63	4,821
Sand Hill Road	BMP-205	Infiltration Basin	29.31	12,203
Mountain Crescent	BMP-246	Subsurface Infiltration	5.93	5,577
Becht School Redevelopment	BMP-201	Subsurface Infiltration Basin	2.56	3,225

⁷ Chesapeake Stormwater Network Recommendations of the Expert Panel to Define Removal Rates for Urban Stormwater Retrofit Projects (10/9/2012)

⁸ PADEP Document 38-99-PM-BCW0100M, NPDES Stormwater Discharges from Small MS4s, BMP Effectiveness Values (5/2015)

Project Site	BMP ID	BMP Type	Drainage Area (acres) or Length as noted	Load Reduction TSS (lbs/yr)
Front of Ruby Tuesday's/Harley Davidson	BMP-215	Basin Retrofit	4.41	3,313
Reed Street	BMP-241	Stormwater Treatment Wetland	71.64	22,527
Pennvale-Randall Circle	BMP-240	Permeable Pavement	3.46	1,509
Pennvale-Randall Circle	BMP-240	Infiltration System (Surface or Sub-Surface)	31.12	13,580
Loyalsock Community Center Parking	BMP-224	Infiltration Basin	3.89	2,124
Loyalsock Community Center Greenway Trail	BMP-224	Infiltration Basin	3.89	2,124
Valley Heights - Loyalsock Community Center	BMP-224	Regenerative Stormwater Conveyance	36.96	12,744
Millers Run at Short Park	BMP-237	Stream Restoration	425 feet	48,875
Cameo - Short Park	BMPs-250, 251	Subsurface Infiltration	7.93	3,076
Saint Ann's	BMP-209	Infiltration Basin	2.64	2,304
Hidden Valley	BMP-239	Basin Retrofit	24.81	27,909
Cameo Estates to Northway	BMP-238	Regenerative Stormwater Conveyance	54.39	25,617
Faxon Bowling Lanes	BMP-223	Subsurface Infiltration	1.81	2,036
Windfield Drive Roadside	BMPs-202, 203, 220, 221	Subsurface Infiltration (4)	44.98	18,978
Northwood Drive Roadside	BMPs-216, 219, 230	Infiltration Berms (3)	23.14	9,539
Ravine Road	BMP-234	Infiltration Berms/Swales	20.00	7,867
Reach Road	BMP-232	Infiltration Berms/Swales	3.00	4,720
Loyalsock Township Street Sweeping	BMP-L1	Street Sweeping	245.00	27,767
Loyalsock Township Inlet/Pipe Cleanng	BMP-L2	Inlet/Pipe Cleaning	49.00	1,666
Williamsport Street Sweeping	BMP-W1	Street Sweeping	28.10	4,968

Project Site	BMP ID	BMP Type	Drainage Area (acres) or Length as noted	Load Reduction TSS (lbs/yr)
Williamsport Inlet/Pipe Cleanng	BMP-W2	Inlet/Pipe Cleaning	28.10	1,490
Total				270,559

E.3 Secondary Projects and Meeting the MS4 Goal

The inherent complexity of implementing numerous, large-scale projects in a five-year timeframe with limited annual cash flow and limited land control, necessitates a significant number of alternate projects be identified and included in this plan in order to provide flexibility during implementation. As projects are completed and reported on in MS4 Annual Reports, plan implementation progress will be quantified. The plan goal will be accomplished once the implemented projects meet the joint planning area load reduction goal. For those planned projects that are not completed during the individual permit term because the goal has been met, the MS4s reserve the possibility of implementing the projects in the future should there be a new regulatory water quality improvement goal.

Should any projects proposed be deemed to be unachievable during the five-year plan implementation, additional projects have been identified as secondary sites. The Applicants recognize their ability to review and revise the sediment reduction strategy put forth in this Joint Plan and may elect to do so in at some point in the future in accordance with PADEP regulations. Projects on the primary BMP project lists may shift to the secondary project list (identified in Tables 7 and 8) based upon actual feasibility upon initiation of the project and, conversely, alternate projects may shift to the primary project list. Calculations for the anticipated pollutant load reductions for each BMP in Table 7 is provided is provided in Appendix F.

TABLE 7: CITY OF WILLIAMSPORT AND LOYALSOCK TOWNSHIP JOINT PRP PROPOSED BMP SUMMARY – SECONDARY LOCATIONS

Project Site	BMP ID	BMP Type	Drainage Area (acres) or Length as noted	Load Reduction TSS (lbs/yr)
Warrensville Road Wetland	BMP-244	Wetland / Riparian Buffer	9.37	8,824
Mill Creek Bend	BMP-245	Regenerative Stormwater Conveyance	3.43	3,219
Sycamore Road / Haas Lane	BMP-243	Stream Restoration or Regenerative Stormwater Conveyance	5.70	3,368
Hoss's Parking Lot	BMP-207	Subsurface Infiltration	2.00	2,250
Giant Parking Lot	BMP-208	Subsurface Infiltration	8.44	9,495
Bull Run - Reed to Edercrest	BMP-243	Stream Restoration	400 feet	46,000

Project Site	BMP ID	BMP Type	Drainage Area (acres) or Length as noted	Load Reduction TSS (lbs/yr)
Country Club at Lincoln Drive	BMP-242	Wetland, Pond, or Regenerative Stormwater Conveyance	11.00	3,352
Wilmont Drive	BMP-211	Basin Retrofit	2.98	3,353
Faxon Circle	BMP-228	Subsurface Infiltration	3.24	2,533
Divine Providence Campus	BMP-222	Subsurface Infiltration	2.29	2,577
Grafius Run	BMPs-235, 236	Infiltration/Detention Basins	40.00	17,833
Cemetery Road	BMP-200	Detention Basins (2)	60.32	17,261
Lycoming Valley Middle School	BMP-231	Infiltration Basin / Regenerative Stormwater Conveyance	10.00	2,635
Fox Hollow Run	BMP-233	Regenerative Stormwater Conveyance	84.00	16,559
Downspout Disconnection Enforcement in Loyalsock	BMP-L3	Disconnection	100.00	29,730
Downspout Disconnection Enforcement in Williamsport	BMP-W3	Disconnection	25.00	9,352
Total				178,340

SECTION F: FUNDING MECHANISMS

Financing of the design and construction of the BMPs proposed herein will be funded through a variety of sources including the Township's and City's general funds, available grants, and public donation of materials and manpower.

The City of Williamsport has been in discussions to transfer the ownership and operation of all stormwater infrastructure to the Williamsport Sanitary Authority. Further, the Williamsport Sanitary Authority has investigated a stormwater utility fee to assist with funding the maintenance of the stormwater system infrastructure. At this time there is no further detail on this funding mechanism, but it is anticipated a stormwater utility fee may be a tool to assist with the funding of municipal stormwater infrastructure operations, maintenance, and capital program in the future.

SECTION G: BMP OPERATIONS AND MAINTENANCE

The Applicants are mutually responsible for meeting their joint sediment reduction requirements as stated in the memorandum of understanding between the City and Township. Once implemented, the BMPs outlined in this plan will be operated and maintained by the City of Williamsport and Loyalsock Township staff and inspected regularly by the Applicants MS4 Program

Coordinators to ensure that they continue to provide the expected pollutant reductions. Table 8 provides a summary of BMP type, priority, and responsible party for maintenance based on project location. The Operation and Maintenance (O&M) activities will be reported in the Annual MS4 Status Reports submitted in accordance with the joint Individual Permit. Projects located within private property will require an easement, if not already existing.

The O&M activities and schedule for each BMP will be developed during the design phase. A general summary of the O&M activities involved with each BMP type and the frequency at which O&M activities will occur are as follows:

Bioretention, Infiltration Basins, and Retrofits (Bioswales and Basin Retrofits)

Operation and maintenance requirements for the bioretention, infiltration basin, and basin retrofit 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/infiltration/basin retrofit practices until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants' Engineer(s). The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

Once construction of the project(s) is complete, the Applicant(s) 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.

Stream Restoration/Stabilization

Operation and maintenance requirements for a stream restoration project includes:

- Ensure disturbed areas are kept free of foot and/or vehicular traffic until full stabilization has occurred. Properly designed and installed stream features require some monitoring and regular maintenance.
- Stream Restoration areas should be inspected at least four times per year for sediment buildup, erosion, vegetative conditions, etc.
- Trees and shrubs should be inspected twice per year to evaluate health.

The contractor shall be responsible for the operation and maintenance of the stream restoration area until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants' Engineer(s). The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Riparian Buffer

Operation and maintenance requirements for a riparian buffer project includes:

- Ensure disturbed areas are kept free of foot and/or vehicular traffic until full stabilization has occurred. Properly planted riparian areas require some monitoring and regular maintenance.
- Trees and shrubs should be inspected twice per year to evaluate health.

If applicable, the contractor shall be responsible for the operation and maintenance of the stream restoration area until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants' Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Regenerative Stormwater Conveyance

Operation and maintenance requirements for the regenerative stormwater conveyance projects includes:

- Ensure disturbed areas are kept free of foot and/or vehicular traffic until full stabilization has occurred. Properly designed and installed regenerative stormwater conveyance system features require monitoring and regular maintenance.
- For the first 6 months following construction, the practice and drainage area should be inspected at least twice after storm events.
- Following establishment period, stream Restoration areas should be inspected at least four times per year for sediment buildup, erosion, vegetative conditions, etc.
- Trees and shrubs should be inspected twice per year to evaluate health.

The contractor shall be responsible for the operation and maintenance of the regenerative stormwater conveyance system area until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants'

Engineer(s). The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Wetlands and Wet Ponds

Operation and maintenance requirements for a wetland or wet pond project includes:

- Wetlands/wet ponds should have a maintenance plan and privately-owned facilities should have an easement, deed restriction, or other legal measure to prevent neglect or removal.
- During the first growing season or until established, vegetation should be inspected every two to three weeks.
- Wetlands/wet ponds should be inspected at least four times per year and after major storms (greater than two inches in 24 hours) or rapid ice breakup. Inspections should access the vegetation, erosion, flow channelization, bank stability, inlet outlet conditions, embankment, and sediment/debris accumulation.
- If applicable, the pond drain should also be inspected and tested four times per year. Problems should be corrected as soon as possible.
- Wetlands/wet ponds and buffer vegetation may need support (watering, weeding, mulching, replanting, etc.) during the first three years.
- Undesirable species should be carefully removed and desirable replacements planted if necessary.
- Vegetation should be maintained at least an 85 percent cover of the emergent vegetation zone and buffer area.
- Annual harvesting of vegetation may increase the nutrient removal of wetlands; if performed it should generally be done in the summer so that there is adequate regrowth before winter.
- Care should be taken to minimize disturbance, especially of bottom sediments, during harvesting. The potential disturbance from harvesting may outweigh its benefits unless the area receives a particularly high nutrient load or discharges to a nutrient sensitive waterbody.
- Sediment should be removed from forebay before it occupies 50 percent of the volume, typically every five to 10 years.

If applicable, the contractor shall be responsible for the operation and maintenance of the wetland/wet pond until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants' Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Dry Extended Detention Basin

Operation and maintenance requirements for the dry extended detention basin project includes:

- All basin structures expected to receive and/or trap debris and sediment should be inspected for clogging excessive debris and sediment accumulation at least four times per year, as well as after every storm greater than 1 inch.
- Structures include basin bottoms, trash racks, outlets structures, riprap or gabion structures and inlets.
- Sediment removal should be conducted when the basin is completely dry. Sediment should be disposed of properly and once sediment is removed, disturbed areas need to be immediately stabilized and revegetated.
- Mowing and/or trimming of vegetation should be performed as necessary to sustain the system but all detritus should be removed from the basin.
- Vegetated areas should be inspected annually for erosion.
- Vegetated areas should be inspected annually for unwanted growth of exotic/invasive species.
- Vegetative cover should be maintained at a minimum of 95 percent. If vegetative cover has been reduced by 10 percent, vegetation should be reestablished.

If applicable, the contractor shall be responsible for the operation and maintenance of the dry extended retention basin until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants' Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Roadside Infiltration Trenches/Berms

Operation and maintenance requirements for the roadside infiltration trench project includes:

- Catch Basins and Inlets should be inspected and cleaned at least two times per year.
- The vegetation along the surface of the infiltration trench should be maintained in good condition and any bare spots revegetated as soon as possible.
- Vehicles should not be parked or driven on a vegetated infiltration trench, and care should be taken to avoid excessive compaction by mowers.

If applicable, the contractor shall be responsible for the operation and maintenance of the roadside infiltration trench until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicants' Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Subsurface Infiltration Basin

Operation and maintenance requirements for the subsurface infiltration basin project includes:

- Catch Basins and Inlets should be inspected and cleaned at least two times per year.
- The vegetation along the surface of the infiltration basin should be maintained in good condition and any bare spots revegetated as soon as possible.
- Vehicles should not be parked or driven on a vegetated Subsurface Infiltration Basin, and care should be taken to avoid excessive compaction by mowers. If access is needed, use of permeable, turf reinforcement should be considered.

If applicable, the contractor shall be responsible for the operation and maintenance of the subsurface infiltration basin until all features of the project have been successfully constructed to the specifications and design standards set forth by the Applicant(s) Engineer. The Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.

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

Street Sweeping

The Applicants have implemented street sweeping programs to help reduce the amount of road debris entering the storm water basins that can lead to sediment and foreign debris being discharged to rivers and streams.

The following is a protocol that the Applicants could utilize to sweep streets and record the pertinent information for street sweeping in order to report to the Department of Environmental Protection:

- Streets will be swept up to 26-times a year in the planning area. The operator records the mileage and street name of the streets swept on a Street Sweeping Tracking and Reporting Form.

- Mileage is recorded by entering the starting mileage of the sweeper and the ending mileage of the sweeper to give the most accurate total mileage that was swept on any given street.
- The debris extracted from the streets would be transported to a public works facility.
- The debris would be deposited on a protected location and the water is allowed to drain out of the debris.
- The amount of debris is recorded by the operator using visual markers and logged onto his reporting form in cubic yards.
- Street sweepings are reclaimed or disposed of at a permitted facility.

Inlet/Catch Basin/Pipe Cleaning

The Applicants will seek to implement an inlet/catch basin and pipe cleaning program. Presently the Applicants clean inlets/catch basins and stormwater pipes as needed. As part of the CBPRP, the applicants will seek to clean these stormwater structures on a rotating basis and address areas of high debris loads more frequently. The following is a protocol that the Applicants can use to clean storm water inlets/catch basins/pipes and record the pertinent information for structure cleaning in order to report to the Department of Environmental Protection:

- The operator records the pertinent information, including the actual amount of debris in pounds that is being removed from each basin, on a Storm Water Catch Basin and Inlet Inspection Form.
- The debris would be extracted from the basins by vactor truck and transported to a public works facility.
- The debris is measured by the operator and logged onto a reporting form in net pounds by determining the debris weight using an appropriate method similar to that provided in Expert Panel Report⁹.

TABLE 8: CITY OF WILLIAMSPORT AND LOYALSOCK TOWNSHIP BMP RESPONSIBILITY

Project Site	BMP ID	BMP Type	Priority	Responsible Party
Robbins Road	BMP-204	Infiltration Basin	Primary	Loyalsock
Sand Hill Road	BMP-205	Infiltration Berm	Primary	Loyalsock
Mountain Crescent	BMP-246	Subsurface Infiltration	Primary	Loyalsock
Becht School Redevelopment	BMP-201	Subsurface Infiltration Basin	Primary	Loyalsock
Front of Ruby Tuesday's/Harley Davidson	BMP-215	Basin Retrofit	Primary	Loyalsock
Reed Street	BMP-241	Stormwater Treatment Wetland	Primary	Loyalsock
Pennvale-Randall Circle	BMP-240	Permeable Pavement	Primary	Loyalsock
Pennvale-Randall Circle	BMP-240	Infiltration System (Surface or Sub-Surface)	Primary	Loyalsock
Loyalsock Community Center Parking	BMP-224	Infiltration Basin	Primary	Loyalsock
Loyalsock Community Center Greenway Trail	BMP-224	Infiltration Basin	Primary	Loyalsock

⁹ Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices, Chesapeake Bay Program (May 2016)

Project Site	BMP ID	BMP Type	Priority	Responsible Party
Millers Run at Short Park	BMP-237	Stream Restoration	Primary	Loyalsock
Valley Heights - Loyalsock Community Center	BMP-224	Regenerative Stormwater Conveyance	Primary	Loyalsock
Cameo - Short Park	BMPs-250, 251	Subsurface Infiltration	Primary	Loyalsock
Saint Ann's	BMP-209	Infiltration Basin	Primary	Loyalsock
Hidden Valley	BMP-239	Basin Retrofit	Primary	Loyalsock
Cameo Estates to Northway	BMP-238	Regenerative Stormwater Conveyance	Primary	Loyalsock
Faxon Bowling Lanes	BMP-223	Subsurface Infiltration	Primary	Loyalsock
Windfield Drive Roadside	BMPs-202, 203, 220, 221	Subsurface Infiltration (4)	Primary	Loyalsock
Cemetery Road	BMP-200	Detention Basins (2)	Primary	Loyalsock
Northwood Drive Roadside	BMPs-216, 219, 230	Infiltration Berms (3)	Primary	Loyalsock
Ravine Road	BMP-234	Infiltration Berms/Swales	Primary	Williamsport
Reach Road	BMP-232	Infiltration Berms/Swales	Primary	Williamsport
Loyalsock Township Street Sweeping	BMP-L1	Street Sweeping	Primary	Loyalsock
Loyalsock Township Inlet/Pipe Cleaning	BMP-L2	Inlet/Pipe Cleaning	Primary	Loyalsock
Williamsport Street Sweeping	BMP-W1	Street Sweeping	Primary	Williamsport
Williamsport Inlet/Pipe Cleaning	BMP-W2	Inlet/Pipe Cleaning	Primary	Williamsport
Cemetery Road	BMP-200	Detention Basins (2)	Secondary	Loyalsock
Warrensville Road Wetland	BMP-244	Wetland / Riparian Buffer	Secondary	Loyalsock
Mill Creek Bend	BMP-245	Regenerative Stormwater Conveyance	Secondary	Loyalsock
Sycamore Road / Haas Lane	BMP-243	Stream Restoration or Regenerative Stormwater Conveyance	Secondary	Loyalsock
Hoss's Parking Lot	BMP-207	Subsurface Infiltration	Secondary	Loyalsock
Giant Parking Lot	BMP-208	Subsurface Infiltration	Secondary	Loyalsock
Bull Run - Reed to Edercrest	BMP-241	Stream Restoration	Secondary	Loyalsock
Country Club at Lincoln Drive	BMP-242	Wetland, Pond, or Regenerative Stormwater Conveyance	Secondary	Loyalsock
Wilmont Drive	BMP-211	Basin Retrofit	Secondary	Loyalsock
Faxon Circle	BMP-228	Subsurface Infiltration	Secondary	Loyalsock
Divine Providence Campus	BMP-222	Subsurface Infiltration	Secondary	Loyalsock
Grafius Run	BMPs-235, 236	Infiltration/Detention Basins	Secondary	Williamsport
Lycoming Valley Middle School	BMP-231	Infiltration Basin / Regenerative Stormwater Conveyance	Secondary	Loyalsock
Fox Hollow Run	BMP-233	Regenerative Stormwater Conveyance	Secondary	Williamsport
Downspout Disconnection Enforcement in Loyalsock	BMP-L3	Disconnection	Secondary	Loyalsock
Downspout Disconnection Enforcement in Williamsport	BMP-W3	Disconnection	Secondary	Williamsport

APPENDIX A: Public Participation Documentation

APPENDIX 1 PUBLIC PARTICIPATION PUBLIC NOTICE, WRITTEN COMMENTS & RECORD OF CONSIDERATION

NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC MEETING FOR CHESAPEAKE BAY POLLUTANT REDUCTION PLAN

The City of Williamsport and Loyalsock Township are hereby giving notice of the 30-day public comment period for their joint National Pollutant Discharge Elimination System from Municipal Separate Storm Sewer Systems (MS4) Pollutant Reduction Plan (PRP). The PRP proposes best management practices to satisfy the PRP requirements for impaired waterways in both municipalities.

The plans are available for public examination during regular business hours at the following locations:

Loyalsock Township Office
2501 East Third Street
Williamsport, PA 17701

City Clerk Office
Williamsport City Hall
2nd Floor, 245 West Fourth Street
Williamsport, PA 17701

The public is invited to review these documents and provide written comments to the individual listed below:

Joint Pollutant Reduction Plan
Chelsea Myers, Williamsport City Planner
245 West Fourth Street
Williamsport, PA 17701

The minimum 30-day public comment period will begin July 6, 2018 and end August 6, 2018. The City of Williamsport will hold a Pollution Reduction Plan public meeting at Williamsport City Hall, City Council Chambers, on Thursday July 19, 2018 at 6:00 PM. Loyalsock Township will hold a Pollution Reduction Plan public meeting at the Loyalsock Township Office Building on Tuesday, July 24, 2018 at 7:30 PM.

NO COMMENTS RECEIVED AT ANY OF THE PUBLIC MEETINGS.

B8

Williamsport Sun-Gazette, Wednesday, July 29, 2020

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

Loyalsock Township and the City of Williamsport hereby give 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 30-day public comment period begins August 3, 2020, and ends September 2, 2020. During that time, the plan will be available on the Loyalsock Township and City of Williamsport websites (<http://www.loyalsocktownshipbas.com>)

and <https://www.cityofwilliamsport.org/>) and a hard copy will be available at each municipal office. The public is invited to review this document and provide written comments. The Joint Plan will be discussed at a public meeting on August 25, 2020, starting at 7PM, at the Loyalsock Township Municipal Building, 2501 E. Third Street, Williamsport, PA 17701.

★★ The LUMINARY ★★

AUTOS HOMES JOBS BUY & SELL SERVICES

Restaurant/Bar is looking for a Front of The House Manager Haywood's Bar & Grill 113 W. Water St. Muncy is currently accep

ing applications. Applicants must be outgoing customer satisfaction driving, must be able to work in a fast paced environment, and have RAMPC certification. Applicants will also be responsible for scheduling, bartending, and social media coordinator. Call for appointment - ask for Kim.

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Timber Management and Forestry Services. Select Cut Timber Harvesting. White Oak Sawmill Culp Rd. Sunbury Pa. Buying Standing Timber. 717-715-7596

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Accepted When You Place
Your Ad
Or You Can Pay Your Invoice
By Calling 326-1551

forklift operation,
 ct flow. Must be
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INCLUDING:
Start immediately

consideration
ITY.COM and
openings.

YOUR SUCCESS IS OUR ENDGAME™

Every product we make is a direct result of thoughtful research, centered around improving consumers lives. We work to create top-rated products for our customers at the best value possible. We are looking for career minded individuals to join our family and contribute to our continued growth and success at our McElhattan location.

LOOK NO FURTHER. APPLY TODAY...

TECHNICIAN/OPERATOR

Responsible for operating machinery, performing quality checks on finished products, keeping the work area clean and orderly, packaging product

WAREHOUSE

WAREHOUSE
Responsible for movement of finished goods and raw materials, forklift operation,

calculating accurate tallies, and maintaining an efficient product flow. Must be able to work 12-hour schedule; 5:00pm-5:00am or 7:00pm-7:00am.

MAINTENANCE TECHNICIAN

Responsible for maintaining, troubleshooting, repairing, and adjusting all

responsible for maintaining, troubleshooting, repairing, and adjusting all mechanical equipment, machinery, and components. Must be able to work 12-hour schedule 7:00pm-7:00am.

Additional \$1.25 shift differential.

High school diploma or equivalent required.
E/O/E

FIRST QUALITY OFFERS EXCELLENT BENEFITS INCLUDING:
Medical, prescription, vision and dental insurance that start immediately

Competitive skilled based hourly wage
Paid vacation after 6 months
Performance Incentives

- Performance Incentives
- Tuition reimbursement
- 401K plus employer match

Company Provided Life Insurance
Supplemental Insurance Options

Positions are available immediately. For consideration please apply online at: WWW.FIRSTQUALITY.COM and

follow the links to the McElhattan openings.

**LOYALSOCK TOWNSHIP
BOARD OF SUPERVISORS**

AUGUST 25, 2020

**PUBLIC HEARING - WILLIAMSPORT/LOYALSOCK JOINT
CHESAPEAKE BAY POLLUTION REDUCTION PLAN AMENDMENT**

The Public Hearing for the Williamsport/Loyalsock Joint Chesapeake Bay Pollution Reduction Plan Amendment was held on August 25, 2020, at 7:01PM, at the Loyalsock Township Building, 2501 E. Third Street. Supervisors in attendance were Bower, Eaton, Nyman, Sortman, and Wheeland. Also, in attendance were J. Michael Wiley, Solicitor; Bill Burdett, Township Manager; and Sarah Hughes, Township Secretary.

Burdett introduced the Township's partners from the Williamsport Sanitary Authority: Mike Miller, Executive Director; Wendy Walter, Director of Compliance, Safety, and Security; and Marcia LeBeau, Environmental Supervisor. Burdett explained the Township is also partnered with the City of Williamsport for this plan, however no one from the City is present.

Burdett stated MS4 stands for Municipal Separate Storm Sewer System. In Loyalsock Township all of our storm sewers are separate meaning they are not connected to the sanitary sewer system. In the City of Williamsport, a lot of there storm drains are connected to the sanitary sewer. Burdett showed the Board the area of the City that has a combined sewer system. Burdett explained having the storm water treated is a good thing with this program. We are not required to put in Best Management Practices (BMP's) in the combined sewer area, so a big chunk of the city is exempt from the MS4 program.

Burdett explained that tonight's hearing is for an amendment to the Chesapeake Bay Pollution Reduction Plan (CBPRP). Burdett stated that back in 2018 Larson Design Group had put together the original CBPRP and a public hearing was held back then to go over the different BMP's that would be done with that plan. The original CBPRP plan was sent to PADEP for review and a year after PADEP received the plan they informed the Township and City that they have concerns with the plan and it needed to be revised. The City and Township then hired HRG Engineering to revise the plan. This revision is what is in front of the Board tonight.

Burdett explained both the MS4 plan and program are mandated by the PADEP and the Federal Clean Streams Law. The Chesapeake Bay is considered an impaired waterway and the EPA was not enforcing the law to clean up the Bay, so the Chesapeake Bay Commission sued the Federal Government to force their hand in making them enforce the law. The EPA then turned to the six/seven states that have waterways that drain into the Bay and all of these states are now required to help clean up the Bay. In Pennsylvania the PADEP was tasked with how to clean up the waterways that drain into the Bay so they turned to the municipalities within that watershed. PADEP identified all of the municipalities they consider urbanized areas and that is how the program began.

**LOYALSOCK TOWNSHIP
BOARD OF SUPERVISORS**

AUGUST 25, 2020

**PUBLIC HEARING - WILLIAMSPORT/LOYALSOCK JOINT
CHESAPEAKE BAY POLLUTION REDUCTION PLAN AMENDMENT**

Burdett stated the Township has a joint permit with the City of Williamsport and the permit is good for five years. In that five-year period, we need to reduce sediment by 10%, nitrogen by 5%, and phosphorous by 3%. Burdett explained that no one is measuring these reductions, instead the reductions are calculated by a formula. For example, if the Township does so many feet of stream bank stabilization, then that project will reduce these pollutants by a calculated percent. Each BMP that we complete will contribute to the overall pollutant reduction.

Burdett explained annual reporting is required to monitor the progress and minimum control measures which are determined by PADEP. The Williamsport Sanitary Authority helps with this requirement. Burdett stated they hold meetings quarterly to go over projects that are being done.

Burdett explained the joint permit with the City allows both the City and the Township to implement projects in either municipality. Burdett stated most of the projects will occur in the Township but no matter where the project is done it will count for both the City and Township.

Burdett explained the original plan put together by Larson Design Group was deemed by PADEP to have some deficiencies. Most of the original plan called for stabilization of the entire length of Millers Run in the urbanized area. Larson Design Group did not realize at the time that PADEP has a lot of requirements on how a project like that can be done and much of that criteria could not be met. This project then had to be removed from the plan and once that was done we were required to come up with a whole new list of BMP's and amend the original plan. This is not a completely new plan as we are still working off of the original CBPRP. Now we will also have an amendment to the plan done by HRG Engineering. Both of these plans will be submitted to PADEP for review. The amendment shows smaller BMP's being done throughout the urbanized area. Projects in the draft include the following:

- restoring the stream back along Millers Run and Bull Run;
- cleaning sediment out of the pipes in the Township;
- constructing sediment traps and then cleaning out those traps;
- sweeping streets;
- installing infiltration basins and berms;
- retrofitting a few existing storm basins; and
- creating a treatment wetland on Township property off Reed Street.

Burdett explained the breakdown of the cost sharing between the City and the Township is a 65/35 split with 65% coming from the Township and the remaining 35% coming from the City. The cost sharing is broken down this way due to the big portion of the city not counting toward the plan as they are on a combined sewer system. Burdett handed out the cost estimate for each project to the Board. The total estimate for all of the projects is

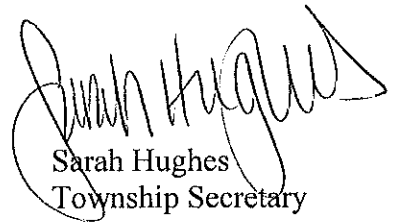
**LOYALSOCK TOWNSHIP
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\$4.514 million plus engineering costs. Burdett explained this is an expensive program for the City and the Township. The Township will aggressively work with partners to get grant money. Some of the projects can be done by the Township's street crew to save money as well. Burdett explained that over the last few years the Township has been putting money aside to do some of these projects.

The Public Hearing was closed at 7:36PM.



Sarah Hughes
Township Secretary

Record of Consideration

Comment #1

Received from: Mike Philbin

Date: 8/4/2020

Comment: Could you tell me a couple things about the pollutant reduction plan.

1. What is the amount of sediment Loyalsock Twp. is required to reclaim?
2. What is the budget to do this?
3. What will the cost be per household?

Thanks for your help with this

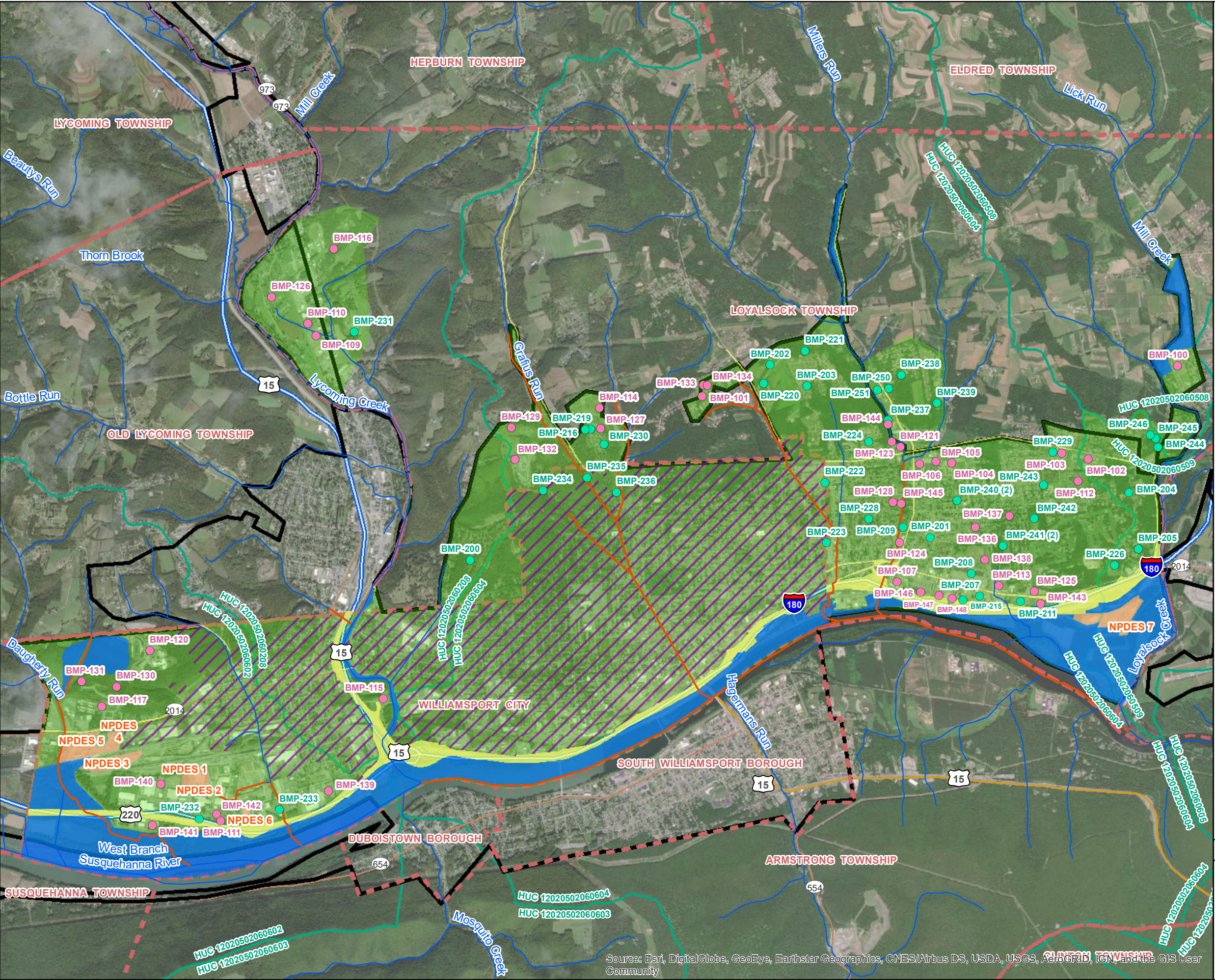
Mike

Mike Philbin
Keystone Bingo Supply
P.O. Box 350
1625 John Brady Dr
Muncy Pa 17756

570-546-3099

Response to comment: Comment acknowledged. Thank you for supporting the efforts of Loyalsock Township and the City of Williamsport in improving water quality in local waterways. The amount of sediment reduction required is provided in Section E of the CBPRP. The Applicants involved in the development of the Joint Plan previously entered into a memorandum of understanding in part to ensure cost sharing is fair and consistent between the municipalities for implementation of the Plan. The memorandum of understanding regarding the implementation of the plan has been included as Appendix G of the Joint Plan. Exact details of the proposed BMPs and their costs are still in development.

APPENDIX B: Mapping



Williamsport & Loyalsock Joint Chesapeake Bay Pollutant Reduction Plan

City of Williamsport &
Loyalsock Township
Lycoming County, Pennsylvania

- Proposed BMP
- Existing BMP
- Impaired Rivers & Streams
- Rivers & Streams
- Urbanized Area
- Parsed Area- Combined Sewers
- Parsed Area- Drainage directly to Waterway
- Parsed Area- State Roads
- Planning Area
- HUC 12 Watersheds
- Municipal Boundary



0 0.5 1 Miles

Mapping derived from data provided by USGS, ESRI, Lycoming County, US Census Bureau, and PennDOT. Parsed areas layer and NPDES permits from Larson Design Group in 2018 PRP.

9/17/2020	PM: MJV	GIS: ALV	QA: EGL	R003405.0431
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HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
An Employee-Owned Company

776 Bull Run Crossing
Suite 200
Lewisburg, PA 17837
570.524.6744 [phone]
570.524.6779 [fax]
www.hrg-inc.com

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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
Lycoming County						
LOYALSOCK TWP	PAI134808	Yes	SP, IP	West Branch Susquehanna River	Appendix C-PCB (5)	
				Unnamed Tributaries to West Branch Susquehanna River		Cause Unknown (5), Water/Flow Variability (4c)
				Millers Run		Other Habitat Alterations, Water/Flow Variability (4c)
				Grafius Run		Cause Unknown (5), Water/Flow Variability (4c)
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
WILLIAMSPORT CITY	PAI134808	Yes	SP, IP	Unnamed Tributaries to Lycoming Creek	Appendix E-Organic Enrichment/Low D.O. (5)	Water/Flow Variability (4c)
				Unnamed Tributaries to West Branch Susquehanna River		Cause Unknown (5), Flow Alterations, Water/Flow Variability (4c)
				West Branch Susquehanna River	Appendix C-PCB (5)	
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Grafius Run		Cause Unknown (5), Water/Flow Variability (4c)
				Daugherty Run		Flow Alterations (4c)

PADEP, MS4 Requirements Table (Municipal) (rev. 11/18/2019)

APPENDIX D: Existing Baseline Pollutant Load Calculations

TABLE D-1 MODEL MY WATERSHED LAND USE SUMMARY

	Millers Run	Lycoming Creek- West Branch Susquehanna River	Quenshukeny Run	Mill Creek-West Side of Loyalsock Creek	Little Bear Creek- Loyalsock Creek	CBPRP Planning Area
TYPE	Area (acres)	Area (acres)	Area (acres)	Area (acres)	Area (acres)	Area (acres)
Open Water	175	5	44	0	0	225
Perennial Ice/Snow	0	0	0	0	0	0
Developed, Open Space	1,585	336	346	14	136	2,416
Developed, Low Intensity	1,659	402	373	9	74	2,517
Developed, Medium Intensity	864	249	378	0	22	1,514
Developed, High Intensity	437	64	188	0	5	694
Barren Land (Rock/Sand/Clay)	2	0	0	0	2	5
Deciduous Forest	388	188	190	18	96	879
Evergreen Forest	40	22	47	4	2	115
Mixed Forest	279	91	131	6	47	554
Shrub/Scrub	15	0	5	0	2	22
Grassland/Herbaceous	2	5	0	0	0	7
Pasture/Hay	341	175	175	93	44	829
Cultivated Crops	69	12	10	5	69	166
Woody Wetlands	32	10	22	0	5	69
Emergent Herbaceous Wetlands	25	15	47	1	12	100
Total	5,914	1,575	1,956	150	519	10,113

TABLE D-2 MODEL MY WATERSHED POLLUTANT LOADING SUMMARY

TYPE	Millers Run Sediment (lb/yr)	Lycoming Creek- West Branch Susquehanna River Sediment (lb/yr)	Quenshukeny Run Sediment (lb/yr)	Mill Creek-West Side of Loyalsock Creek Sediment (lb/yr)	Little Bear Creek- Loyalsock Creek Sediment (lb/yr)	CBPRP Planning Area Sediment (lb/yr)
Open Water	0	0	0	0	0	0
Perennial Ice/Snow	0	0	0	0	0	0
Developed, Open Space	832,414	152,466	170,604	7,025	71,561	1,234,071
Developed, Low Intensity	871,312	182,735	184,009	4,349	39,033	1,281,439
Developed, Medium Intensity	911,857	307,005	495,638	767	36,105	1,751,372
Developed, High Intensity	656,406	122,407	380,567	0	12,873	1,172,252
Barren Land (Rock/Sand/Clay)	815	0	0	0	271	1,085
Deciduous Forest	128,736	30,881	35,548	987	10,307	206,458
Evergreen Forest	13,120	3,657	8,772	197	264	26,010
Mixed Forest	92,657	15,034	24,468	308	5,021	137,489
Shrub/Scrub	4,920	0	923	0	264	6,107
Grassland/Herbaceous	927	1,306	0	0	0	2,233
Pasture/Hay	222,405	75,508	82,027	35,547	16,626	432,112
Cultivated Crops	99,867	11,085	12,050	5,345	58,258	186,605
Woody Wetlands	10,562	1,592	4,108	12	510	16,783
Emergent Herbaceous Wetlands	8,124	2,388	8,672	72	1,276	20,531
Total	3,854,122	906,064	1,407,385	54,610	252,368	6,474,549

NPDES PERMIT HOLDERS

NPDES Site	NPDES Permit #	Permit Name	Municipality	Local Watershed
NPDES 7	PAR704816	Hawbaker Inc.	Loyalsock	Loyalsock Creek
NPDES 2	PAG2004106016	David R Webb Company Inc.	Williamsport	Fox Hollow Run
NPDES 6	PAR804865	FedEx	Williamsport	Fox Hollow Run
NPDES 1	PAR124802	Frito Lay Incorporated	Williamsport	Daugherty Run
NPDES 3	PAG02004115011	Glyco Chemicals Incorporated	Williamsport	Daugherty Run
NPDES 4	PAR704807	HRI Inc.	Williamsport	Daugherty Run
NPDES 5	PAG02004112030	High Steel Structures Inc.	Williamsport	Daugherty Run

APPENDIX E: Existing BMP Documentation

Table E-1: Existing BMPs

BMP Name	BMP ID	BMP Type	Municipality	Local Watershed	HUC12 Planning Area
Schick Elementary School	BMP-102	Subsurface Infiltration Basin	Loyalsock	Loyalsock Creek	Little Bear Creek-Loyalsock Creek
Greenview Commons	BMP-100	Infiltration Basin	Loyalsock	Mill Creek	Mill Creek-West Side of Loyalsock Creek
Loyalsock Township SD Building	BMP-103	Subsurface Infiltration Basin	Loyalsock	Bull Run	Millers Run
Loyalsock Township High School East	BMP-104	Subsurface Infiltration	Loyalsock	Bull Run	Millers Run
Liberty Mutual	BMP-112	Detention Basin	Loyalsock	Bull Run	Millers Run
Sheetz	BMP-113	Rain Garden	Loyalsock	Bull Run	Millers Run
L3 Parking	BMP-138	Impervious Surface Removal	Loyalsock	Bull Run	Millers Run
Loyalsock Township Building	BMP-125	Subsurface Infiltration	Loyalsock	Bull Run	Millers Run
St. David's Road	BMP-137	Subsurface Infiltration	Loyalsock	Bull Run	Millers Run
Tinsman	BMP-135	Subsurface Infiltration	Loyalsock	Bull Run	Millers Run
Sheridan and Morgan Ave.	BMP-136	Subsurface Infiltration	Loyalsock	Bull Run	Millers Run
Wilmont Drive Basin	BMP-143	Dry Extended Detention	Loyalsock	Bull Run	Millers Run
Loyalsock Township High School North	BMP-105	Subsurface Infiltration	Loyalsock	Millers Run	Millers Run
Loyalsock Township High School West	BMP-106	Infiltration Basin	Loyalsock	Millers Run	Millers Run
Hampton Inn	BMP-107	Infiltration Basin	Loyalsock	Millers Run	Millers Run
Loyalsock Township Dog Park	BMP-123	Rain Garden	Loyalsock	Millers Run	Millers Run
Loyalsock Township Community Center	BMP-121	Subsurface Infiltration Basin	Loyalsock	Millers Run	Millers Run
Loyalsock Recycling Center	BMP-124	Subsurface Infiltration	Loyalsock	Millers Run	Millers Run
Bruce E Henry Park	BMP-128	Subsurface Infiltration	Loyalsock	Millers Run	Millers Run
Henry Park Stream Stabilization	BMP-144	Stream Restoration	Loyalsock	Millers Run	Millers Run
Loyal Plaza Swale/Detention	BMPs-146, 147, 148	Swale/Dry Extended Detention	Loyalsock	Millers Run	Millers Run
Short Park Stream Stabilization	BMP-145	Stream Restoration	Loyalsock	Millers Run	Millers Run
Avalon Parkway	BMP-134	Subsurface Infiltration	Loyalsock	Grafius Run / McClures Run	Millers Run
Bonair Drive	BMP-101	Subsurface Infiltration Basin	Loyalsock	Grafius Run	Millers Run
Oakmont	BMP-114	Subsurface Infiltration Basin	Loyalsock	Grafius Run	Millers Run
Northwood/Alexis Drives	BMP-127	Infiltration Basin	Loyalsock	Grafius Run	Millers Run
Williamsport Home	BMP-132	Infiltration Basin	Loyalsock	Grafius Run	Millers Run
Love Drive	BMP-133	Infiltration Basin	Loyalsock	Grafius Run	Millers Run
Cemetery Road	BMP-129	Infiltration Berm	Loyalsock	Grafius Run / Lycoming Creek	Millers Run / Lycoming Creek-West Branch Susquehanna River

BMP Name	BMP ID	BMP Type	Municipality	Local Watershed	HUC12 Planning Area
McCoy St	BMP-110	Infiltration Basin	Loyalsock	Lycoming Creek	Lycoming Creek-West Branch Susquehanna River
Cummins Sales/Service	BMP-109	Infiltration Basin	Loyalsock	Lycoming Creek	Lycoming Creek-West Branch Susquehanna River
Balls Mills Soccer Fields	BMP-116	Infiltration Basin	Loyalsock	Lycoming Creek	Lycoming Creek-West Branch Susquehanna River
Heshbon Park	BMP-126	Subsurface Infiltration	Loyalsock	Lycoming Creek	Lycoming Creek-West Branch Susquehanna River
Williamsport Recycling Center	BMP-115	Infiltration Basin	Williamsport	Lycoming Creek	Lycoming Creek-West Branch Susquehanna River
Laurel Run Circle	BMP-117	Infiltration Basin	Williamsport	Daugherty Run	Quenshukeny Run
Woodland Heights	BMPs-130, 131	Detention Basins (2)	Williamsport	Daugherty Run	Quenshukeny Run
Williamsport High School	BMP-120	Subsurface Infiltration Basin	Williamsport	Daugherty / Fox Hollow	Quenshukeny Run
Seewald	BMP-111	Detention Basin	Williamsport	Fox Hollow Run	Quenshukeny Run
Grey Fox Rentals	BMP-141	Subsurface Infiltration/WQ Filters	Williamsport	Fox Hollow Run	Quenshukeny Run
Phoenix Trim Works	BMP-139	Pervious Pavement	Williamsport	Fox Hollow Run	Quenshukeny Run
Penny Heights	BMPs-130,131	Detention Basins	Williamsport	Fox Hollow Run	Quenshukeny Run
SEDA-COG	BMP-140	Infiltration Basin	Williamsport	Fox Hollow Run	Quenshukeny Run
Reach Rd	BMP-142	Infiltration Berm	Williamsport	Fox Hollow Run	Quenshukeny Run

Little Bear Creek-Loyalsock Creek Existing BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) - Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load	TP_Load	TN_Load	TSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction_lbsPerYr	TSS_Reduction_tonPerYr	TP_Reduction_lbsPerYr	TN_Reduction_lbsPerYr
Schick Elementary School	BMP-102	RR	Existing		Ld_Mixed	39.76	0.11			5.96	0.75		0.75	15.0%	20,953.21	7.56	25.45	68.0%	63.5%	54.3%	14,258.06	7.13	4.80	13.83
Schick Elementary School	BMP-102	RR	Existing		Md_Mixed	11.28	0.39			5.87	0.75		0.75	52.0%	18,328.12	7.56	23.24	68.0%	63.5%	54.3%	12,471.76	6.24	4.80	12.63

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
ADD ROWS by right-clicking a row number inside the Table, and chosing "Insert". This will automatically copy formulas and update links throughout this workbook.

	Cells requiring user input for all BMPs
	Cells requiring user input for BMP efficiencies calculated using Performance Standard approach
	Cells requiring user input for non-Performance Standard BMPs (e.g., streambank stabilization and street sweeping)
	Cell values calculated based on user input
	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

287368.8 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
10564.3 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas. Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	44.44
Cropland	69.14
Wooded Areas	148.15
Wetlands	17.28
Open Land	-
Barren Areas	2.47
Low-Density Mixed	209.88
Medium-Density Mixed	22.22
High-Density Mixed	4.94
Total	518.52

TOTAL LBS REDUCED26,729.8213.369.6026.46

Existing TOTAL LBS REDUCED26,729.8213.369.6026.46

Proposed TOTAL LBS REDUCED- - - -

Project Name				
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-

Mill Creek-West Side Loyalsock Creek Existing BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) - Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load	lbPerTP_Load	lbPerTN_Load	TSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction_lbsPerYr	TSS_Reduction_tonPerYr	TP_Reduction_lbsPerYr	TN_Reduction_lbsPerYr
Greenview Commons	BMP-100	RR	Existing		Ld_Mixed	11.68	0.40			1.75	2.50		2.50	15.0%	5,880.15	1.87	5.49	84.9%	78.8%	67.7%	4,992.14	2.50	1.47	3.72
Greenview Commons	BMP-100	RR	Existing		Md_Mixed	4.32	1.50			2.25	2.50		2.50	52.0%	7,476.33	3.11	11.79	84.9%	78.8%	67.7%	6,347.27	3.17	2.45	7.98

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
ADD ROWS by right-clicking a row number inside the Table, and chosing "Insert". This will automatically copy formulas and update links throughout this workbook.

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	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

111351.7 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
6430.4 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas. Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)	
Hay/Pasture	-	
Cropland	-	
Wooded Areas	-	
Wetlands	-	
Open Land	-	
Barren Areas	-	
Low-Density Mixed	-	
Medium-Density Mixed	-	
High-Density Mixed	-	

Total -

TOTAL LBS REDUCED 11,339.40 5.67 3.92 11.70

Existing TOTAL LBS REDUCED 11,339.40 5.67 3.92 11.70

Proposed TOTAL LBS REDUCED - - - -

Project Name				
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-

Millers Run Existing BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalize	treatmentDepthNorm	treatmentDepthNorm	fractionImperv	TSS_Load_lbPerYr	TP_Load_lbPerYr	TN_Load_lbPerYr	TSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction_lbPerYr	TSS_Reduction_tonPerYr	TP_Reduction_lbPerYr	TN_Reduction_lbPerYr
Bonair Drive	BMP-101	RR	Existing		Ld_Mixed	1.05	0.09			0.16	0.57		0.57	15.0%	549.80	0.17	0.63	59.9%	55.9%	47.9%	329.38	0.16	0.09	0.30
Bonair Drive	BMP-101	RR	Existing		Md_Mixed	1.05	0.30			0.54	0.58		0.58	52.0%	1,104.74	0.44	2.33	60.5%	56.4%	48.4%	667.91	0.33	0.25	1.13
Loyalsock Township SD Building	BMP-103	RR	Existing		Ld_Mixed	0.41	0.40			0.06	2.50		2.50	15.0%	217.77	0.07	0.25	84.9%	78.8%	67.7%	184.88	0.09	0.05	0.17
Loyalsock Township SD Building	BMP-103	RR	Existing		Md_Mixed	3.73	1.50			1.94	2.50		2.50	52.0%	3,938.13	1.57	8.32	84.9%	78.8%	67.7%	3,343.40	1.67	1.24	5.63
Loyalsock Township High School East	BMP-104	RR	Existing		Ld_Mixed	11.29	0.40			1.69	2.50		2.50	15.0%	5,926.52	1.81	6.77	84.9%	78.8%	67.7%	5,031.50	2.52	1.42	4.58
Loyalsock Township High School East	BMP-104	RR	Existing		Md_Mixed	8.51	1.50			4.43	2.50		2.50	52.0%	8,983.54	3.58	18.99	84.9%	78.8%	67.7%	7,626.86	3.81	2.82	12.85
Loyalsock Township High School North	BMP-105	RR	Existing		Md_Mixed	6.14	1.50			3.19	2.50		2.50	52.0%	6,481.15	2.58	13.70	84.9%	78.8%	67.7%	5,502.37	2.75	2.03	9.27
Loyalsock Township High School North	BMP-105	RR	Existing		Hd_Mixed	1.54	2.50			1.34	2.50		2.50	87.0%	2,306.39	0.83	4.02	84.9%	78.8%	67.7%	1,958.08	0.98	0.65	2.72
Loyalsock Township High School West	BMP-106	RR	Existing		Ld_Mixed	0.68	0.40			0.10	2.50		2.50	15.0%	356.54	0.11	0.41	84.9%	78.8%	67.7%	302.69	0.15	0.09	0.28
Hampton Inn	BMP-107	RR	Existing		Ld_Mixed	5.40	0.40			0.81	2.50		2.50	15.0%	2,833.03	0.86	3.24	84.9%	78.8%	67.7%	2,405.19	1.20	0.68	2.19
Hampton Inn	BMP-107	RR	Existing		Md_Mixed	2.91	1.50			1.51	2.50		2.50	52.0%	3,065.21	1.22	6.48	84.9%	78.8%	67.7%	2,602.30	1.30	0.96	4.39
Liberty Mutual	BMP-112	RR	Existing		Ld_Mixed	3.96	0.15			0.59	1.00		1.00	15.0%	2,078.53	0.63	2.37	74.9%	69.9%	59.8%	1,557.03	0.78	0.44	1.42
Liberty Mutual	BMP-112	RR	Existing		Md_Mixed	2.64	0.52			1.37	1.00		1.00	52.0%	2,784.33	1.11	5.88	74.9%	69.9%	59.8%	2,085.74	1.04	0.77	3.52
Sheetz	BMP-113	RR	Existing		Hd_Mixed	0.20	2.50			0.17	2.50		2.50	87.0%	297.67	0.11	0.52	84.9%	78.8%	67.7%	252.72	0.13	0.08	0.35
Oakmont	BMP-114	RR	Existing		Ld_Mixed	4.98	0.15			0.75	1.00		1.00	15.0%	2,617.21	0.80	2.99	74.9%	69.9%	59.8%	1,960.55	0.98	0.56	1.79
Oakmont	BMP-114	RR	Existing		Md_Mixed	0.01	0.52			0.01	1.00		1.00	52.0%	15.82	0.01	0.03	74.9%	69.9%	59.8%	11.85	0.01	0.00	0.02
Loyalsock Township Community Center	BMP-121	RR	Existing		Md_Mixed	1.31	0.25			0.48	0.48		0.48	52.0%	1,382.51	0.55	2.92	54.8%	51.1%	43.8%	757.06	0.38	0.28	1.28
Loyalsock Township Community Center	BMP-121	RR	Existing		Hd_Mixed	0.44	0.42			0.38	0.48		0.48	87.0%	655.97	0.24	1.14	54.9%	51.2%	43.9%	360.07	0.18	0.12	0.50
Loyalsock Township Dog Park	BMP-123	RR	Existing		Ld_Mixed	0.39	0.40			0.06	2.50		2.50	15.0%	203.93	0.06	0.23	84.9%	78.8%	67.7%	173.13	0.09	0.05	0.16
Loyalsock Township Dog Park	BMP-123	RR	Existing		Open_Land	0.47	0.40					1.00	1.00	0.0%	178.20	0.08	0.53	74.9%	69.9%	59.8%	133.49	0.07	0.05	0.32
Williamsport Home	BMP-132	RR	Existing		Ld_Mixed	4.62	0.30			0.69	2.00		2.00	15.0%	2,424.81	0.74	2.77	83.9%	78.2%	66.9%	2,035.39	1.02	0.58	1.85
Williamsport Home	BMP-132	RR	Existing		Md_Mixed	1.38	1.00			0.72	1.92		1.92	52.0%	1,455.36	0.58	3.08	83.7%	78.0%	66.7%	1,218.83	0.61	0.45	2.05
Love Drive	BMP-133	RR	Existing		Ld_Mixed	0.56	0.50			0.08	2.50		2.50	15.0%	295.52	0.09	0.34	84.9%	78.8%	67.7%	250.89	0.13	0.07	0.23
Love Drive	BMP-133	RR	Existing		Md_Mixed	0.17	1.00			0.09	1.92		1.92	52.0%	177.37	0.07	0.37	83.7%	78.0%	66.7%	148.54	0.07	0.06	0.25
Avalon Parkway	BMP-134	RR	Existing		Ld_Mixed	0.44	0.50			0.07	2.50		2.50	15.0%	233.24	0.07	0.27	84.9%	78.8%	67.7%	198.02	0.10	0.06	0.18
Avalon Parkway	BMP-134	RR	Existing		Open_Land	0.11				0.00	#N/A	1.00	1.00	0.0%	41.69	0.02	0.12	74.9%	69.9%	59.8%	31.23	0.02	0.01	0.07
Tinsman	BMP-135	RR	Existing		Ld_Mixed	1.87	1.00			0.28	2.50		2.50	15.0%	982.62	0.30	1.12	84.9%	78.8%	67.7%	834.22	0.42	0.24	0.76
Tinsman	BMP-135	RR	Existing		Md_Mixed	1.01	0.50			0.52	0.96		0.96	52.0%	1,063.15	0.42	2.25	74.1%	69.1%	59.1%	787.59	0.39	0.29	1.33
Sheridan and Morgan Ave.	BMP-136	RR	Existing		Md_Mixed	7.20	1.00			1.08	2.50		2.50	15.0%	3,779.29	1.15	4.32	84.9%	78.8%	67.7%	3,208.55	1.60	0.91	2.92
Sheridan and Morgan Ave.	BMP-136	RR	Existing		Md_Mixed	7.20	0.50			3.74	0.96		0.96	52.0%	7,593.90	3.02	16.05	74.1%	69.1%	59.1%	5,625.67	2.81	2.09	9.48
St. David's Road	BMP-137	RR	Existing		Ld_Mixed	2.22	1.00			0.33	2.50		2.50	15.0%	1,164.02	0.35	1.33	84.9%	78.8%	67.7%	988.23	0.49	0.28	0.90
St. David's Road	BMP-137	RR	Existing		Md_Mixed	0.66	0.50			0.34	0.96		0.96	52.0%	698.64	0.28	1.48	74.1%	69.1%	59.1%	517.56	0.26	0.19	0.87
L3 Parking	BMP-138	RR	Existing		Md_Mixed	0.80	0.25			0.41	0.48		0.48	52.0%	840.06	0.33	1.78	54.8%	51.1%	43.8%	460.01	0.23	0.17	0.78
L3 Parking	BMP-138	RR	Existing		Hd_Mixed	0.24	0.35			0.41	0.41		0.41	87.0%	360.47	0.13	0.63	49.5%	46.2%	39.6%	178.30	0.09	0.06	0.25
Recycling Center	BMP-124	RR	Existing		Ld_Mixed	0.49	0.15			0.07	1.00		1.00	15.0%	254.74	0.08	0.29	74.9%	69.9%	59.8%	190.82	0.10	0.05	0.17
Recycling Center	BMP-124	RR	Existing		Md_Mixed	1.13	0.52			0.59	1.00		1.00	52.0%	1,194.32	0.48	2.52	74.9%	69.9%	59.8%	894.67	0.45	0.33	1.51
Loyalsock Township Building	BMP-125	RR	Existing		Hd_Mixed	2.92	0.50			2.54	0.57		0.57	87.0%	4,385.68	1.58	7.65	60.3%	56.3%	48.3%	2,646.36	1.32	0.89	3.69
Northwood Dr Roadside	BMP-127	RR	Existing		Ld_Mixed	12.52	0.50			1.88	2.50		2.50	15.0%	6,574.05	2.00	7.51	84.9%	78.8%	67.7%	5,581.24	2.79	1.58	5.09
Northwood Dr Roadside	BMP-127	RR	Existing		Md_Mixed	0.66	0.50			0.34	0.96		0.96	52.0%	695.24	0.28	1.47	74.1%	69.1%	59.1%	515.04	0.26	0.19	0.87
Bruce E Henry Park	BMP-128	RR	Existing		Open_Land	4.13	0.50			0.00	#N/A	1.00	1.00	0.0%	1,549.81	0.66	4.62	74.9%	69.9%	59.8%	1,160.96	0.58	0.46	2.76
Henry Park Stream Stabilization	BMP-145	Stream Restoration	Existing					350		#N/A	#N/A		#N/A	#N/A	#N/A	#N/A	#N/A	0.0%	0.0%	0.0%	40,250.00	20.13	60.90	67.20
Short Park Stream Stabilization	BMP-144	Stream Restoration	Existing					400		#N/A	#N/A		#N/A	#N/A	#N/A	#N/A	#N/A	0.0%	0.0%	0.0%	46,000.00	23.00	69.60	76.80
Loyal Plaza Swale/Detention	BMPs-146,147,148	RR	Existing		Md_Mixed	2,581.2	0.35			1.34	0.67		0.67	52.0%	2,723.55	1.08	5.76	65.0%	60.7%	52.0%	1,771.39	0.89	0.66	2.99
Loyal Plaza Swale/Detention	BMPs-146,147,148	RR	Existing		Hd_Mixed	30,993.8	0.57			26.96	0.66		0.66	87.0%	46,551.01	16.74	81.20	64.3%	60.0%	51.4%	29,914.03	14.96	10.04	41.71
Wilmont Dr. Detention	BMP-143	RR	Existing		Ld_Mixed	1,438.38	0.10			0.22	0.67		0.67	15.0%	755.32	0.23	0.86	64.8%	60.4%	51.8%	489.18	0.24	0.14	0.45
Wilmont Dr. Detention	BMP-143	RR	Existing		Md_Mixed	6,552.62	0.35			3.41	0.67		0.67	52.0%	6,913.99	2.75	14.61	65.0%	60.7%	52.0%	4,496.83	2.25	1.67	7.60

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
ADD ROWS by right-clicking a row number inside the Table, and chosing "Insert". This will automatically copy formulas and update links throughout this workbook.

	Cells requiring user input for all BMPs
	Cells requiring user input for BMP efficiencies calculated using Performance Standard approach
	Cells requiring user input for non-Performance Standard BMPs (e.g., streambank stabilization and street sweeping)
	Cell values calculated based on user input
	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

175000.0 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
67486.9 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas.
Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	340.74
Cropland	69.14
Wooded Areas	720.99
Wetlands	56.79
Open Land	2.47
Barren Areas	2.47
Low-Density Mixed	3,244.44
Medium-Density Mixed	864.20
High-Density Mixed	437.04
Total	5,738.27

TOTAL LBS REDUCED	187,639.78	93.82	164.62	285.64
Existing TOTAL LBS REDUCED	187,639.78	93.82	164.62	285.64
Proposed TOTAL LBS REDUCED	-	-	-	-
Project Name				
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-

Lycoming Creek-West Branch Susquehanna River Existing BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load	TP_PerTP_Load_lbPer	TN_Load_lbPer	TSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction_lbPerY	TSS_Reduction_tonPerY	TP_Reduction_lbPerY	TN_Reduction_lbPerY
Cummins Sales	BMP-109	RR	Existing		Ld_Mixed	6.73	1.00			1.01	2.50		2.50	15.0%	3,056.18	0.94	3.97	84.9%	78.8%	67.7%	2,594.64	1.30	0.74	2.69
Cummins Sales	BMP-109	RR	Existing		Md_Mixed	1.19	1.00			0.62	1.92		1.92	52.0%	1,462.32	0.55	2.42	83.7%	78.0%	66.7%	1,224.66	0.61	0.43	1.62
McCoy Street	BMP-110	RR	Existing		Ld_Mixed	0.28	0.09			0.04	0.57		0.57	15.0%	127.24	0.04	0.17	59.9%	55.9%	47.9%	76.23	0.04	0.02	0.08
McCoy Street	BMP-110	RR	Existing		Md_Mixed	2.52	0.30			1.31	0.57		0.57	52.0%	3,104.96	1.16	5.15	59.9%	55.9%	48.0%	1,861.20	0.93	0.65	2.47
Williamsport Soccer Fields	BMP-116	RR	Existing		Ld_Mixed	65.92	0.09			9.89	0.60		0.60	15.0%	29,931.56	9.23	38.89	61.7%	57.5%	49.3%	18,453.13	9.23	5.31	19.18
Williamsport Soccer Fields	BMP-116	RR	Existing		Md_Mixed	2.04	0.30			1.06	0.58		0.58	52.0%	2,509.97	0.94	4.16	60.5%	56.4%	48.4%	1,517.49	0.76	0.53	2.01
Heshbon Park	BMP-126	RR	Existing		Hd_Mixed	0.70	0.50			0.61	0.57		0.57	87.0%	1,334.71	0.46	1.60	60.3%	56.3%	48.3%	805.38	0.40	0.26	0.77
Cemetery Road	BMP-129	RR	Existing		Ld_Mixed	1.84	0.50			0.28	2.50		2.50	15.0%	834.90	0.26	1.08	84.9%	78.8%	67.7%	708.82	0.35	0.20	0.73
Cemetery Road	BMP-129	RR	Existing		Open_Land	10.42	0.50			0.00	#N/A	2.00	2.00	0.0%	2,755.11	1.88	11.15	83.9%	78.2%	66.9%	2,312.64	1.16	1.47	7.45
Williamsport Recycling Cente	BMP-115	RR	Existing		Hd_Mixed	0.86	2.50			0.75	2.50		2.50	87.0%	1,636.75	0.57	1.96	84.9%	78.8%	67.7%	1,389.57	0.69	0.45	1.32

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
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	Cell values calculated based on user input
	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

245767.7 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
25065.6 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas.
Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	175.31
Cropland	12.35
Wooded Areas	301.23
Wetlands	24.69
Open Land	4.94
Barren Areas	-
Low-Density Mixed	738.27
Medium-Density Mixed	249.38
High-Density Mixed	64.20
Total	1,570.37

TOTAL LBS REDUCED30,943.7515.4710.0638.32

Existing TOTAL LBS REDUCED30,943.7515.4710.0638.32

Proposed TOTAL LBS REDUCED- - - -

Project Name	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-

Quenshukney Run Existing BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load	TP_Load	TN_Load	TSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction_lbsPerYr	TSS_Reduction_tonPerYr	TP_Reduction_lbsPerYr	TN_Reduction_lbsPerYr
Seewald	BMP-111	RR	Existing		Ld_Mixed	0.58	0.09			0.09	0.57		0.57	15.0%	285.76	0.08	0.35	59.9%	55.9%	47.9%	171.19	0.09	0.05	0.17
Seewald	BMP-111	RR	Existing		Open_Land	0.58				0.00	#N/A		0.55	0.0%	147.92	0.08	0.59	59.0%	55.1%	47.2%	87.25	0.04	0.04	0.28
Laurel Run Circle	BMP-117	RR	Existing		Ld_Mixed	2.91	0.20			0.44	1.33		1.33	15.0%	1,435.00	0.41	1.77	79.9%	74.6%	63.8%	1,147.28	0.57	0.30	1.13
Laurel Run Circle	BMP-117	RR	Existing		Md_Mixed	6.78	0.70			3.53	1.35		1.35	52.0%	8,901.02	3.19	14.79	80.1%	74.7%	63.9%	7,128.59	3.56	2.38	9.45
Williamsport High School	BMP-120	RR	Existing		Ld_Mixed	26.01	0.09			3.90	0.57		0.57	15.0%	12,838.98	3.64	15.87	59.9%	55.9%	47.9%	7,691.58	3.85	2.04	7.60
Williamsport High School	BMP-120	RR	Existing		Md_Mixed	30.54	0.30			15.88	0.57		0.57	52.0%	40,066.15	14.35	66.57	59.9%	55.9%	48.0%	24,016.79	12.01	8.03	31.92
Woodland Heights	BMP-130	RR	Existing		Open_Land	1.58				0.00	#N/A		1.00	0.0%	403.76	0.22	1.61	74.9%	69.9%	59.8%	302.46	0.15	0.15	0.96
Woodland Heights	BMP-131	RR	Existing		Open_Land	1.35				0.00	#N/A		1.00	0.0%	345.64	0.19	1.38	74.9%	69.9%	59.8%	258.92	0.13	0.13	0.82
2211 Reach Rd	BMP-139	RR	Existing		Md_Mixed	6.63	0.70			3.45	1.35		1.35	52.0%	8,698.89	3.12	14.45	80.1%	74.7%	63.9%	6,966.72	3.48	2.33	9.23
2211 Reach Rd	BMP-139	RR	Existing		Hd_Mixed	0.35	1.00			0.30	1.15		1.15	87.0%	707.71	0.23	0.85	77.6%	72.4%	61.9%	548.99	0.27	0.16	0.52
SEDA-COG	BMP-140	RR	Existing		Ld_Mixed	3.35	0.20			0.50	1.33		1.33	15.0%	1,651.46	0.47	2.04	79.9%	74.6%	63.8%	1,320.34	0.66	0.35	1.30
SEDA-COG	BMP-140	RR	Existing		Open_Land	2.23				0.00	#N/A		1.00	0.0%	569.90	0.31	2.28	74.9%	69.9%	59.8%	426.91	0.21	0.22	1.36
Grey Fox Rentals	BMP-141	RR	Existing		Md_Mixed	1.39	0.70			0.72	1.35		1.35	52.0%	1,827.85	0.65	3.04	80.1%	74.7%	63.9%	1,463.88	0.73	0.49	1.94
Grey Fox Rentals	BMP-141	RR	Existing		Hd_Mixed	2.09	1.00			1.82	1.15		1.15	87.0%	4,238.15	1.36	5.08	77.6%	72.4%	61.9%	3,287.64	1.84	0.98	3.14
Reach Rd infiltration	BMP-142	RR	Existing		Md_Mixed	0.25	0.70			0.13	1.35		1.35	52.0%	323.27	0.12	0.54	80.1%	74.7%	63.9%	258.90	0.13	0.09	0.34
Reach Rd infiltration	BMP-142	RR	Existing		Hd_Mixed	0.37	1.00			0.32	1.15		1.15	87.0%	749.56	0.24	0.90	77.6%	72.4%	61.9%	581.45	0.29	0.17	0.56

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
ADD ROWS by right-clicking a row number inside the Table, and chosing "Insert". This will automatically copy formulas and update links throughout this workbook.

	Cells requiring user input for all BMPs
	Cells requiring user input for BMP efficiencies calculated using Performance Standard approach
	Cells requiring user input for non-Performance Standard BMPs (e.g., streambank stabilization and street sweeping)
	Cell values calculated based on user input
	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

261515.8 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
14796.6 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas. Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	175.31
Cropland	9.88
Wooded Areas	372.84
Wetlands	69.14
Open Land	-
Barren Areas	-
Low-Density Mixed	718.52
Medium-Density Mixed	377.78
High-Density Mixed	187.65
Total	1,911.11

TOTAL LBS REDUCED55,658.8927.8317.9270.74

Existing TOTAL LBS REDUCED55,658.8927.8317.9270.74

Proposed TOTAL LBS REDUCED- - - -

Project Name	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-

APPENDIX F: Proposed BMP Documentation

Primary Locations

BMP-204 Sand Hill Road Infiltration Berm – The Township is proposing to construct an infiltration berm along the western side of Sand Hill Road. Drainage from the adjacent neighborhood and upland forested area drain onto Sand Hill Road and across onto the other side. The infiltration berm is proposed to retain and infiltrate this runoff.

This BMP will help to reduce volume and rate entering the downstream watershed, allow eroded material upland to be deposited on the berm, and to slowly release runoff stored along the berm to the downstream watershed reducing erosion and sediment deposition.

BMP-205 Robbins Road Infiltration Basin Retrofit – Stormwater runoff from the roadway, residential development, and pervious surfaces up gradient of the existing basin along Warrensville Road between Robbins Road and Sand Hill Road drains directly into this basin via overland flow and direct piping.

The existing basin will be retrofitted to increase capacity, promote infiltration, and improve water quality vegetation. The existing basin will be regraded to improve capacity. Hydrological and Hydraulic computations will be used to resize and redesign the basin outlet structure. Approximately 29 acres of drainage from the local development and forested area will drain to this basin via overland flow and proposed piping system. A new outlet structure will be designed to increase the amount of stored water within the pond to promote infiltration and nutrient uptake from the water quality plantings. The outlet structure will be designed to slowly release runoff from higher storm events into the downstream storm sewer system. This will help to reduce erosion and help to improve capacity in the system by reducing the rate of runoff from the basin and its associated upstream drainage into the piping network.

BMP-246 Mountain Crescent Subsurface Infiltration – A subsurface infiltration BMP is proposed to be placed within the cartway of Mountain Crescent Road. The proposed subsurface infiltration BMP will receive 2 acres of drainage from the local residential neighborhood and a portion of the upland forested area. This BMP will receive drainage through direct piping and overland flow into the storm sewer system. The subsurface BMP will be designed to create a localized groundwater recharge area. This BMP will contain a stone bed which will be open graded clean stone. An overflow device will be designed to convey large storm events such that the runoff rate directed to the downstream storm sewer system is reduced as feasibly possible.

BMP-201 Becht School Redevelopment Subsurface Infiltration - The proposed subsurface infiltration BMP will receive 2.56 acres of drainage from the local residential neighborhood and Becht School lot. The subsurface BMP will be designed to create a localized groundwater recharge region. This BMP will contain a stone bed which will be open graded clean stone containing a minimum void space of 40%. An overflow device will be designed to convey large storm events such that the runoff rate is reduced as feasibly possible to reduce any accelerated erosion associated with typical overflow devices.

This infiltration BMP is selected to be used due to the limited room available. The existing school has been redeveloped and has created an opportunity for BMP implementation. Existing and proposed stormwater infrastructure will be routed to the proposed BMP within the central open space area.

BMP-214 Ruby Tuesday's/Harley Davidson Basin Retrofit - Stormwater runoff from the parking lots of Ruby's Tuesday and Harley Davidson drains directly into this basin via overland flow and direct piping.

The existing basin will be retrofitted to increase capacity, promote infiltration, and improve water quality vegetation. The existing basin regraded to improve capacity. Hydrological and Hydraulic computations will be used to resize and redesign the basin outlet structure.

A new outlet structure will be designed to increase the amount of stored water within the pond to promote infiltration and nutrient uptake from the water quality plantings. The outlet structure will be designed to slowly

release runoff from higher storm events into the downstream stormsewer system. This will help to reduce erosion and help to improve capacity in the system by reducing the rate of runoff from the basin and its associated upstream drainage into the piping network.

BMP-241 Reed Street Stormwater Treatment Wetland - The proposed stormwater treatment will be placed at an existing forested depression. This location was identified due to an existing stream, Bull Run, flowing through this area and the surrounding neighborhood stormwater collection system discharges stormwater into the stream at this location. The Township owned property will be converted into wetlands that will be engineered to retain and treat up to 70 acres of runoff. The existing stormwater outfall pipe will be shortened and runoff will be redirected from directly discharging to Bull Run to discharging into and through the forested area. The constructed wetland will consist of surface regrading to help promote ponding, native water quality vegetation to promote nutrient uptake, and dewatering mechanism for use during extreme flooding events. The constructed wetlands will be hydrogeologically supplied by the drainage area and from groundwater interception of the adjacent Bull Run stream system.

BMP-240 Pennvale-Randall Circle Permeable Pavement and/or Infiltration Basin – Pennvale/Randall Circle is a townhouse development managed by the Lycoming County Housing Authority. The area contains several small parking areas for its residents throughout the development. These parking areas could be targeted to contain new permeable pavement parking aisles.

If a permeable pavement system is utilized, the travel lane through the parking regions will remain as bituminous pavement, with the parking aisles to be converted to permeable pavement. Inlets will be proposed and routed to the infiltration beds beneath the pavement. These small sections of permeable pavement located throughout the development will receive approximately 3 acres of drainage in total consisting of mostly roadway drainage. The pavement will be designed to store water, create a localized region of groundwater recharge, and help reduce peak rates from the impervious roadway. Maintenance of the pervious pavement will consist of street sweeping every 6-months with proper notification to all residents.

The townhouse development also contains several open space areas that runoff drains to from within the neighborhood. These open spaces could be redesigned to contain either surface or subsurface infiltration system. The decision on which BMP will be used will be determined after survey of the region has been completed and piping system mapped.

A surface infiltration system would consist of an infiltration basin. The open space area would be lowered, a forebay will be constructed, and an outlet structure designed. This outlet structure will be designed to store water during low flow situations and reduce peak rate during large storm events. As the open space area is currently used for recreation activities for the residents, the infiltration basin will be seeded with a turf mix and continued to be mowed and maintained. This basin will be strictly for sediment reduction and will provide little water quality benefit.

A subsurface infiltration system would be designed to create a localized groundwater recharge region. This BMP will contain a stone bed which will be open graded clean stone. An overflow device will be designed to convey large storm events.

BMP-224 Loyalsock Community Center Stormwater Management Features

Parking Infiltration Basin - The Loyalsock Community Center parking area will be redesigned to direct runoff to a single infiltration basin or a series of smaller basins. This will be achieved through redirecting the existing parking lot drainage by using inlets and piping to a graded depression (infiltration basin).

The proposed infiltration basin(s) will provide a localized area of groundwater recharge and help to reduce both volume and peak flow discharge Millers Run. The basin will be constructed with an engineered soil

media to help promote infiltration and water storage within the soil media. Water quality vegetation will be planted within the basin to promote nutrient uptake and reduce pollution to the groundwater and downstream discharge point.

Greenway Trail - The Loyalsock Community Center Trail will be improved with a series of swales along the trail that will help to direct runoff to an infiltration basin.

The proposed infiltration basin(s) will provide a localized area of groundwater recharge and help to reduce both volume and peak flow discharge to Millers Run. The basin will be constructed with an engineered soil media to help promote infiltration and water storage within the soil media. Water quality vegetation will be planted within the basin to promote nutrient uptake and reduce pollution to the groundwater and downstream discharge point.

Regenerative Stormwater Conveyance - The proposed project will retrofit an existing eroding drainage path into a regenerative stormwater conveyance system. The existing swale will be excavated to include new engineered media and regraded to include various steps, pools, check dams, and other in channel features to help reduce the conveyance velocity and promote infiltration. The conveyance system will be seeded with a wet mix and water quality shrubbery planted along the length of the system. The proposed conveyance system will reduce stormwater runoff volume, reduce runoff rate, reduce sediment loading, and promote nutrient reduction.

BMP-237 Millers Run at Short Park Stream Restoration - The project consists of the restoration of 300 to 450 feet stream segment of Millers Run located within Short Park.

This portion of Millers Run has been targeted for restoration due the extent of bank erosion and loss of bank armoring seen along the Short Park trail. This restoration would consist of construction a more natural stream channel through the use of instream structures such as cross vanes and j-hooks. The project will aim to reestablish the floodplain, remove legacy sediment, and establish a riparian buffer to aid in stabilizing the stream bed and banks and reintroducing a more natural riparian buffer area on the east side of the stream. Constructed features will aid in slowing stream velocity and sediment transport. Incorporating native vegetation through an approximate 70 foot buffer (at least 35 feet on each side of the stream and trail) will help reduce sediment load from runoff entering the stream and provide aquatic habitat, while reducing thermal impacts to the stream.

BMP-250/251 Cameo – Short Park Stormwater Management Facilities – A rain garden and subsurface infiltration facility will be designed within Short Park to control stormwater runoff from the parking lot and open space area. The existing park and parking lot area is located within the Millers Run floodplain. Currently, runoff from this site drains directly into Millers Run via overland flow. The implementation of stormwater controls will help to reduce the volume and runoff directly entering the stream and help to reduce thermal impacts associated with the impervious cover.

A rain garden and subsurface infiltration system will be designed to create a groundwater recharge area. This BMP will contain a stone bed which will be open graded clean stone.

BMP-209 Northway - Church of Saint Ann Infiltration Basin – The runoff from this site directly drains to Millers Run via overland flow. This project is targeted to control the runoff and peak flow rates from the Saint Ann's parking lot and adjacent street runoff where conveyance to the proposed practice is feasible. The basin will be designed with inlets and pipes to direct the stormwater runoff to a new infiltration basin.

The proposed infiltration basin will provide a localized area of groundwater recharge and help to reduce both volume and peak flow discharge to its downstream drainage area. The basin will be constructed with an engineered soil media to help promote infiltration and water storage within the soil media. Water quality vegetation will be planted within the basin to promote nutrient uptake and reduce pollution to the

groundwater and downstream discharge point. An engineered outlet structure will be designed to increase stormwater retention from smaller storm events to promote sediment reduction and water storage for further nutrient uptake and slowly release larger storm events.

BMP-239 Hidden Valley Basin Retrofit – An existing basin approximately 1 acre in size is located west of the intersection of Hidden Valley Drive and Fairview Road. This existing basin receives approximately 66.7 acres of drainage from the surrounding development and roadway system. This basin has become impacted from sediment deposition and lack of maintenance, limiting the available capacity within the basin and reducing the ability for vegetation to establish.

The existing basin will be retrofitted to increase capacity, promote infiltration, and provide vegetation to improve discharged water quality. A sediment forebay will be graded into the basin to establish a localized region of sediment deposition. This will allow for easy maintenance by Township staff.

A new outlet structure will be designed to increase the amount of stored water within the pond to promote infiltration and nutrient uptake from the water quality plantings. The outlet structure will be designed to slowly release runoff from higher storm events into the tributary stream to Millers Run. This will help to reduce erosion and help to improve capacity in the system by reducing the rate of runoff from the basin and its associated upstream drainage into the piping network.

BMP-238 Cameo Estates to Northway Regenerative Stormwater Conveyance – The Township is proposing to construct a series of conveyance structures in the drainage channel from Cameo Estates down to Northway Road. The system will convey stormwater runoff from the development to the storm sewer located in Short Park.

A regenerative stormwater conveyance project would consist of grading in a channel that will include various steps, pools, check dams, riffle features, and other in channel features to help reduce the conveyance velocity and promote infiltration. The conveyance system will be seeded with a wet mix and water quality shrubbery planted along the length of the system. The proposed conveyance system will further reduce stormwater runoff volume, reduce runoff rate, reduce sediment loading and promote nutrient uptake.

BMP-223 Faxon Bowling Lanes Subsurface Infiltration – Faxon bowling lane is a completely impervious 1.81 acre lot. All stormwater from this site is directed towards inlets and drains into the local roadway system. The lack of stormwater management, and the minimal land available makes this an ideal candidate for a subsurface infiltration BMP.

A subsurface infiltration system will be excavated under the existing parking lot. The existing inlets will connect to the facility. The infiltration system will be designed to create a localized groundwater recharge region. This BMP will contain a stone bed which will be open graded clean stone. Perforated stormwater pipes placed will be placed throughout the bed bottom to increase detention time and promote infiltration.

BMPs-202/203/220/221 Windfield Drive Roadside Subsurface Infiltration – In the northern part of the planning area along Windfield Drive, four locations have been identified for subsurface infiltration BMP implementation. These roadside infiltration systems will receive drainage from the local roadways, neighborhood development, and adjacent open space. This will be achieved by grading in roadside swales and connecting the existing storm sewer system into the facility.

A subsurface infiltration system will be excavated within the existing right of way of Windfield Drive. The existing inlets will connect to the facility. The infiltration system will be designed to create a localized groundwater recharge region. This BMP will contain a stone bed and perforated storm sewer pipes placed throughout the bed bottom to increase detention time and promote infiltration.

BMPs-216/219/230 Northwood Drive Subsurface Infiltration and Infiltration Basin Retrofits – Along Northwood Drive, a proposed series of subsurface infiltration basins and infiltration basin retrofits will be constructed along one side of the road and from an existing smaller basin. The existing roadway is located within a flat grade break on a hill. Drainage from the adjacent neighborhood and forested area drain onto the road and travel across the road to the other side where it then continues to drain down the hill. The Township is proposing to design a subsurface infiltration feature to capture and control this runoff volume.

The infiltration basin retrofits will involve over excavating the existing basins and adding engineered media to help promote infiltration. The basins will be designed to store runoff volume and infiltrate it into the ground. These series of practices will help to reduce volume and rate entering Grafius Run and to slowly release runoff stored to the downslope channel, thereby reducing erosion and sediment deposition downstream.

BMP-234 Ravine Road Infiltration Berms/Swales – A segment along Ravine Road contains a road split where there are small sections of landscaped areas in between each through lane. The City is proposing to turn these landscaped areas into drainage swales and then construct and infiltration berm along the downslope of the road. The site will be located in the City but will only take credit pollutant loads reduced from MS4 drainage area.

The infiltration berm will be located on the north side of the road. The berm will be over excavated and an engineered media will be placed to help promote infiltration into the ground. Various drain pipes will be placed throughout the berm to slowly bypass the berm in cases of extreme storm events.

The swales located along the center of the road will be designed to reduced runoff velocity, allow for some infiltration, and target specified discharge regions along the infiltration berm. The swale will become an important design consideration in control the rate of runoff discharged onto the berm.

This BMP will help to reduce volume and rate entering the downstream watershed, allow eroded material upland to be deposited on the berm, and to slowly release runoff stored along the berm to the downstream watershed reducing erosion and sediment deposition.

BMP-232 Reach Road Infiltration Berms/Swales – The area along Reach Road is fairly flat and existing stormwater runoff from the roadway drains into the adjacent grassed areas before entering stormwater inlets that collect and discharge to Fox Hollow Run. This project is aimed at grading in swales along the side of the road and grading up the sides to promote infiltration and provide additional storage before discharging to the storm sewer system occurs.

The infiltration berms would be located on both sides of the road. The berms will be over excavated and an engineered media will be placed to help promote infiltration and reduce runoff volume and discharge rate.

BMP-L1 Loyalsock Township Street Sweeping – The use of mechanical, regenerative air, or vacuum filter sweepers will be used to conduct street sweeping along the roads of Loyalsock Township. The exact amount of time each road will be swept is dependent on pollutant loading to said road. The Township will target a street sweeping frequency of up to 26 times per year in the non-parsed Planning Area. A street sweeping program will be developed to prepare for parking restrictions and resident notification on when and which streets will be swept. A street sweeping route through the Township will be kept and the total curb mile swept will be tracked for each route.

BMP-L2 Loyalsock Township Inlet/Pipe Cleaning – Loyalsock Township will develop a maintenance program to directly remove sediment from inlets and pipe located throughout the Township. All material removed from these inlets will be properly disposed of to avoid migration back into the watershed. The Township will develop a method for tracking the mass or volume of sediment removed to be used for final computations of sediment and nutrient removal.

BMP-W1 Williamsport Street Sweeping - The use of mechanical, regenerative air, or vacuum filter sweepers will be used to conduct street sweeping along the roads of Williamsport. The exact amount of time each road will be swept is dependent on pollutant loading to said road. The City will target a street sweeping frequency of up to 26 times per year for targeted roads in the non-parsed Planning Area. A street sweeping program will be developed to prepare for parking restrictions and resident notification on when and which streets will be swept. A street sweeping route through the City will be kept and the total curb mile swept will be tracked for each route.

BMP-W2 Williamsport Inlet/Pipe Cleaning – The City of Williamsport will develop a maintenance program to directly remove sediment from inlets and pipe located throughout the Township. All material removed from these inlets will be properly disposed of to avoid migration back into the watershed. The City will develop a method for tracking the mass or volume of sediment removed to be used for final computations of sediment and nutrient removal.

Secondary Locations

BMP-244 Warrensville Road Wetland/Riparian Buffer – On the eastern side of Warrensville Road lies a frequently flooded parcel near Loyalsock Creek. This region is a low lying area adjacent to the Loyalsock Creek and receives stormwater drainage from local residential and forested areas to the west.

The project itself would consist of riparian buffer plantings along the low lying region and creation of hydrologically connected wetlands. The riparian buffer would provide both water quality benefits and reduce thermal impacts to the Loyalsock Creek. This area most likely contains wetlands due to the low lying area being directly connected to the Creek. If utilized as a project, the Township is proposing to improve and extend the assumed existing wetlands.

The extent of the proposed wetlands would be regraded for maximum retention of water. The area will be seeded and planted with species tolerant to constant inundation with extensive root systems for soil stability. Wetlands will be monitored for establishment, vegetative help, and erosive behavior during flooding conditions.

BMP-245 Mill Creek Bend Regenerative Stormwater Conveyance – This project would be located directly upstream from BMP-244. Stormwater from the adjacent development drains down the hill through an existing drainage ditch and into the existing floodplain of Loyalsock Creek. This project would reconstruct the existing eroding drainage path into a regenerative stormwater conveyance practice.

A regenerative stormwater conveyance project would consist of regrading the channel to include various steps, pools, check dams, riffle features, and other in channel features to help reduce the conveyance velocity and promote infiltration. The conveyance system will be seeded with a wet mix and water quality shrubbery planted along the length of the system. If implemented, the proposed conveyance system will further reduce stormwater runoff volume, reduce runoff rate, reduce sediment loading, promote nutrient reduction, and reduce thermal impacts to the Loyalsock Creek.

BMP-243 Sycamore Road/Haas Lane Stream Restoration or Regenerative Stormwater Conveyance – The Township has identified a length of stream in Bulls Run watershed for stream restoration or to convert the drainage path into a bioswale along. The approximate 400 feet segment is located directly south of Haas Lane and north of Lincoln Drive. The project type will be dependent on design factors assessed in the field during future project scoping.

If selected, restoration would consist of construction of instream features such as cross vanes or j-hook vanes. The floodplain would be reestablished as feasibly possible, legacy sediment will be removed, and a riparian buffer planted to aid in stabilizing the stream bed and banks and reintroducing a more natural stream channel system. Constructed features will aid in slowing stream velocity and sediment transport.

Incorporating native vegetation through the buffer will help reduce sediment load from runoff entering the stream and provide aquatic habitat, while reducing thermal impacts to the stream.

A regenerative stormwater conveyance project would consist of regrading the channel to include various steps, pools, check dams, riffle features, and other in channel features to help reduce the conveyance velocity and promote infiltration. The conveyance system would be seeded with a wet mix and water quality shrubbery planted along the length of the system.

BMP-207 Hoss's Parking Lot Subsurface Infiltration – Hoss's Restaurant located off of E. 3rd Street, is an almost entirely impervious lot besides a small front portion of the lot. Stormwater from this lot drains into inlets throughout the parking lot and connects to the drainage system on E. 3rd Street.

A subsurface infiltration system would be excavated under the existing parking lot. The existing inlets will connect to the facility. The infiltration system will be designed to create a localized groundwater recharge region. Perforated stormsewer pipes placed would be placed throughout the bed bottom to increase detention time and promote infiltration.

BMP-208 Giant Parking Lot Subsurface Infiltration – Directly north of BMP-207 is the Giant Food Store. The entire shopping center is impervious. Stormwater from this site drains into inlets located throughout the parking area. The stormsewer system from this parking lot connects directly to the drainage system discharging to Bull Run.

An option for retrofit stormwater management would be a subsurface infiltration system excavated under the existing Giant parking lot. The existing inlets will connect to the facility. The infiltration system will be designed to create a localized groundwater recharge region. This BMP will contain a stone bed and perforated stormsewer pipes to increase detention time and promote infiltration. An overflow device will be designed to convey large storm events.

BMP-241 Bull Run – Reed to Edercrest Stream Restoration - The Township has identified a length of Bull Run that could be eligible for stream restoration along a 400 foot segment from Reed Street to Edercrest Road.

A restoration would consist of construction of instream features such as cross vanes or j-hook vanes. The floodplain will be reestablished, legacy sediment will be removed, and a riparian buffer planted to aid in stabilizing the stream bed and banks and reintroducing a more natural stream channel system. Constructed features will aid in slowing stream velocity and sediment transport. Incorporating native vegetation through the buffer will help reduce sediment load from runoff entering the stream and provide aquatic habitat, while reducing thermal impacts to the stream.

BMP-242 Country Club at Lincoln Drive Wetland, Pond, or Regenerative Stormwater Conveyance – The Williamsport Country Club contains a driving range located to the east of Country Club Drive. Located within the driving range is an unnamed tributary to Bull Run. The type of project is dependent on agreements between the Township and the Country Club if this project is sought after.

Option 1: A regenerative stormwater conveyance project would consist of regarding the channel to include various steps, pools, check dams, riffle features, and other in channel features to help reduce the conveyance velocity and promote infiltration. The conveyance system will be seeded with a wet mix and water quality shrubbery planted along the length of the system. The proposed conveyance system would reduce stormwater runoff volume, reduce runoff rate, reduce sediment loading, promote nutrient reduction, and reduce thermal impacts to the Bull Run. This option would be ideal for this project as heavy bank erosion and undercutting can be seen throughout the reach segment. Additional floodplain storage could be added by grading in depressions around the stream segment. These additional storage areas will provide places for sediment deposition during high flow events, and help to reduce flooding in the downstream reach segment.

Option 2: Constructed wetlands could be created by excavating the floodplain regions surround the stream segment. This constructed wetland system will be hydrologically supplied through runoff to this region. The constructed wetland would consist of regrading existing land surface to promote ponding, native water quality vegetation to promote nutrient uptake, and dewatering mechanism for use during extreme flooding events.

BMP-211 Wilmont Drive Basin Retrofit – In between Wilmont Drive and the Susquehanna Beltway is an approximate 1.5 acre stormwater detention basin. The basin currently stores runoff from the lots located on Wilmont Drive, and discharges the water across the Susquehanna Beltway.

The existing basin could be retrofitted to accept additional runoff, promote infiltration, and improve water quality vegetation. A sediment forebay will be graded into the basin to establish a localized region of sediment deposition. An option is to construct a berm around the existing outlet endwall to store water within the basin to promote infiltration. The basin retrofit would assist in further reducing erosion by reducing the rate of runoff from the basin and its associated upstream drainage into Bull Run.

BMP-228 Faxon Circle Subsurface Infiltration – Located at the center of Faxon Circle is a landscaped area. The Township is proposing to construct a subsurface infiltration facility within this landscaped area. The facility could receive approximately 3.54 acres of drainage from the local residential lots though the redirection of the existing storm sewer system.

The existing inlets along Faxon Circle will drain into the subsurface infiltration system. The infiltration system will be designed to create a localized groundwater recharge region. This BMP will contain a stone bed and perforated stormsewer pipes to increase detention time and promote infiltration. An overflow device would be designed to convey large storm events such that the runoff rate is reduce as feasibly possible to mitigate the volume and rate of runoff entering the downstream stormsewer system.

BMP-222 Divine Providence Campus Subsurface Infiltration – The Divine Providence Hospital Campus is located along Grampian Boulevard and consists of several healthcare facilities and adjacent parking lots. The lot is mostly impervious with small portions of landscaped areas placed throughout the area. The parcel straddles the City/Township border and a proposed stormwater management system could involve installing a single or series of subsurface infiltration facilities within the parking lot. The facility will receive approximate 2.29 acres of drainage from the parking lot.

The parking lot inlets would be directed to drain into the subsurface infiltration system. The infiltration system will be designed to create a localized groundwater recharge region. This BMP will contain a stone bed which will be open graded clean stone and perforated pipes placed to increase detention time and promote infiltration. An overflow device will be designed to convey large storm events such that the runoff rate is reduced to mitigate the volume and rate of runoff entering the downstream stormsewer system.

BMPs-235/236 Grafius Run Infiltration/Detention Basins – Grafius Run is a watershed that is divided between the City and Township. The watershed runoff collects in Loyalsock Township and travels southward into the City of Williamsport and then enters a subsurface stream conveyance system. Where the stream enters at two locations in the City are areas of frequent flooding. The City has considered improvements to trash racks at these locations and additional runoff or streamflow control measures. At least two potential locations for either an infiltration or detention basin BMP have been identified along the stream before it enters the subsurface stream system. These basins would likely receive drainage from both City and Township areas from the local developments, roadway systems, and act as a flood control BMP during high flow conditions of Grafius Run.

If pursued, the proposed basins could provide a potential region of groundwater recharge and help to reduce both volume and peak flow discharge to the stream. An engineered outlet structure will be designed

to increase stormwater retention from smaller storm events to promote sediment reduction and water storage for further nutrient uptake and slowly release larger storm events into the stream to help reduce possibly erosion associated with high peak flow rates.

Since these basins will be located directly next to the stream, the bottom of the basins will most likely be around groundwater level. This basin will then be considered to be a detention basin. This basin will still contain water quality plantings but will mostly be used to reduce rate of the runoff to the stream. The basins could provide additional floodplain capacity helping to reduce extreme flooding events seen by the areas affected by flooding of the stream.

BMP-200 Cemetery Road Detention Basins – The drainage from the adjacent cemetery and upland forested area drains to a low lying area adjacent to Cemetery Road. This project is aimed at creating a detention basin within this area to promote stormwater storage and reduce peak flow rate to the downstream system.

BMP-231 Lycoming Valley Middle School Infiltration Basin/Regenerative Stormwater Conveyance - The Township had identified an area near Lycoming Valley Middle School where wet weather problems persist. South of the school is a drainage path to an unnamed tributary to Lycoming Creek that could be converted into an infiltration basin and/or a regenerative stormwater conveyance system.

The proposed infiltration basin would provide a localized area of groundwater recharge and help to reduce both volume and peak flow discharge to its downstream drainage area. The regenerative stormwater conveyance portion would consist of regrading the channel to include various steps, pools, check dams, riffle features, and other in channel features to help reduce the conveyance velocity and promote infiltration. The proposed infiltration basins/conveyance system could reduce stormwater runoff volume, reduce runoff rate, reduce sediment loading, promote nutrient reduction, and reduce thermal impacts to the Lycoming Creek.

BMP-233 Fox Hollow Run Regenerative Stormwater Conveyance – The City had identified the Fox Hollow Run area as having limited wet weather capacity. Previous reports have indicated a need to provide conveyance or storage to assist in managing runoff. A portion the stream has been identified with potential to convert at least a 400 foot segment of Fox Hollow Run into a regenerative stormwater conveyance system.

The regenerative stormwater conveyance project would consist of regarding the channel to include various steps, pools, check dams, riffle features, and other in channel features to help reduce the conveyance velocity, promote infiltration, and increase floodplain volume. The proposed conveyance system will further reduce stormwater runoff volume, reduce runoff rate, reduce sediment loading, and promote nutrient reduction to the Susquehanna River.

BMP-L3 Downspout Disconnection Enforcement in Loyalsock – The Township presently requires residents to disconnect all downspouts from discharging directly onto roads and stormsewer systems. Residents are required to discharge rooftop leaders onto vegetative areas and towards areas designed to receive stormwater as feasibly possible. The Township and Williamsport Sanitary Authority (WSA) could work together to verify disconnections and require corrective actions where necessary. WSA already tracks similar information as part of the combined sewer overflow management program and could expand the program to its entire service area, including Loyalsock Township MS4 areas.

BMP-W3 Downspout Disconnection Enforcement in Williamsport – The City presently requires residents to disconnect all downspouts from discharging directly onto roads and into stormsewer systems. Residents are required to discharge rooftop leaders onto vegetative areas and towards areas designed to receive stormwater as feasibly possible. WSA already tracks similar information as part of the combined sewer overflow management program and could expand the program to its entire service area, including City MS4 areas.

Street Sweeping and Catch Basin Calculations

STREET SWEEPING CALCULATION

Impervious area of streets swept 26 times a year:

Williamsport: 28.1 acres

Loyalsock: 306.5 acres

Swept Street Area x Pollutant Load TSS (lbs/yr) (area weighted load from Model My Watershed output)

Williamsport: $28.1 \text{ acre} \times 1,963 \text{ lbs/acre} = 55,201 \text{ lbs/yr}$

Loyalsock: $306.5 \times 1,438 \text{ lbs/acre} = 440,747 \text{ lbs/yr}$

Street Sweeping BMP effectiveness = 9%

Crediting calculation

Williamsport: $55,201 \text{ lbs/yr} \times 0.09 = 4,968 \text{ lbs/yr}$

Loyalsock: $440,747 \text{ lbs/yr} \times .09 = 27,767 \text{ lbs/yr}$

CATCH BASIN CALCULATION

Williamsport: assume catch basins cleaned in same area as street sweeping 1x year

Assume approximately 30% of street sweeping load removed through inlet cleaning

$4,968 \text{ lbs/yr} \times 30\% = 1,490 \text{ lbs/yr}$

Dry weights will be verified according to expert panel protocols.

Loyalsock: assume catch basins cleaned in same area as street sweeping

1x per permit cycle (20% of system per year)

Assume approximately 30% of street sweeping load removed through inlet cleaning

$27,767 \text{ lbs/yr} \times 20\% \times 30\% = 1,666 \text{ lbs/yr}$

Dry weights will be verified according to expert panel protocols.

STREAM RESTORATION PROJECT ELIGIBILITY REVIEW

General Project Information

Date:	9/18/2020
County:	Lycoming
Municipality:	Loyalsock Township
Street Address:	2301 Northway Road, Williamsport, PA 17701
Google Map Location Screenshot:	
Stream Restoration Length:	425 LF
Both Sides of Stream:	Yes ☒ No ☐
PRP BMP ID:	BMP-237
PRP BMP Name:	Millers Run at James Short Park Stream Restoration
Order Stream:	1 st ☒ 2 nd ☐ 3 rd ☐ Larger than 3 rd ☐ ¹
Stream Channel Length:	>100 LF ☒ <100 LF ☐ ²
Both Sides of Channel to Realize Restoration Improvement:	Yes ☒ No ☐ Forested buffer exists on right bank, stream corridor will be re-routed to ensure erosive forces are reduced which will require more work on left bank.
Impervious Cover Rate Control Structures In Place:	Yes ☒ No ☐ Narrative Explanation: Stormwater controls are identified for areas adjacent to the project area and from residential developments to the west. These are identified as BMPs 250, 251, and 238.

¹ PADEP site visit may be warranted to confirm eligibility

² Project ineligible

Eligibility Review

SITING

Existing channel/ streambank
erosion pics:

Right Bank



Left Bank looking upstream



Right Bank



Left Bank looking downstream



PRELIMINARY TECHNIQUES	
Streambed Stability:	Cross vanes (rock) ☒ Cross vanes (wood) ☐ Grade control structure ☐ Pool/rifle system rehabilitation ☒
Streambank Stability:	Cuttings, live stakes ☒ Brush mattresses ☐ Fascines/wattles ☐ Reed roll ☐ Geotextile ☐ Tree revetment ☒ Instream deflector (rock) ☒ Instream deflector (wood) ☐ Embankment reshaping ☒
Floodplain Reconnection:	Legacy sediment removal ☒ ³ Embankment reshaping ☒ Target slope: 1:1 ☐ 2:1 ☐ 3:1 ☒ >3:1 ☐
Streambank Armoring:	Yes ☐ No ☒
Existing Riparian Buffer Width to Remain:	At least 35 LF on left bank; right bank is forested.

City of Williamsport & Loyalsock Township Chesapeake Bay Joint Pollutant Reduction Plan

Little Bear Creek-Loyalsock Creek Proposed BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)	
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load	lbPerTP_Load	lbPerTN_Load	lbPerTSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction	TSS_Reduction_lbPerY	TSS_Reduction_tonPeY	TP_Reduction	TN_Reduction
Warrensville Road Wetland	BMP-244	ST	Proposed		Ld_Mixed	0.52	0.10			0.08	0.66		0.66	15.0%	271.68	0.10	0.33	60.2%	47.3%	30.1%	163.47	0.08	0.05	0.10	
Warrensville Road Wetland	BMP-244	ST	Proposed		Md_Mixed	8.86	0.34			4.61	0.66		0.66	52.0%	14,392.57	5.94	18.25	60.2%	47.3%	30.1%	8,660.29	4.33	2.81	5.49	
Mill Creek Bend	BMP-245	RR	Proposed		Ld_Mixed	0.19	0.09			0.03	0.57		0.57	15.0%	99.28	0.04	0.12	60.1%	56.1%	48.1%	59.65	0.03	0.02	0.06	
Mill Creek Bend	BMP-245	RR	Proposed		Md_Mixed	3.24	0.30			1.68	0.57		0.57	52.0%	5,259.29	2.17	6.67	60.1%	56.1%	48.1%	3,160.22	1.58	1.22	3.21	
Mountain Crescent	BMP-246	RR	Proposed		Ld_Mixed	0.33	0.09			0.05	0.57		0.57	15.0%	171.94	0.06	0.21	60.1%	56.1%	48.1%	103.32	0.05	0.03	0.10	
Mountain Crescent	BMP-246	RR	Proposed		Md_Mixed	5.61	0.30			2.92	0.57		0.57	52.0%	9,108.73	3.76	11.55	60.1%	56.1%	48.1%	5,473.29	2.74	2.11	5.55	
Sand Hill Rd	BMP-204	RR	Proposed		Md_Mixed	3.63	0.80			1.89	1.54		1.54	52.0%	5,892.44	2.43	7.47	81.8%	76.3%	65.3%	4,820.76	2.41	1.85	4.88	
Robbins Rd	BMP-205	RR	Proposed		Ld_Mixed	29.31	0.19			4.40	1.25		1.25	15.0%	15,444.87	5.57	18.76	79.0%	73.7%	63.0%	12,203.37	6.10	4.10	11.82	
Quarry Rd	BMP-226	RR	Proposed		Ld_Mixed	0.26337	0.15			0.04	1.00		1.00	15.0%	138.78	0.05	0.17	74.9%	69.9%	59.8%	103.96	0.05	0.03	0.10	
Quarry Rd	BMP-226	RR	Proposed		Open_Land	8.51563				0.00	#N/A		1.00	0.0%	2,380.49	2.47	10.64	74.9%	69.9%	59.8%	1,783.23	0.89	1.73	6.36	

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
ADD ROWS by right-clicking a row number inside the Table, and chosing "Insert". This will automatically copy formulas and update links throughout this workbook.

	Cells requiring user input for all BMPs
	Cells requiring user input for BMP efficiencies calculated using Performance Standard approach
	Cells requiring user input for non-Performance Standard BMPs (e.g., streambank stabilization and street sweeping)
	Cell values calculated based on user input
	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

287368.8 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
10564.3 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas.
Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	44.44
Cropland	69.14
Wooded Areas	148.15
Wetlands	17.28
Open Land	-
Barren Areas	2.47
Low-Density Mixed	209.88
Medium-Density Mixed	22.22
High-Density Mixed	4.94
Total	518.52

TOTAL LBS REDUCED36,531.5618.2713.9537.66

Existing TOTAL LBS REDUCED- - - -

Proposed TOTAL LBS REDUCED36,531.5618.2713.9537.66

Project Name	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-
	LBS REDUCED	-	-	-	-

Millers Run Proposed BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

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Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load	lbPerTP_Load	lbPerTN_Load	TSS_ReductionET	TP_ReductionET	TN_ReductionET	TSS_ReductionETSS_Reduction	lbPerY_TSS_Reduction	TSS_Reduction_tonPerTP_Reduction	TP_Reduction_tonPerTN_Reduction
Cemetery Road (Detention Basin)	BMP-200	RR	Proposed		Ld_Mixed	12.67	0.08			1.90	0.53		0.53	15.0%	6,651.82	2.03	7.60	58.0%	54.2%	46.4%	3,859.92	1.93	1.10	3.53
Cemetery Road (Detention Basin)	BMP-200	RR	Proposed		Open_Land	47.65				0.00	1.00	1.00	1.00	0.0%	17,890.68	7.62	53.37	74.9%	69.9%	59.8%	13,401.91	6.70	5.33	31.89
Becht School (Underground Infiltration)	BMP-201	RR	Proposed		Hd_Mixed	2.56	1.72			2.23	1.98		1.98	87.0%	3,844.98	1.38	6.71	83.9%	78.1%	66.8%	3,225.67	1.61	1.08	4.48
WindField Dr Roadside Infiltration	BMP-202	RR	Proposed		Ld_Mixed	9.41	0.44			1.41	2.50		2.50	15.0%	4,941.39	1.51	5.65	84.9%	78.8%	67.7%	4,195.15	2.10	1.19	3.82
WindField Dr Roadside Infiltration	BMP-203	RR	Proposed		Ld_Mixed	15.11	0.44			2.27	2.50		2.50	15.0%	7,934.58	2.42	9.07	84.9%	78.8%	67.7%	6,736.31	3.37	1.91	6.14
WindField Dr Roadside Infiltration	BMP-220	RR	Proposed		Ld_Mixed	2.42	0.15			0.36	1.00		1.00	15.0%	1,270.79	0.39	1.45	74.9%	69.9%	59.8%	951.95	0.48	0.27	0.87
WindField Dr Roadside Infiltration	BMP-221	RR	Proposed		Ld_Mixed	18.04	0.15			2.71	1.00		1.00	15.0%	9,473.19	2.89	10.82	74.9%	69.9%	59.8%	7,096.36	3.55	2.02	6.47
Hoss's	BMP-207	RR	Proposed		Hd_Mixed	2.00	0.87			1.74	1.00		1.00	87.0%	3,003.89	1.08	5.24	74.9%	69.9%	59.8%	2,250.22	1.13	0.75	3.13
Giant (Underground Infiltration)	BMP-208	RR	Proposed		Hd_Mixed	8.44	0.87			7.34	1.00		1.00	87.0%	12,676.42	4.56	22.11	74.9%	69.9%	59.8%	9,495.91	4.75	3.19	13.21
Saint Ann's	BMP-209	RR	Proposed		Md_Mixed	2.64	0.87			1.37	1.67		1.67	52.0%	2,785.59	1.11	5.89	82.7%	77.1%	66.0%	2,303.57	1.15	0.85	3.88
Wilmont Dr	BMP-211	RR	Proposed		Hd_Mixed	2.98	0.87			2.59	1.00		1.00	87.0%	4,475.80	1.61	7.81	74.9%	69.9%	59.8%	3,352.82	1.68	1.12	4.67
Ruby Tuesday/Harley Davidson	BMP-215	RR	Proposed		Ld_Mixed	0.44	0.15			0.07	1.00		1.00	15.0%	231.74	0.07	0.26	74.9%	69.9%	59.8%	173.59	0.09	0.05	0.16
Ruby Tuesday/Harley Davidson	BMP-215	RR	Proposed		Md_Mixed	3.97	0.52			2.07	1.00		1.00	52.0%	4,190.74	1.67	8.86	74.9%	69.9%	59.8%	3,139.28	1.57	1.17	5.29
Northwood Dr Roadside	BMP-216	RR	Proposed		Ld_Mixed	13.18	0.15			1.98	1.00		1.00	15.0%	6,921.10	2.11	7.91	74.9%	69.9%	59.8%	5,184.59	2.59	1.47	4.73
Northwood Dr Roadside	BMP-219	RR	Proposed		Ld_Mixed	1.63	0.15			0.24	1.00		1.00	15.0%	855.95	0.26	0.98	74.9%	69.9%	59.8%	641.19	0.32	0.18	0.58
Northwood Dr Roadside	BMP-230	RR	Proposed		Ld_Mixed	8.33	0.50			1.25	2.50		2.50	15.0%	4,374.26	1.33	5.00	84.9%	78.8%	67.7%	3,713.66	1.86	1.05	3.38
Divine Providence Campus	BMP-222	RR	Proposed		Hd_Mixed	2.29	0.87			1.99	1.00		1.00	87.0%	3,439.46	1.24	6.00	74.9%	69.9%	59.8%	2,576.50	1.29	0.86	3.58
Faxon Bowling Lanes	BMP-223	RR	Proposed		Hd_Mixed	1.81	0.87			1.57	1.00		1.00	87.0%	2,718.52	0.98	4.74	74.9%	69.9%	59.8%	2,036.44	1.02	0.68	2.83
Valley Heights/Loyalsock Community Center	BMP-224	RR	Proposed		Ld_Mixed	20.58	0.15			3.09	1.00		1.00	15.0%	10,806.96	3.29	12.35	74.9%	69.9%	59.8%	8,095.50	4.05	2.30	7.38
Valley Heights/Loyalsock Community Center	BMP-224	RR	Proposed		Md_Mixed	24.16	0.13			12.56	0.25		0.25	52.0%	25,491.41	10.15	53.87	34.9%	32.6%	27.9%	8,897.26	4.45	3.31	15.04
Faxon Circle	BMP-228	RR	Proposed		Md_Mixed	3.24	0.50			1.68	0.96		0.96	52.0%	3,418.68	1.36	7.23	74.1%	69.1%	59.1%	2,532.61	1.27	0.94	4.27
Sycamore Road Outlet	BMP-229	RR	Proposed		Ld_Mixed	4.16	0.15			0.62	1.00		1.00	15.0%	2,182.98	0.67	2.49	74.9%	69.9%	59.8%	1,635.27	0.82	0.46	1.49
Sycamore Road Outlet	BMP-229	RR	Proposed		Md_Mixed	0.46	0.52			0.24	1.00		1.00	52.0%	487.37	0.19	1.03	74.9%	69.9%	59.8%	365.09	0.18	0.14	0.62
Cameo Estates to Northway	BMP-238	RR	Proposed		Md_Mixed	0.97	0.13			0.51	0.25		0.25	52.0%	1,028.33	0.41	2.17	34.9%	32.6%	27.9%	358.92	0.18	0.13	0.61
Cameo Estates to Northway	BMP-238	RR	Proposed		Hd_Mixed	47.75	0.22			41.55	0.25		0.25	87.0%	71,724.55	25.79	125.12	35.2%	32.9%	28.2%	25,258.86	12.63	8.48	35.25
Cameo-Short Park	BMPs-250,251	RR	Proposed		Ld_Mixed	6.64	0.15			1.00	1.00		1.00	15.0%	3,485.34	1.06	3.98	74.9%	69.9%	59.8%	2,610.87	1.31	0.74	2.38
Cameo-Short Park	BMPs-250,251	RR	Proposed		Md_Mixed	0.20	0.52			0.10	1.00		1.00	52.0%	210.28	0.08	0.44	74.9%	69.9%	59.8%	157.52	0.08	0.06	0.27
Cameo-Short Park	BMPs-250,251	RR	Proposed		Open_Land	1.10						1.00	1.00	0.0%	411.67	0.18	1.23	74.9%	69.9%	59.8%	308.38	0.15	0.12	0.73
Ravine Road	BMP-234	RR	Proposed		Ld_Mixed	20.00	0.15			3.00	1.00		1.00	15.0%	10,502.42	3.20	12.00	74.9%	69.9%	59.8%	7,867.37	3.93	2.24	7.17
Grafius Run	BMPs-235, 236	RR	Proposed		Ld_Mixed	40.00	0.50			6.00	2.50		2.50	15.0%	21,004.85	6.40	24.00	84.9%	78.8%	67.7%	17,832.72	8.92	5.04	16.25
PennVale	BMP-240	RR	Proposed		Ld_Mixed	33.92	0.23			5.09	1.50		1.50	15.0%	17,809.94	5.43	20.35	81.5%	76.0%	65.0%	14,517.66	7.26	4.13	13.23
PennVale	BMP-240	RR	Proposed		Md_Mixed	0.67	0.78			0.35	1.49		1.49	52.0%	701.69	0.28	1.48	81.4%	75.9%	65.0%	571.43	0.29	0.21	0.96
Reed Street Wetland	BMP-241	RR	Proposed		Ld_Mixed	69.20	0.08			10.38	0.53		0.53	15.0%	36,338.39	11.07	41.52	54.2%	50.0%	46.4%	21,086.44	10.54	6.00	19.28
Reed Street Wetland	BMP-241	RR	Proposed		Md_Mixed	2.44	0.26			1.27	0.50		0.50	52.0%	2,572.45	1.02	5.44	56.0%	52.3%	44.8%	1,440.59	0.72	0.54	2.44
Millers Run at Short Park	BMP-237	Stream Restoration	Proposed					425		#N/A	#N/A		#N/A	#N/A	#N/A	#N/A	#N/A	0.0%	0.0%	0.0%	48,875.00	24.44	73.95	81.60
Hidden Valley	BMP-239	RR	Proposed		Hd_Mixed	24.81	0.87			21.58	1.00		1.00	87.0%	37,257.27	13.40	64.99	74.9%	69.9%	59.8%	27,909.42	13.95	9.36	38.83
Sycamore Road / Haas Lane	BMP-243	RR	Proposed		Md_Mixed	5.7	0.26			2.96	0.50		0.50	52.0%	6,014.35	2.39	12.71	56.0%	52.3%	44.8%	3,368.07	1.68	1.25	5.70
Bull Run - Reed to Edercrest	BMP-241	Stream Restoration	Proposed					400		#N/A	#N/A		#N/A	#N/A	#N/A	#N/A	#N/A	0.0%	0.0%	0.0%	46,000.00	23.00	69.60	76.80
Country Club at Lincoln Drive	BMP-242	RR	Proposed		Ld_Mixed	11	0.08			1.65	0.53		0.53	15.0%	5,776.33	1.76	6.60	58.0%	54.2%	46.4%	3,351.89	1.68	0.95	3.06

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
ADD ROWS by right-clicking a row number inside the Table, and choosing "Insert". This will automatically copy formulas and update links throughout this workbook.

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	Cells requiring user input for non-Performance Standard BMPs (e.g., streambank stabilization and street sweeping)
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	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input

175000.0 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
67486.9 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas.
Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	340.74
Cropland	69.14
Wooded Areas	720.99
Wetlands	56.79
Open Land	2.47
Barren Areas	2.47
Low-Density Mixed	3,244.44
Medium-Density Mixed	864.20
High-Density Mixed	437.04
Total	5,738.27

TOTAL LBS REDUCED	317,375.92	158.69	214.23	436.01
Existing TOTAL LBS REDUCED	-	-	-	-
Proposed TOTAL LBS REDUCED	317,375.92	158.69	214.23	436.01
Project Name				
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-

Lycoming Creek-West Branch Susquehanna River Proposed BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area.
If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row.
Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name.
If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac).
Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) - Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	impervFraction	TSS_Load_lbPer	TP_Load_lbPer	TN_Load_lbPer	TSS_ReductionE	TP_ReductionE	TN_ReductionE	TSS_Reduction_lbPerY	TSS_Reduction_tonPe	TP_Reduction_lbPerY	TN_Reduction_lbPerY
Lycoming Valley Middle School	BMP-231	RR	Proposed		Ld_Mixed	10.00	0.08			1.50	0.53		0.53	15.0%	4,540.36	1.40	5.90	58.0%	54.2%	46.4%	2,634.68	1.32	0.76	2.74

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
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	Optional user input for treatment depth in non-developed areas (e.g., cropland)
	Optional user input
245767.7	Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
25065.6	Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas.
Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

SOURCE	AREA (acres)
Hay/Pasture	175.31
Cropland	12.35
Wooded Areas	301.23
Wetlands	24.69
Open Land	4.94
Barren Areas	-
Low-Density Mixed	738.27
Medium-Density Mixed	249.38
High-Density Mixed	64.20
Total	1,570.37

TOTAL LBS REDUCED2,634.681.320.762.74

Existing TOTAL LBS REDUCED- - - -

Proposed TOTAL LBS REDUCED2,634.681.320.762.74

Project Name				
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-

Quenshukeny Run Proposed BMP Pollutant Load Reductions

Urban BMP Load Reduction Calculation Table

INSTRUCTIONS: Each row in the table below can represent either different areas of land use/cover within a single planning area (e.g., municipality), or different BMP drainage areas within a given planning area. If an individual planning area has multiple "developed land" types, each type can be represented in separate rows, with each row having the same "Project Name". If it is assumed that the planning area is being reated by one BMP system, then the "Treatment Depth" should be the same for each row. Similarly, a given planning area can have multiple "BMP drainage areas" (i.e., areas treated by different BMP systems). If a BMP drainage area has multiple "developed land" types, separate "land use areas" can be represented on separate rows, with each row having the same "Project Name". Also, the treatment depth should be the same for any row associated with the same Project Name. If runoff from a land use/cover type with NO impervious cover (e.g., Cropland) is treated by a BMP system (either existing or proposed), use the Manual Override (column M) to type in the treatment depth (in/imp. ac). Examples of various options for characterizing different types of project areas are provided in the "Example" spreadsheet that is also available for downloading from the Model My Watershed site.

Project Name	BMP Name	BMP Type	Existing or Proposed	Year Installed	MapShed Land Cover of Drainage Area	Drainage Area (ac)	Treatment Depth (in)	Stream Restoration* Length (ft) - Qualified projects only	Street Sweeping* Road Length Swept (ft) - Qualified projects only	Impervious Area (ac)	Treatment Depth (in/imp. ac)	Treatment Depth (in/imp. ac) Manual Override - use if no impervious area	Effective Treatment Depth (in/imp. ac)	Impervious (%)	TSS Load (lbs/yr)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Reduction (%)	TP Reduction (%)	TN Reduction (%)	TSS Reduction (lbs/yr)	TSS Reduction (tons/yr)	TP Reduction (lbs/yr)	TN Reduction (lbs/yr)
Project_name	BMP_name	BMP_type	Existing?	YearInstalled	drainageLandCoverClass	drainageArea_ac	treatmentDepth_in	lengthTreatedStream_ft	lengthTreatedRoad_ft2	impervArea_ac	treatmentDepthNormalized	treatmentDepthNorm	treatmentDepthNorm	imperuFraction	TSS_Load	IbPerTP_Load	IbPerTN_Load	TSS_Reduction	TP_Reduction	TN_Reduction	TSS_Reduction_IbPerY	TSS_Reduction_tonPeY	TP_Reduction_IbPerY	TN_Reduction_IbPerY
Reach Road	BMP-232	RR	Proposed		Hd_Mixed	3	1.00			2.61	1.15		1.15	87.0%	6,084.06	1.95	7.29	77.6%	72.4%	61.9%	4,719.55	2.36	1.41	4.51
Fox Hollow Run	BMP-233	RR	Proposed		Md_Mixed	84	0.05			43.68	0.10		0.10	52.0%	110,206.57	39.48	183.12	15.0%	14.0%	11.8%	16,559.14	8.28	5.54	21.60

NOTE: the above table is an Excel Table, which has special features. <https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>
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	Optional user input

261515.8 Available stream length (ft) in Non-Ag Areas in the entire watershed (from MMW Output tab)
14796.6 Available stream length (ft) in Non-Ag Areas in the smaller target area (from MMW Output tab)

Note: The use of the "Stream Restoration" BMP type in this tab is only for streams associated with developed land areas. Stream Restoration activities in agricultural areas should be addressed separately in the "Agricultural BMPs" tab.

Land Use/Cover Distribution for the Smaller Urban Planning Area

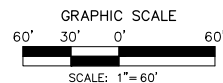
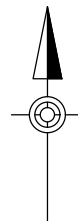
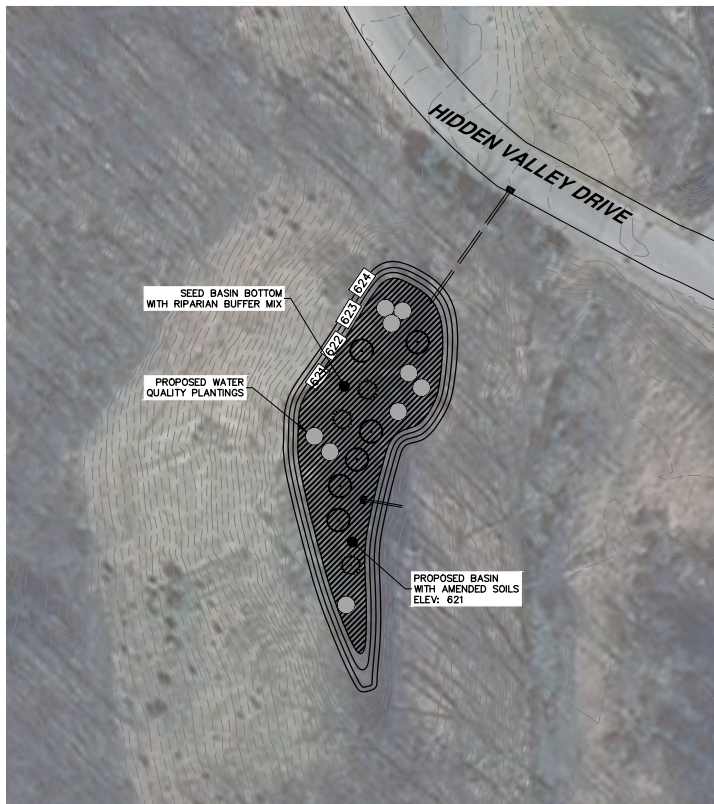
SOURCE	AREA (acres)
Hay/Pasture	175.31
Cropland	9.88
Wooded Areas	372.84
Wetlands	69.14
Open Land	-
Barren Areas	-
Low-Density Mixed	718.52
Medium-Density Mixed	377.78
High-Density Mixed	187.65
Total	1,911.11

TOTAL LBS REDUCED21,278.6910.646.9526.11

Existing TOTAL LBS REDUCED- - - -

Proposed TOTAL LBS REDUCED21,278.6910.646.9526.11

Project Name				
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-
LBS REDUCED	-	-	-	-



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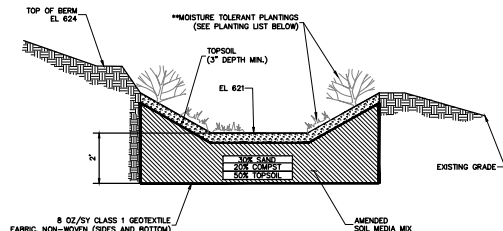
300 East Park Drive
Warrington, PA 17211
877-279-5666
Fax 717-566-1139
hrghq@hrg.com
www.hrginc.com

LOYALSOCK TOWNSHIP
2501 EAST THIRD STREET
WILLIAMSPORT, PA 17701

HIDDEN VALLEY BASIN CONCEPT PLAN
FOR
WILLIAMSPORT/ LOYALSOCK JOINT PRP

PROJ. MGR. - MV
DESIGN - ILU
CADD - ILU
CHECKED -
SCALE - AS SHOWN
DATE - JULY 2020

DRAWING NO.
EXH-01
SHEET NO.
01 OF 06
PROJECT R003405.0431



SOIL AMENDMENT DETAIL
NOT TO SCALE

BASIN RETROFIT PLANTINGS SPECIES LIST

PLANTING REQUIREMENTS:
A MIX OF THE FOLLOWING PLANTS ARE ACCEPTABLE FOR USE IN THE BASIN RETROFIT. PLANTING SHALL BE ESTABLISHED AT THE FOLLOWING PERCENTAGES OF TOTAL SURFACE AREA IN THE FACILITY:

- 40% SHRUBS
- 20% FLOWERS
- 20% TREES
- 10% GRASSES

FLOWERS:

WILD COLUMBINE
WOOD GERANIUM
COMMON MILKWEED
PHLOX
SUNFLOWER
COMMON BLUE WOLET
PARTWINE-BERRY
VIRGINIA BLUEBELL
MAY-APPLE
SARGOL FLOWER
TRILLIUM
FOXGLOVE BEARDTONGUE
SWAMP DUNFLOWER
SWAMP MILKWEED
DOGWOOD DAISY/
SWEETWILLOW
MOUSE-EARED TOXICOD
BLACK-EYED SOYAN
MARSH BLAZING STAR
JACK-IN-THE-BULBET
FLYING FIBROSE
WINE ENGLAND ASTER
SPIDERWORT
SHALER'S JOY/ BLUE
WYVIAN
BONSET
GOLDENROD
GREAT BLUE LOBELIA
EASTERN JOCKEY WEED
CONFLOWER

TREES:

RED MAPLE
TULIP POPLAR
AMERICAN BEECH
WHITE OAK
BLACK BIRCH
SUGAR MAPLE
EASTERN WHITE PINE
STYACOME
RED OAK
YELLOW BIRCH

GRASSES:

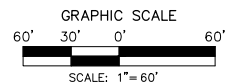
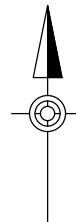
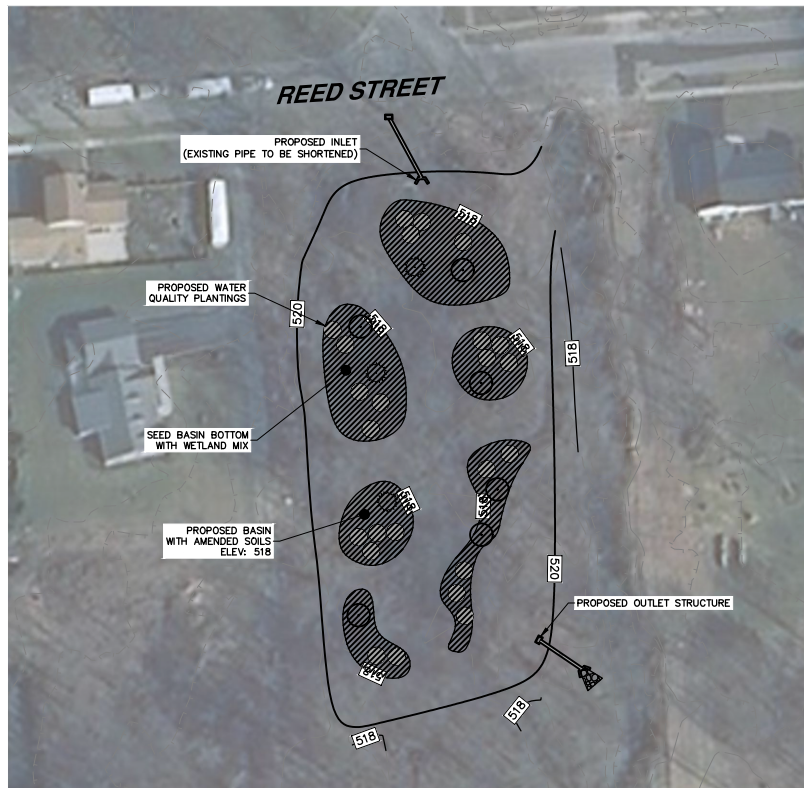
STYET BLUE-EYED GRASS
VIRGINIA WILD RYE
SWITCH GRASS
INDIAN GRASS
BOTTLEBRUSH GRASS
LURD GRASS
BIG BLUESTEM
LITTLE BLUESTEM

MINIMUM PLANTING SIZES:
GRASSES: NO. 1 CONTAINER
FLOWERS: NO. 2 CONTAINER
SHRUBS: 24"-36" BALL AND BURLAP
ORNAMENTAL TREES: 1.5"-2" CALIPER

SEEDING SCHEDULE

APPLICATION	SPECIES	%PURE LIVE SEED	APPLICATION RATE	FERTILIZER	LIMING RATE	SEEDING DATE
TEMPORARY (PENNDOT FORMULA E)	ANNUAL RYE	88.2%	10 LBS./1000 SY	5-5-5 AT 207 LBS./1000 SY	413 LBS./1000 SY	3/15 TO 10/15
ERNST SEED MIX (ERNMX-178)	RIPARIAN BUFFER MIX	100%	4 LBS./1000 SY	NOT RECOMMENDED	NOT RECOMMENDED	1/1 TO 8/1 (DRY SITES) AND 8/1 TO 1/1 (MOIST SITES)

- FERTILIZER SHALL BE APPLIED IN ACCORDANCE WITH A SOIL TEST. IN THE ABSENCE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AS FOLLOWS:
 - 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT 140 LBS./1000 S.Y.
 - 38-0-0 UREA FORM FERTILIZER AT 50 LBS./1000 S.Y.
 - 32-0-0 TO 38-0-0 SULFUR COATED UREA FERTILIZER AT 59-50 LBS./1000 S.Y.
 - 31-0-0 MBU FERTILIZER AT 81 LBS./1000 S.Y.
- SPECIFICATION ITEMS OBTAINED USING PENNDOT PUBLICATION NO. 408
- ALL SEEDING AREAS SHALL BE MULCHED WITH HAY OR STRAW APPLIED AT A RATE OF 6000 LBS./AC. (1240 LBS./1000 S.Y.), MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER AT 750 LBS./AC. OR EQUAL.
- ALL AREAS RECEIVING SEEDING SHALL HAVE A MINIMUM OF 8" OF ORGANIC TOPSOIL.
- 70% UNIFORM VEGETATED COVER IS REQUIRED FOR ACCEPTANCE.
- PERENNIAL RYEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.
- KENTUCKY BLUEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.



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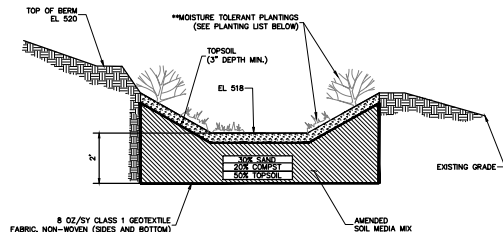
300 East Park Drive
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 F 717 566-1180
 hrg@hrginc.com
 www.hrginc.com

LOYALSOCK TOWNSHIP
 2501 EAST THIRD STREET
 WILLIAMSPORT, PA 17701

REED STREET WETLAND CONCEPT PLAN DETAILS
 FOR
 WILLIAMSPORT/ LOYALSOCK JOINT PRP

PROJ. MGR. - MV
 DESIGN - ILU
 CADD - ILU
 CHECKED -
 SCALE - AS SHOWN
 DATE - JULY 2020

DRAWING NO.
EXH-04
 SHEET NO.
04 OF 06
 PROJECT R003405.0431



SOIL AMENDMENT DETAIL
NOT TO SCALE

BASIN RETROFIT PLANTINGS SPECIES LIST

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- 40% SHRUBS
- 20% FLOWERS
- 20% TREES
- 10% GRASSES

FLOWERS:

WILD COLUMBINE
WOOD GERANIUM
COMMON MILKWEED
PHLOX
SUNFLOWER
COMMON BLUE WOLET
PARTWINE-BERRY
VIRGINIA BLUEBELL
MAY-APPLE
SARGOL FLOWER
TRILLIUM
FOXGLOVE BEARDTONGUE
SWAMP DUNFLOWER
DOGWOOD DAISY/
SWEETWILLOW
MOUSE-EARED TOXICOD
BLACK-EYED SOYAN
MARSH BLAZING STAR
JACK-IN-THE-BULPIT
FLYING FISHPOUSE
WINE ENGLAND ASTER
SPIDERWORT
SHALER'S JOY/ BLUE
VIRGINIA
BONENSET
GOLDENROD
GREAT BLUE LOBELIA
EASTERN JOCKEY WEED
CONFLOWER

TREES:

RED MAPLE
TULIP POPLAR
AMERICAN BEECH
WHITE OAK
BLACK BIRCH
SUGAR MAPLE
EASTERN WHITE PINE
STYACOMA
RED OAK
YELLOW BIRCH

GRASSES:

STYET BLUE-EYED GRASS
VIRGINIA WILD RYE
SWITCH GRASS
INDIAN GRASS
BOTTLEBRUSH GRASS
LURD GRASS
BIG BLUESTEM
LITTLE BLUESTEM

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ORNAMENTAL TREES: 1.5"-2" CALIPER

SEEDING SCHEDULE

APPLICATION	SPECIES	PURE LIVE SEED	APPLICATION RATE	FERTILIZER	LIMING RATE	SEEDING DATE
TEMPORARY (PENNDOT FORMULA E)	ANNUAL RYE	88.2%	10 LBS./1000 SY	5-5-5 AT 207 LBS./1000 SY	413 LBS./1000 SY	3/15 TO 10/15
ERNST SEED MIX (ERNMX-178)	RIPARIAN BUFFER MIX	100%	4 LBS./1000 SY	NOT RECOMMENDED	NOT RECOMMENDED	1/1 TO 8/1 (DRY SITES) AND 8/1 TO 1/1 (MOIST SITES)

- FERTILIZER SHALL BE APPLIED IN ACCORDANCE WITH A SOIL TEST. IN THE ABSENCE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AS FOLLOWS:
 - 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT 140 LBS./1000 S.Y.
 - 38-0-0 UREA FORM FERTILIZER AT 50 LBS./1000 S.Y.
 - 32-0-0 TO 38-0-0 SULFUR COATED UREA FERTILIZER AT 59-50 LBS./1000 S.Y.
 - 31-0-0 MBU FERTILIZER AT 81 LBS./1000 S.Y.
- SPECIFICATION ITEMS OBTAINED USING PENNDOT PUBLICATION NO. 408
- ALL SEEDING AREAS SHALL BE MULCHED WITH HAY OR STRAW APPLIED AT A RATE OF 6000 LBS./AC. (1240 LBS./1000 S.Y.), MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER AT 750 LBS./AC. OR EQUAL.
- ALL AREAS RECEIVING SEEDING SHALL HAVE A MINIMUM OF 8" OF ORGANIC TOPSOIL.
- 70% UNIFORM VEGETATED COVER IS REQUIRED FOR ACCEPTANCE.
- PERENNIAL RYEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.
- KENTUCKY BLUEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.

APPENDIX G: Municipal Agreement for CBPRP

Memorandum of Understanding:
City of Williamsport and Loyalsock Township
for the Joint Chesapeake Bay Pollution Reduction Plan

THIS AGREEMENT ("AGREEMENT") is made on September 27, 2018 by and between the City of Williamsport (hereinafter referred to as the "CITY"), a city of the third operating under the laws of the Commonwealth of Pennsylvania, and the Township of Loyalsock (hereinafter referred to as the "TOWNSHIP"), a township of the second operating under the laws of the Commonwealth of Pennsylvania.

WHEREAS, the CITY and TOWNSHIP have entered into a partnership to prepare and submit a Joint Pollution Reduction Plan (PRP) in accordance with the Pennsylvania Department of Environmental Protection (PA DEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PAI134808.

WHEREAS, upcoming application to renew the NPDES permit, due October 2, 2018, requires development and submittal of a Chesapeake Bay PRP (CBPRP) to the PA DEP.

WHEREAS, this AGREEMENT is consistent with DEP requirements as outlined in the NPDES Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) PRP Instructions 3800-PM-BCW0100k dated March 2017.

WHEREAS, Larson Design Group was selected by the City and the Township to prepare this Joint CBPRP as attached to this AGREEMENT.

NOW, THEREFORE in accordance with DEP requirements, the CITY and TOWNSHIP agree to the following:

1. SCOPE OF THE AGREEMENT

Larson Design Group has completed the CBPRP in accordance with renewal requirements of the Individual NPDES Permit No. PAI134808, which expires March 31, 2019. This permit authorizes Stormwater discharge subject to the provisions of the Clean Water Act (CWA) 33U.S.C. Section 1251 et seq. in Pennsylvania's Clean Water Stream Law, as amended, 35 P.S. Sections 691.1 et seq., and 25 PA Code Chapter 92a. The upcoming notice of intent and application to renew the permit, which is due on October 2, 2018, requires development and submittal of a CBPRP to the PA DEP. This current permit issued includes 8 municipal members and one institutional member in the name of the "Williamsport Area Joint MS4s". The City and Township intend to submit a notice of intent and renewal application to remain on the joint NPDES Permit No. PAI134808. In addition, the City of Williamsport and Loyalsock Township have decided to create a joint PRP to be included with the submittal.

The attached Joint CBPRP outlines Public Participation, Mapping, Pollutants of Concern, Determining Existing Loadings for Pollutants of Concern, Select Best Management Practices (BMPs) to Achieve the Minimum Required Reductions in Pollutant Loadings, Identify Funding Mechanisms, Identify Responsible Parties for Operation and Maintenance (O&M) of BMPs, and related appendices.

2. ROLES AND RESPONSIBILITIES

The CITY and TOWNSHIP each will operate and maintain BMPs that are implemented in their respective communities and in compliance with permit requirements. O&M of each BMP being proposed are listed within the attached CBPRP.

The CITY and TOWNSHIP have selected BMPs based on the following criteria: construction cost, project location and efficiency to remove sediment and other pollutants from the stormwater. Much of pollutant load reduction will come in the way of stream bank restoration to various locations.

The CITY and TOWNSHIP understand the commitment for implementing the PA DEP final approved joint CBPRP and will implement this plan as required during the 5-year permit term.

3. ALLOCATIONS OF COST AND POLLUTANT REDUCTION

Costs and distribution of pollutant reduction and maintenance will be shared based upon the pollutant reduction percentages for the CITY and TOWNSHIP as calculated within the CBPRP as outlined in Section D, page 7, of the CBPRP.

The CITY's cost and distribution of pollutant reduction is 35%.

The TOWNSHIP's cost and distribution of pollutant reduction is 65%.

If at any time the CBPRP is required to be updated, the percentages will be reevaluated based on the revised plan. The required pollutant load reductions will be recalculated and new percentages will be established. The new percentages will be applied to both the cost and distribution of pollution reduction and maintenance. The cost and application of reduction from projects that have been completed prior to plan updates, will remain the same as listed in this AGREEMENT.

The CITY and TOWNSHIP will work together to seek financial assistance for CBPRP projects that are listed within the CBPRP or can be substituted.

4. TIMELINE FOR IMPLEMENTATION

The CITY and TOWNSHIP understand the commitment for implementation of the PA DEP final approved joint CBPRP and will implement this plan within the 5-year permit term.

The CITY and TOWNSHIP will schedule quarterly meetings to discuss overall project schedules, estimated project completion dates, layout of plan, grant writing, and implement throughout the entire 5-year term.

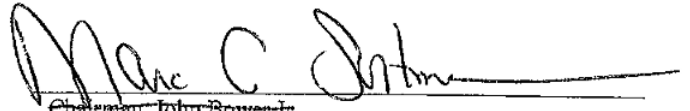
AND NOW, intending to be legally bound by the provisions set forth herein, the parties set their hand and seal as follows:

CITY OF WILLIAMSPORT

TOWNSHIP OF LOYALSOCK

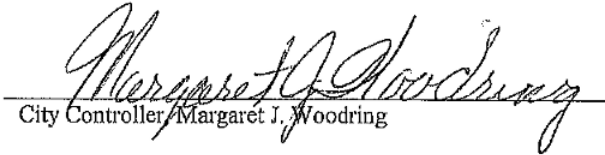


Mayor, Gabriel J. Campana

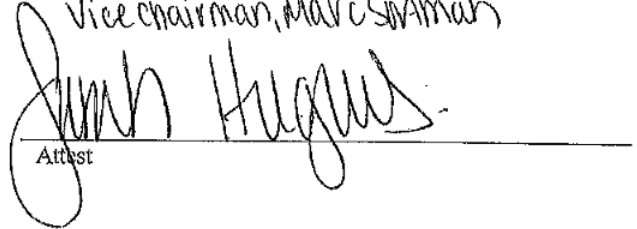


Chairman, John Bower Jr.

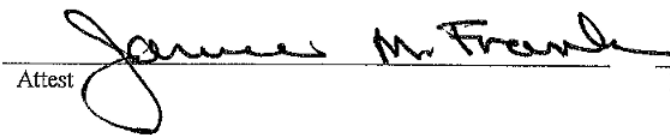
Vice chairman, Marc Swaman



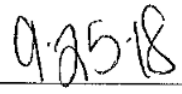
City Controller, Margaret J. Woodring



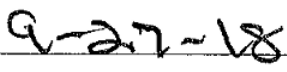
Attest



Attest



Date



Date

CITY OF WILLIAMSPORT, PA RESOLUTION

RESOLUTION # 8810

DATE 9-27-18

TITLE

**RESOLUTION TO APPROVE AN AGREEMENT BETWEEN THE CITY OF WILLIAMSPORT
AND LOYALSOCK TOWNSHIP FOR THE JOINT CHESAPEAKE BAY POLLUTION
REDUCTION PLAN**

WHEREAS, the CITY and TOWNSHIP have entered into a partnership to prepare and submit a Joint Pollution Reduction Plan (PRP) in accordance with the Pennsylvania Department of Environmental Protection (PA DEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PAI134808.

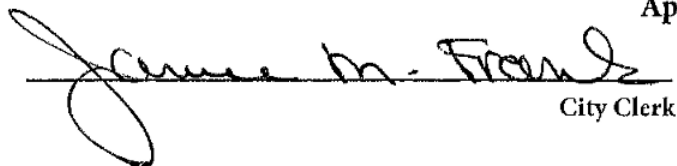
WHEREAS, upcoming notice of intent and application to renew the NPDES permit, due October 2, 2018, requires development and submittal of a Chesapeake Bay PRP (CBPRP) to the PA DEP.

WEREAS, this AGREEMENT is consistent with DEP requirements as outlined in the NPDES Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) PRP Instructions 3800-PM-BCW0100k dated March 2017.

WHEREAS, Larson Design Group was selected by the City and the Township to prepare this Joint CBPRP as attached to this RESOLUTION and AGREEMENT.

BE IT HEREBY RESOLVED that the Mayor and the City Controller are authorized to execute the attached agreement with Loyalsock Township.

BE IT FURTHER RESOLVED that Council will receive a presentation within the month of October from Larson Design Group for the CBPRP.


City Clerk

Approved

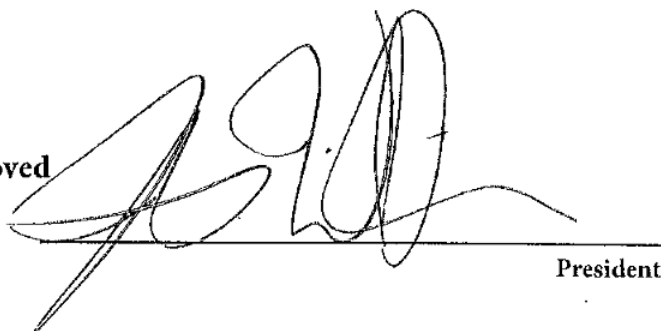

President

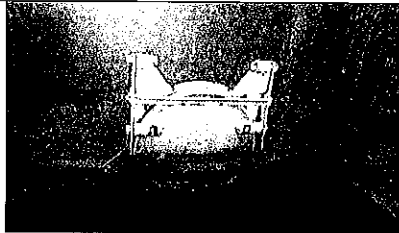
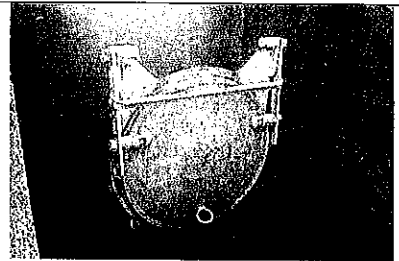
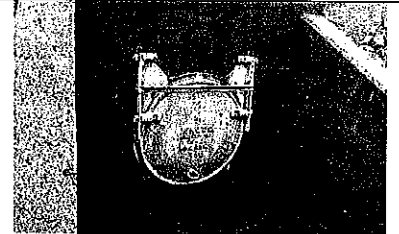
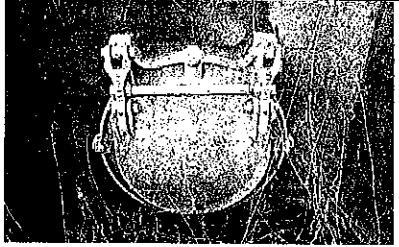
Exhibit 3

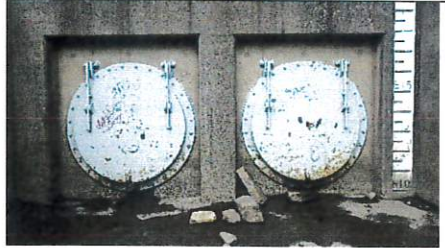
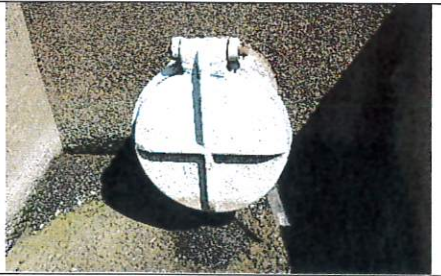
2016 Outfall Screening Summary Report

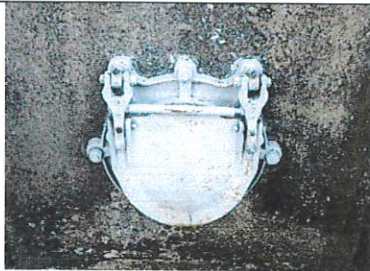
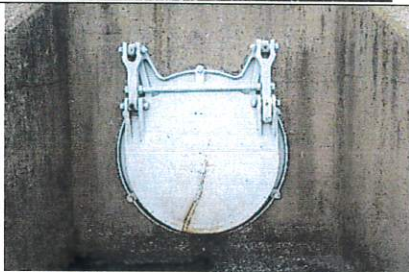
Williamsport

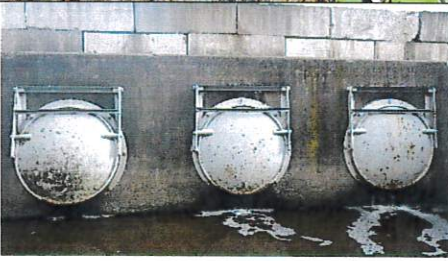
On June 14th and 18th, 2016, Clean Water Institute interns Alison McNett and Jennifer Twardowski conducted field work in the city of Williamsport for the MS4 program. They were assisted by Kaelyn Koser, Edward Feigles, Austin Daily, Steve Mundrick and John Grado. Outfalls were evaluated using the form "Outfall Reconnaissance Inventory/ Sample Collection Field Sheet".

The team located and evaluated 40 outfalls in 2016. Seven outfalls were flowing (trickle); DR01, LY06, WB01, WB10, WB18, WB19, and WB21. All outfalls were characterized as unlikely to have an impact on their respective watersheds.

Site	GPS Coordinates	Description	Photograph
DR01	N 41.223406 W-77.071603	Outfall is a reinforced concrete pipe with flood gate #4 measuring 36 inches in diameter. At the time of evaluation, no physical indicators were present and pipe was not submerged. No flow was present on July 14 th , 2015, but a trickle was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Daugherty Run.	
DR02	N 41.224758 W-77.081488	Outfall is a reinforced concrete pipe with a flood gate measuring 36 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Daugherty Run.	
DR03	N 41.229595 W-77.086406	Outfall is a reinforced concrete pipe with a flood gate measuring 24 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Daugherty Run.	
LY01	N 41.231507 W-77.043608	Outfall is a reinforced concrete pipe with flood gate #9 measuring 18 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	

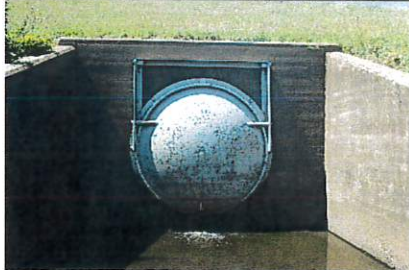
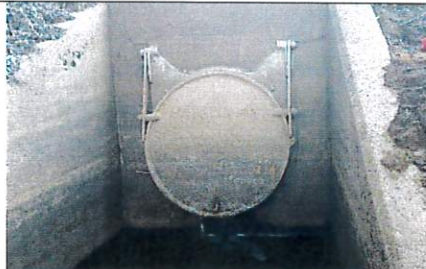
LY02	N 41.231696 W-77.043796	Outfall is a corrugated metal pipe measuring 24 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY03	N 41.233139 W-77.044012	Outfall is a reinforced concrete pipe with flood gate #11 measuring 36 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was partially submerged in mud. A trickle of water was present on July 13 th , 2015, but no flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY04	N 41.233805 W-77.044055	Outfall is a corrugated metal pipe. At the time of evaluation, no physical indicators were present, but the pipe was almost entirely buried. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY05	N 41.237701 W-77.043005	Outfall is two reinforced concrete pipes with flood gate #13 measuring 72 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY06	N 41.239173 W-77.042710	Outfall is a reinforced concrete pipe with a flood gate measuring 48 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. A trickle was present on both July 13 th , 2015 and July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY07	N 41.239669 W-77.046021	Outfall is a reinforced concrete pipe with a flood gate measuring 18 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	

LY08	N 41.241614 W-77.049308	Outfall is a reinforced concrete pipe with flood gate #14 measuring 12 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY09	N 41.243594 W-77.049121	Outfall is a reinforced concrete pipe with flood gate #15 measuring 36 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY10	N 41.244483 W-77.047658	Outfall is a reinforced concrete pipe with a flood gate measuring 18 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY11	N 41.244936 W-77.047291	Outfall is a reinforced concrete pipe with a flood gate measuring 12 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
LY12	N 41.245305 W-77.047007	Outfall is a reinforced concrete pipe with a flood gate measuring 12 inches in diameter. At the time of evaluation, paint was peeling and the flood gate was corroded, but the pipe was not submerged. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	

LY13	N 41.245935 W-77.047373	Outfall is a steel pipe measuring 77 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on Lycoming Creek.	
WG01	N 41.257243 W-77.012714	Outfall is a reinforced concrete pipe measuring 16 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on September 27 th , 2016. Outfall was characterized as unlikely to have an impact on Grafius Run.	
WG02	N 41.257554 W-77.012944	Outfall is a reinforced concrete pipe measuring 16 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on September 27 th , 2016. Outfall was characterized as unlikely to have an impact on Grafius Run.	
WG03	N 41.258318 W-77.013616	Outfall is a high density polyethylene pipe measuring 16 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on September 27 th , 2016. Outfall was characterized as unlikely to have an impact on Grafius Run.	
WB01	N 41.223667 W-77.056775	Outfall is three reinforced concrete pipes with flood gate #5 measuring 60 inches in diameter. At the time of evaluation, no physical indicators were present and the pipes were not submerged. A trickle was present on July 13 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB02	N 41.255847 W-77.048276	Outfall is a corrugated pipe with flood gate #6, and was mostly buried. At the time of evaluation, no physical indicators were present and the pipe was partially submerged in sediment. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	

WB03	N 41.226913 W-7.0466662	Outfall is a corrugated metal pipe measuring 18 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB04	N 41.227155 W-77.045230	Pipe is 40 feet into river--could not access. This is a monitoring point at the grate shown.	
WB05	N 41.227974 W-77.043474	Outfall is a reinforced concrete pipe with a flood gate measuring 48 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was partially submerged in water. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB06	N 41.230236 W-77.036652	Outfall is a corrugated metal pipe measuring 48 inches in diameter. It drains from flood gate #30. At the time of evaluation, no physical indicators were present and the pipe was partially submerged in water. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB07	N 41.230663 W-77.029312	Outfall is a reinforced concrete pipe with a flood gate measuring 48 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was partially submerged in water. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB08	N 41.230249 W-77.022598	Outfall is a reinforced concrete pipe with a flood gate measuring 48 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	

WB09	N 41.230532 W-77.019460	Outfall is a reinforced concrete pipe measuring 16 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB10	N 41.230427 W-77.019161	Outfall is a reinforced concrete pipe with flood gate #33 measuring 18 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. A trickle of water was present on both July 15 th , 2015 and July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB11		Outfall is a high density polyethylene pipe measuring 18 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. No flow was present on September 27 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River. Note this may be a PennDOT.	
WB12	N 41.235068 W-77.005493	Outfall is three steel box drains measuring 72x72 inches. At the time of evaluation, no physical indicators were present and the drains were partially submerged in water. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB13	N 41.236089 W-77.003044	Outfall is a reinforced concrete pipe with a flood gate measuring 18 inches in diameter. At the time of evaluation, flood gate was corroded, but and the pipe was not submerged. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB14	N 41.236291 W-77.002625	Outfall is a reinforced concrete pipe with a flood gate measuring 12 inches in diameter. At the time of evaluation, flood gate was corroded, but the pipe was not submerged. No flow was present on July 13 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	

WB15	N 41.237339 W-77.000280	Outfall is a reinforced concrete pipe with a flood gate measuring 12 inches in diameter. At the time of evaluation, flood gate was corroded, but the pipe was not submerged. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB16	N 41.238810 W-76.998603	Outfall is a reinforced concrete pipe with a flood gate measuring 12 inches in diameter. At the time of evaluation, flood gate was corroded, but the pipe was not submerged. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB17	N 41.240768 W-76.994389	Outfall is a reinforced concrete pipe with a flood gate measuring 12 inches in diameter. At the time of evaluation, flood gate was corroded, but the pipe was not submerged. No flow was present on July 14 th , 2015 or July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB18	N 41.241095 W-76.993777	Outfall is a reinforced concrete pipe with a flood gate measuring 84 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. A trickle was present on both July 14 th , 2015 and July 14 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB19	N 41.243473 W-76.988576	Outfall is a reinforced concrete pipe with flood gate #45 measuring 48 inches in diameter. At the time of evaluation, no physical indicators were present and the pipe was not submerged. A trickle was present on both July 14 th , 2015 and July 18 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
WB20	N 41.245093 W-76.984193	Outfall is a reinforced concrete pipe with flood gate #47 measuring 18 inches in diameter. At the time of evaluation, flood gate had peeling paint, but the pipe was not submerged. No flow was present on July 18 th , 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	

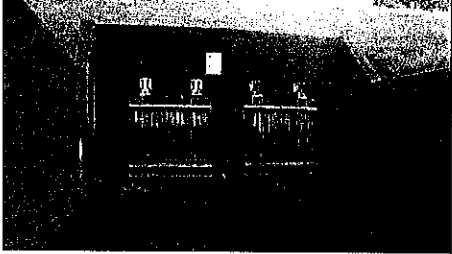
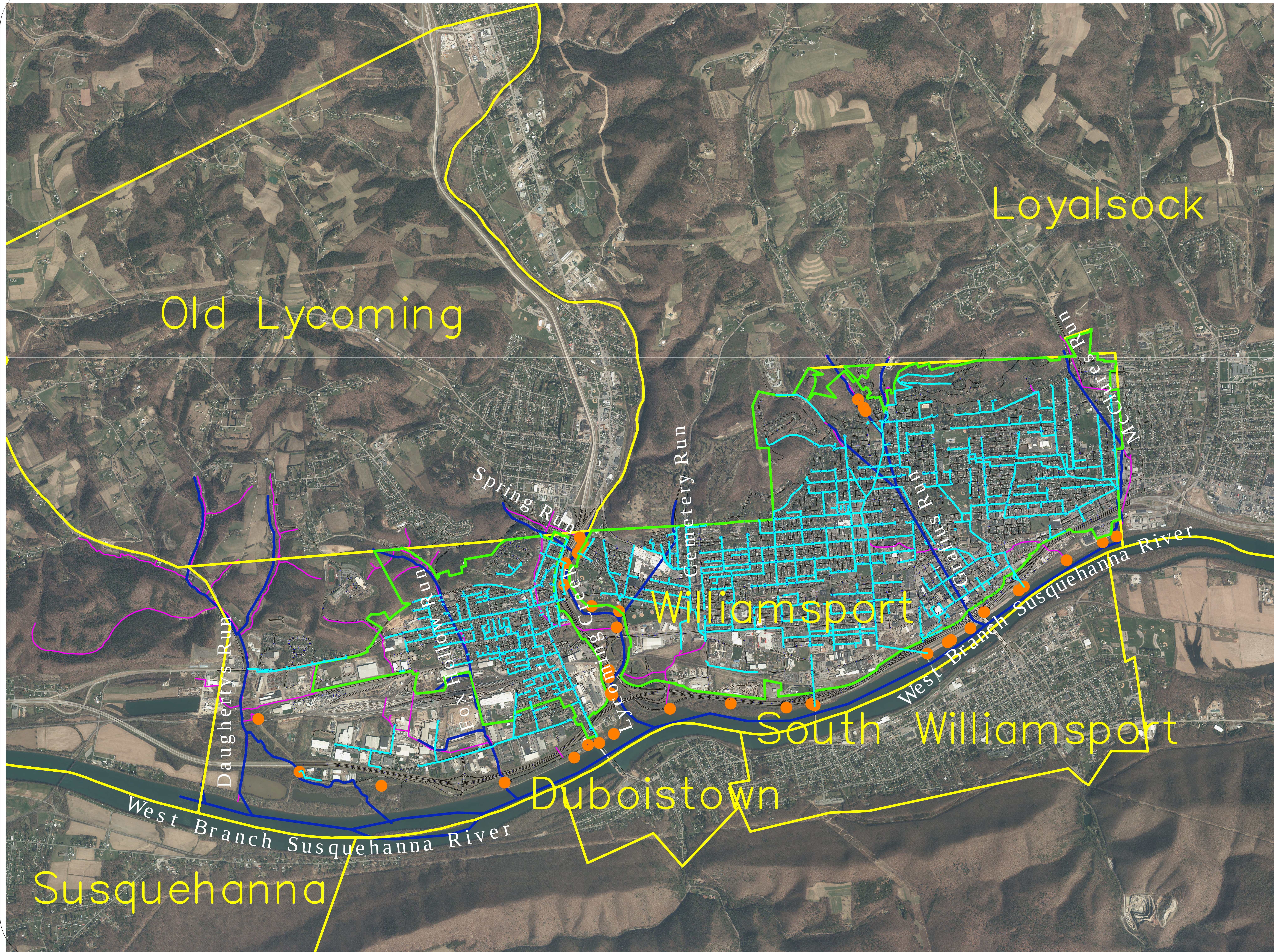
WB21	N 41.245608 W-76.982518	Outfall is two reinforced concrete box drains with wooden flood gates measuring 72x72 inches. At the time of evaluation, no physical indicators were present and the drains were was not submerged. A trickle was present on July 14th, 2015 or July 18th, 2016. Outfall was characterized as unlikely to have an impact on the West Branch Susquehanna River.	
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Exhibit 4

City of Williamsport

MS4 Map



General Notes

- Channel/Swale
- Storm Sewer
- Catch Basin
- Municipalities
- Road Edge
- Waterways
- CSO Area
- Outfall

No.	Revision/Issue	Date

Firm Name and Address
City Of
Williamsport
245 W 4th St,
Williamsport, PA
17701

Project Name and Address
City Of
Williamsport
Municipal Separate
Storm Sewer System

Project	Sheet
Date 09/02/2020	00
Scale NTS	

Exhibit 5

City of Williamsport Stormwater Management Ordinance

TITLE ELEVEN – Stormwater Management

- Art. 1391. General Provisions.
- Art. 1392. Definitions.
- Art. 1393. Stormwater Management Standards.
- Art. 1394. Stormwater Management (SWM) Site Plan Requirements.
- Art. 1395. Operation and Maintenance.
- Art. 1396. Fees and Expenses.
- Art. 1397. Prohibitions.
- Art. 1398. Enforcements and Penalties.
- Art. 1399. References.
- Appendices

ARTICLE 1391
General Provisions

- | | |
|--------------------------------|--|
| 1391.01 Short title. | 1391.07 Severability. |
| 1391.02 Statement of findings. | 1391.08 Compatibility with other requirements. |
| 1391.03 Purpose. | |
| 1391.04 Statutory authority. | 1391.09 Effect of watershed stormwater plans. |
| 1391.05 Applicability. | |
| 1391.06 Repealer. | |

1391.01 SHORT TITLE.

This Title shall be known and may be cited as the “City of Williamsport Stormwater Management Ordinance.”
(Ord. 6211. Approved 4-15-2012.)

1391.02 STATEMENT OF FINDINGS.

The City of Williamsport finds that:

- (a) Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases non-point source pollution of water resources.
- (b) A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental

to the public health, safety and welfare and the protection of people of the Commonwealth, their resources and the environment.

- (c) Stormwater is an important water resource. Less runoff provides for increased groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
- (d) Federal and State regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES).

(Ord. 6211. Approved 4-15-2012.)

1391.03 PURPOSE.

The purpose of this Title is to promote health, safety, and welfare within the City of Williamsport and its watershed by minimizing the harms and maximizing the benefits described in §1391.02 of this Title, through provisions designed to:

- (a) Meet legal water quality requirements under state law, including regulations at 25 Pa.Code, Chapter 93, to protect, maintain, reclaim and restore the existing and designated uses of the waters of this Commonwealth.
- (b) Authorize a comprehensive program of stormwater management designated to preserve and restore the flood carrying capacity of Commonwealth streams; to preserve to the maximum extent practicable natural stormwater runoff regimes and natural course, current and cross-section of water of the Commonwealth; and to protect and conserve ground waters and ground-water recharge areas.
- (c) Manage stormwater runoff close to the source.
- (d) Provide procedures and performance standards for stormwater planning and management.
- (e) Maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources.
- (f) Prevent scour and erosion of stream banks and streambeds.
- (g) Provide proper operations and maintenance of all permanent Stormwater Management (SWM) Best Management Practices (BMPs) that are implemented within the City of Williamsport.
- (h) Provide standards to meet NPDES permit requirements.
- (i) Encourage the provision or upgrade of stormwater BMPs for existing development.

- (j) Facilitate the development of Chesapeake Bay nutrient credits for retrofit storm-water facilities or regulated activities that exceed the minimum nutrient reduction standards.

(Ord. 6211. Approved 4-15-2012.)

1391.04 STATUTORY AUTHORITY.

- (a) Primary Authority. The City of Williamsport is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. §680.1, et seq., as amended, the "Storm Water Management Act" and the (appropriate municipal code).
- (b) Secondary Authority. The City of Williamsport also is empowered to regulate land use activities that affect runoff by the authority of the Act of July 31, 1968, P.L. 805, No. 247, the Pennsylvania Municipalities Planning Code, as amended.

(Ord. 6211. Approved 4-15-2012.)

1391.05 APPLICABILITY.

All regulated activities and all activities that may affect stormwater runoff, including land development and earth disturbance, are subject to regulation by this Title.

(Ord. 6211. Approved 4-15-2012.)

1391.06 REPEALER.

Any other ordinance provision(s) or regulation of the City of Williamsport inconsistent with any of the provisions of this Title is hereby repealed to the extent of the inconsistency only.

(Ord. 6211. Approved 4-15-2012.)

1391.07 SEVERABILITY.

In the event that a court of competent jurisdiction declares any section or provision of this Title invalid, such decision shall not affect the validity of any of the remaining provisions of this Title.

(Ord. 6211. Approved 4-15-2012.)

1391.08 COMPATIBILITY WITH OTHER ORDINANCE REQUIREMENTS.

Approvals issued and actions taken under this Title do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance.

(Ord. 6211. Approved 4-15-2012.)

1391.09 EFFECT OF WATERSHED STORMWATER PLANS.

- (a) After adoption and approval of a watershed stormwater plan in accordance with this act, the location, design and construction within the watershed of stormwater management systems, obstructions, flood control projects, subdivisions and major land developments, highways and transportation facilities, facilities for the provi-

sion of public utility services and facilities owned or financed in whole or in part by funds from the Commonwealth shall be conducted in a manner consistent with the watershed stormwater plan.⁽⁸⁾

- (b) Within 6 months following adoption and approval of the watershed stormwater plan, each City of Williamsport shall adopt or amend, and shall implement such ordinances and regulations, including zoning, subdivision and development, building code, and erosion and sedimentation ordinances, as are necessary to regulate development within the City of Williamsport in a manner consistent with the applicable watershed stormwater plan and the provisions of this act.⁽⁸⁾
- (Ord. 6211. Approved 4-15-2012.)

ARTICLE 1392
Definitions

1392.01 Definitions.

1392.01 DEFINITIONS.

For the purposes of this Title, certain terms and words used herein shall be interpreted as follows:

- (a) Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- (b) The word “includes” or “including” shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.
- (c) The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.

AGRICULTURAL ACTIVITY—the work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

APPLICANT—a landowner, developer or other person who has filed an application to the City of Williamsport for approval to engage in any regulated activity at a project site in the City of Williamsport.

BEST MANAGEMENT PRACTICE (BMP)—activities, facilities, designs, measures or procedures used to manage stormwater impacts from regulated activities, to meet State water quality requirements, to promote groundwater recharge and to otherwise meet the purposes of this Title. Stormwater BMPs are commonly grouped into one of two broad categories or measures: “structural” or “non-structural.” In this Title, non-structural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, rain gardens, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

BUFFER, STREAM BUFFER, RIPARIAN BUFFER, OR AQUATIC BUFFER—an area of permanent native vegetation, including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake, reservoir, or coastal estuarine area.

CITY OF WILLIAMSPORT—City of Williamsport, Lycoming County, Pennsylvania, or its designee.

CONSERVATION DISTRICT—a conservation district, as defined in §3(c) of the Conservation District Law (3 P.S. §851(c)), which has the authority under a delegation agreement executed with the Department to administer and enforce all or a portion of the erosion and sediment control program in this Commonwealth.

DESIGN STORM—the magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 5-year storm) and duration (e.g., 24-hours), used in the design and evaluation of stormwater management systems. Also see “return period.”

DETENTION—the volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

DEP—the Pennsylvania Department of Environmental Protection.

DEVELOPMENT SITE (SITE)—see “project site.”

DISCONNECTED IMPERVIOUS AREA (DIA)—an impervious or impermeable surface which is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area which allows for infiltration, filtration, and increased time of concentration as specified in Appendix B, “Disconnected Impervious Area.”

DISTURBED AREA—an unstabilized land area where an earth disturbance is occurring or has occurred.

EARTH DISTURBANCE—a construction or other human activity which disturbs the surface of the land, including, but not limited to, clearing and grubbing; grading; excavations; embankments; road maintenance; building construction; the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

EROSION—the natural process by which the surface of the land is worn away by water, wind or chemical action.

EXISTING CONDITION—the dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

FEMA—Federal Emergency Management Agency.

FLOODPLAIN—any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area.

Included are lands adjoining a river or stream that have been or may be expected to be inundated by a 100-year flood. Also included are areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania Department of Environmental Protection (PADEP) *Technical Manual for Sewage Enforcement Officers* (as amended or replaced from time to time by PADEP).

FLOODWAY—the channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year floodway, it is assumed—absent evidence to the contrary—that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

FOREST MANAGEMENT TIMBER OPERATIONS—planning and activities necessary for the management of forestland. These include conducting a timber inventory, preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

HYDROLOGIC SOIL GROUP (HSG)—infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSG's (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NRCS^{3,4})

IMPERVIOUS SURFACE (IMPERVIOUS AREA)—a surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to, roofs, additional indoor living spaces, patios, garages, storage sheds and similar structures, and any new streets or sidewalks. Decks, parking areas, and driveway areas are not counted as impervious areas if they do not prevent infiltration.

KARST—a type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

LAND DEVELOPMENT (DEVELOPMENT)—inclusive of any or all of the following meanings:

- (1) The division of a parcel of land into two or more parcels.
- (2) The construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any buildings, structures, or accessory structures.
- (3) Any use or change in use of buildings or land.

- (4) Any extension of the use of land.
- (5) Any clearing, grading, or other movement of land.
- (6) Mining, dredging, filling, grading, paving, excavation or drilling operations.
- (7) The storage, deposition or extraction of materials, public or private sewage disposal systems or water supply facilities; for which permission may be required pursuant to a municipal land development ordinance.

NRCS–USDA Natural Resources Conservation Service (previously SCS).

PEAK DISCHARGE–the maximum rate of stormwater runoff from a specific storm event.

PERVIOUS AREA–any area not defined as impervious.

PROJECT SITE–the specific area of land where any regulated activities in the City of Williamsport are planned, conducted, or maintained.

QUALIFIED PROFESSIONAL–any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Title.

REGULATED ACTIVITIES–any earth disturbances or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

REGULATED EARTH DISTURBANCE ACTIVITY–activity involving earth disturbance subject to regulation under 25 Pa.Code, Chapter 92, Chapter 102, or the Clean Streams Law.

RETENTION/REMOVED RUNOFF–the volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

RETURN PERIOD–the average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every 25 years. The probability of a 25-year storm occurring in any 1 year is 0.04 (i.e., a 4 percent chance).

RUNOFF–any part of precipitation that flows over the land.

SEDIMENT–soils or other materials transported by surface water as a product of erosion.

STATE WATER QUALITY REQUIREMENTS–the regulatory requirements to protect, maintain, reclaim, and restore water quality under Pennsylvania Code, Title 25, and the Clean Streams Law.

STORMWATER–drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

STORMWATER MANAGEMENT FACILITY—any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, and infiltration structures.

STORMWATER MANAGEMENT PLAN—the City of Williamsport’s Stormwater Management Plan for managing stormwater runoff adopted by the County of Lycoming as required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the “Storm Water Management Act.”

STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES—is abbreviated as SWM BMPs throughout this Title.

STORMWATER MANAGEMENT SITE PLAN—the plan prepared by the developer or his representative indicating how stormwater runoff will be managed at the development site in accordance with this Title. Stormwater management site plan will be designated as SWM site plan throughout this Title.

STREAM—for purposes of administration of this Title (other regulatory agencies such as the United States Army Corps of Engineers have a different definition), a stream is defined as a perennial and intermittent watercourses identified through site inspection and U.S. Geological Survey (USGS) maps. Perennial streams are those which are depicted on a USGS map with a solid blue line. Intermittent streams are those which are depicted on a USGS map with a dotted blue line.

SUBDIVISION—as defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247.

USDA—United States Department of Agriculture.

WATERS OF THIS COMMONWEALTH—rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

WATERSHED—region or area drained by a river, watercourse or other surface water of the Commonwealth.

WETLAND—those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, and similar areas.

(Ord. 6211. Approved 4-15-2012.)

ARTICLE 1393
Stormwater Management Standards

1393.01	General requirements.	1393.04	Rate controls.
1393.02	Exemptions.	1393.05	Technical design standards.
1393.03	Volume controls.		

1393.01 GENERAL REQUIREMENTS.

- (a) For all regulated activities, unless preparation of a SWM site plan is specifically exempted in §1393.02:
 - (1) Preparation and implementation of an approved SWM site plan is required.
 - (2) No regulated activities shall commence until the City of Williamsport issues written approval of a SWM site plan, which demonstrates compliance with the requirements of this Title.
- (b) SWM site plans approved by the City of Williamsport, in accordance with §406, shall be on site throughout the duration of the regulated activity.
- (c) The City of Williamsport may, after consultation with DEP, approve measures for meeting the State water quality requirements other than those in this Title, provided that they meet the minimum requirements of, and do not conflict with, State law including, but not limited to, the Clean Streams Law.
- (d) For all regulated activities, implementation of the Volume Controls in §1393.03 is required unless exempt under §1393.02.
- (e) For all regulated earth disturbance activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities (e.g., during construction), to meet the purposes and requirements of this Title and to meet all requirements under Pennsylvania Code, Title 25, and the Clean Streams Law. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual), Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008 (2000), as amended and updated.
- (f) Impervious Areas.
 - (1) The measurement of impervious areas shall include all of the impervious areas in the total proposed development even if development is to take place in stages.
 - (2) For development taking place in stages, the entire development plan must be used in determining conformance with this Title.

- (3) For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Title; except the volume controls in §1393.03 and the peak rate controls of §1393.04 do not need to be retrofitted to existing impervious area.
- (g) Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without written notification to the adjacent property owner(s). Such stormwater flows shall be subject to the requirements of this Title.
- (h) All regulated activities shall include such measures as necessary to:
 - (1) Protect health, safety, and property.
 - (2) Meet State water quality requirements as defined in Article 1392.
 - (3) Meet the water quality goals of this Title by implementing measures to:
 - a. Minimize disturbance to floodplains, wetlands, natural slopes over 8 percent, and existing native vegetation.
 - b. Preserve and maintain trees and woodlands. Maintain or extend riparian buffers and protect existing forested buffer. Provide trees and woodlands adjacent to impervious areas whenever feasible.
 - c. Establish and maintain non-erosive flow conditions in natural flow pathways.
 - d. Minimize soil disturbance and soil compaction. Cover disturbed areas and replace topsoil to a depth sufficient to achieve vegetated cover or 4 inches, whichever is greater. Use tracked equipment for grading when feasible.
 - e. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.
 - (4) To the maximum extent practicable, incorporate the techniques for low impact development practices described in the *Pennsylvania Stormwater Best Management Practices Manual* (PA BMP Manual).¹
- (i) The design of all facilities over Karst shall include an evaluation of measures to minimize adverse effects.
 - a. Infiltration BMPs should be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Title.

- (j) Storage facilities should completely drain both the volume control and rate control capacities over a period of time not more than 72 hours from the end of the design storm, or otherwise be treated.
- (k) For all regulated activities, SWM BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Title and to meet all requirements under Pennsylvania Code, Title 25, the Clean Streams Law, the Storm Water Management Act, and §1391.03 of this Title.
- (l) Various BMPs and their design standards are listed in the PA BMP Manuals.
- (m) Materials Workmanship and Methods. All materials, workmanship, and methods of work shall comply with the Pennsylvania Department of Transportation Publication 408 Specifications, as accepted and commonly used by the City of Williamsport, and shall be considered to be incorporated into this Article as if copied in full. In the event a conflict arises between the requirements of this Title and the PA DOT Publication 408 Specifications, the City of Williamsport shall resolve the difference, and said opinion shall be binding.
- (n) Supplemental standards and criteria contained in Article 1399 are hereby incorporated into this Title to govern the hydrologic and hydraulic design provisions contained herein.
- (o) The signature and seal of a registered professional engineer, if required, must be provided at the time of plan submission.

(Ord. 6211. Approved 4-15-2012.)

1393.02 EXEMPTIONS.

- (a) The following activities are specifically exempt from the plan preparation and submission provisions of this Title, but remain subject to the requirements in §§1393.01(e) through (l) of this Title (and erosion and sedimentation pollution control requirements).
 - (1) Regulated activities that create impervious areas smaller in area than 1,000 sq. ft. and regulated activities that disturb less than 5,000 sq. ft. are exempt from the peak rate control and the SWM site plan preparation requirement of this Title. Refer to the stormwater management plan (SMP) requirements in Appendix C.
 - (2) Regulated activities that create disconnected impervious areas equal to or greater than 1,000 sq. ft. and less than 5,000 sq. ft., and regulated activities that disturb equal to or greater than 5,000 sq. ft. and less than 20,000 sq. ft. without point source discharge to surface waters may be exempt from the SWM plan requirements of this Title provided that:

- a. The regulated activity is disconnected from impervious areas as specified in Appendix B of this Title.
- b. The regulated activity will not alter or be located within any existing swale or drainageway.

Refer to the stormwater management plan (SMP) requirements in Appendix C.

- (3) Agricultural plowing and tilling are exempt from the rate control and SWM site plan preparation requirements of this Title provided the activities are performed according to the requirements of 25 Pa.Code, Chapter 102, "Erosion and Sediment Control."
 - (4) Forest management and timber operations are exempt from the rate control and SWM site plan preparation requirements of this Title provided the activities are performed according to the requirements of 25 Pa.Code, Chapter 102, "Erosion and Sediment Control."
 - (5) Use of land for gardening for home consumption.
 - (6) Agriculture when operated in accordance with an approved conservation plan.
- (b) The City of Williamsport shall require an acceptable minor SWM Plan, as described in §1393.05(n) and Appendix C, be submitted provided that:
- (1) Regulated activities that create impervious areas, if connected to impervious areas, equal to or greater than 1,000 sq. ft. and less than 5,000 sq. ft.
 - (2) Regulated activities that disturb equal to or greater than 5,000 sq. ft. and less than 20,000 sq. ft. with point source discharge to surface waters.

Refer to the stormwater management plan (SMP) requirements in Appendix C. A sample minor stormwater management plan can be found in Appendix D.

- (c) Exemptions from any provisions of this Title shall not relieve the applicant from the requirements in §§1393.01(e) through (l).
 - (d) The City of Williamsport may include permit conditions to specify that regulated activities maintain a minimum distance between proposed impervious areas/stormwater management facility outlets and down slope property line(s).
- (Ord. 6211. Approved 4-15-2012.)

1393.03 VOLUME CONTROLS.

Water volume controls shall be implemented using the design storm method in subsection (a) or the simplified method in subsection (b) below. For regulated activity areas equal or less than 1

acre that do not require hydrologic routing to design the stormwater facilities, this Title establishes no preference for either methodology; therefore, the applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.

- (a) The Design Storm Method (CG-1 in the PA BMP Manual) is applicable to any size of regulated activity. This method requires detailed modeling based on site conditions.
 - (1) Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration rainfall.
 - (2) For modeling purposes:
 - a. Existing (pre-development) non-forested pervious areas must be considered meadow or its equivalent.
 - b. Twenty percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions for redevelopment.
- (b) The Simplified Method (CG-2 in the PA BMP Manual) provided below is independent of site conditions and should be used if the design storm method is not followed. This method is not applicable to activities that disturb greater than 1 acre, or for projects that require design of stormwater storage facilities. For new impervious surfaces:
 - (1) Stormwater facilities shall be sized to capture at least the first 2 inches of runoff from all new impervious surfaces.
 - (2) At least the first 1 inch of runoff from new impervious surfaces shall be permanently removed from the runoff flow—i.e., it shall not be released into the surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration.
 - (3) Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first 0.5 inch of the permanently removed runoff should be infiltrated.
 - (4) This method is exempt from the requirements of §1393.04, “Rate Controls.”

(Ord. 6211. Approved 4-15-2012.)

1393.04 RATE CONTROLS.

- (a) Areas not covered by a release rate map from an approved Act 167 Stormwater Management Plan:

Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour, storms. If it is shown, that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

- (b) Areas covered by a release rate map from an approved Act 167 Stormwater Management Plan:

For the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms, the post-development peak discharge rates will follow the applicable approved release rate maps. For any areas not shown on the release rate maps, the post-development discharge rates shall not exceed the predevelopment discharge rates.

(Ord. 6211. Approved 4-15-2012.)

1393.05 TECHNICAL DESIGN STANDARDS.

All regulated activities shall be conducted in conformance with the following standards:

- (a) After installation of impervious cover, peak discharges for the 2-, 5-, 10-, 25-, 50-, and 100-year frequency storms from the site shall not exceed the respective peak discharge performance standards in this Title.

Stormwater runoff shall be managed so that no downstream increases in flood damages or impairment of streets and other public facilities occur. The City of Williamsport may require that downstream impacts be evaluated at critical locations such as dams, tributaries, existing developments, undersized culverts, and flood prone areas. The City of Williamsport shall make the final determination with respect to the degree of management required for any site. The applicant shall evaluate the effects of the proposed plan on such critical locations by providing computed water surface elevations (WSEL) for the 10- and 100-year storms. Methods of computation shall have prior approval of the City of Williamsport. At such downstream critical locations, stormwater management may be exercised by:

- (1) Providing off-site improvements to downstream conveyances in order to contain flow increases.
 - (2) Providing downstream drainage easements with sufficient widths to contain the flood limits.
- (b) Groundwater Recharge. The City of Williamsport may impose stormwater quality measures in accordance with this Title to protect against ground or surface water pollution where the type of business or the nature of the stormwater runoff and soils underlying stormwater management facilities would constitute a substantial risk of contamination.

- (c) In establishing the site conditions for calculating stormwater runoff prior to development, the following assumptions shall apply:
- (1) Woodland or meadow in good condition shall be used for all undeveloped areas.
 - (2) Average antecedent moisture conditions as defined by the Natural Resource Conservation Service (NRCS).
 - (3) Determining pre-development peak discharges from Karst geologic areas apply either:
 - a. Peak adjustment factors in accordance with the USGS Water Resources Investigations Report 00-4189, *Techniques for Estimating Magnitude and Frequency of Peak Flows for Pennsylvania Streams*, OR
 - b. Drainage area reductions equal to the area of undrained depressions or pond factor adjustments in accordance with the *Urban Hydrology for Small Watersheds*, Technical Release No. 55 (TR-55, USDA, NRCS).
- (d) Hydrologic Methods. All plans and designs for stormwater management facilities shall be reviewed by the City of Williamsport. Plans for facilities other than storm sewers should determine stormwater peak discharge and stormwater runoff by the use of the *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended. The City of Williamsport may permit the use of the modified rational method or other methods for calculation of the storage capacity of a stormwater management facility from drainage areas of 20 acres or less.
- (1) Coefficients. Acceptable runoff coefficient values for use in the rational method equation are identified in Appendix E, of this Title. When applying the rational method coefficients in Table A-3, "open space" coefficients shall be used for undeveloped, densely vegetated (non-forest) areas instead of "meadow" coefficients. Refer to *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended, for permissible curve numbers.

The Rational Formula may be used in lieu of the Soil Cover Complex method to compute design flows for the sizing of storm sewers, inlets, and swales.
 - (2) Rainfall amounts for the return periods specified shall be determined using the *Precipitation-Frequency Atlas of the United States*, Atlas 14, Volume 2 (as amended), U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland, 20910. Rainfall duration for hydrograph generation shall be selected for the specified recurrence intervals on the basis of twice the computed time of concentration for

the given watershed and subwatersheds. In no case shall the duration be less than 24 hours.

- (3) Time of concentration shall be determined in accordance with the methods presented in *PennDOT Drainage Manual*, Publication Number 13, DM-2 Chapter 10, as amended.
 - (4) In order to reduce stormwater runoff volumes from developed areas and encourage groundwater recharge, underground basin drains, infiltration trenches, and cisterns are permitted to which roof leaders may be connected. These drains consist of stone-filled basins which temporarily store and release water below ground surface. Plans for such facilities shall be submitted to the City of Williamsport for approval, and the basins shall be used only in those areas where soils, geologic, and water table conditions permit.
- (e) Stormwater management facilities and related installations shall be provided:
- (1) To permit unimpeded flow of natural watercourses. Such flow may be redirected as required, subject to the approval of the Pennsylvania Department of Environmental Protection.
 - (2) To ensure adequate drainage of all low points along the curb line of streets.
 - (3) To intercept stormwater runoff along streets at intervals reasonably related to the extent and grade of the area drained, and to prevent substantial flow of water across intersections or flooded intersections during storms, in accordance with the procedures in the *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended.
 - (4) To ensure adequate and unimpeded flow of stormwater under driveways in, near, or across natural watercourses or drainage swales. Suitable pipes or other waterways shall be provided as necessary.
 - (5) To properly drain stormwater runoff from all land development projects. All lot and open areas shall be designed to drain to the nearest practical street or drainage system, existing or proposed, as defined by the City of Williamsport, with no impact on adjoining properties, unless an area specifically designed for stormwater detention is provided.
- (f) Storm sewers and related installations:
- (1) Storm sewers, where required by zoning and land use densities, shall be placed under or immediately adjacent to the roadway side of the curb, or as directed by the City of Williamsport, when parallel to the street within the right-of-way.

When located in undedicated land, they shall be placed within a drainage easement not less than 20 feet wide as approved by the City of Williamsport.

The use of properly designed, graded, and turfed drainage swales is encouraged in lieu of storm sewers in commercial and industrial areas and, where approved by the City of Williamsport, in residential areas. Such swales shall be designed not only to carry the required discharge without excessive erosion, but also to increase the time of concentration, reduce the peak discharge and velocity, and permit the water to percolate into the soil, where appropriate. Criteria related to the use and design of drainage swales are as follows:

Criteria:

- a. Where vegetated drainage swales are used in lieu of or in addition to storm sewers, they shall be designed to carry the 10-year discharge without erosion, and also to increase the time of concentration, reduce the peak discharge and velocity, and permit the water to percolate into the soil.
- b. The maximum encroachment of water on the roadway pavement along roadside swales in cut areas shall not exceed half of a through traffic lane during a 10-year frequency storm of 5-minute duration. Frequent and/or sustained flooding of the sub-base shall be avoided.
- c. Swales shall be designed in accordance with *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended. Inlets shall be provided to limit the shoulder encroachment and water velocity.
- d. The side slope for any vegetated drainage channel requiring mowing of the vegetation shall have a maximum grade of three horizontal to one vertical on those areas to be mowed.
- e. Erosion Prevention. All drainage swales shall be designed to prevent the erosion of the bed and bank areas. Suitable temporary and/or permanent stabilization during vegetative cover establishment shall be provided to prevent erosion.
- f. Storm sewers or drainage swales shall discharge to a detention or retention basin to attenuate the peak rate and volume, respectively of stormwater runoff, except as provided in the plan.
- g. Design Standard. Because of the critical nature of vegetated drainage channels, the design of all vegetated channels shall, as a minimum, conform to the design procedures outlined in the *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended.

Guidelines:

- a. Deed restrictions may be required on property(ies) containing drainage swales and/or perennial streams. When required, these deed restrictions shall specify that no property owner obstruct or alter any drainage swale or perennial stream identified in the stormwater management plan.
- b. The design capacity of storm sewers shall be in accordance with *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended. Storm drainage systems shall be designed without surcharging inlets to provide conveyance of stormwater runoff into a detention basin or similar facility utilized to manage the rate of stormwater runoff. To avoid surcharging inlets, and to ensure that inlets will receive stormwater runoff, the hydraulic grade line at the inlet should be at least 6 inches below the elevation of the inlet grate. Where site grading will direct stormwater runoff from the 100-year design storm to a detention basin or similar facility utilized to manage the rate of stormwater runoff, then the storm sewer may be designed for the 10-year design storm. Where site grading will not direct stormwater runoff from the 100-year design storm to a detention basin or similar facility utilized to manage the rate of stormwater runoff, then the storm sewer shall be designed for the 100-year design storm. Conveyance of storms to the detention basin, up to and including the 100-year frequency, shall be provided so as not to endanger life or seriously damage property.
- c. Storm inlet types and inlet assemblies shall conform to the Pennsylvania Department of Transportation Standards for Roadway Construction as approved by the City of Williamsport.
 - 1. Inlets shall, at a minimum, be located at the lowest point of street intersections to intercept the stormwater before it reaches pedestrian crossings; or at sag points of vertical curves in the street alignment which provide a natural point of ponding of surface stormwater.
 - 2. Where the City of Williamsport deems it necessary because of special land requirements, special inlets may be approved.
 - 3. The interval between inlets collecting stormwater runoff shall be determined in accordance with the *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended.
 - 4. In curbed sections, the maximum encroachment of water on the roadway pavement shall not exceed half of a through traffic lane or 1 inch less than the depth of curb during the 10-year design storm of 5-minute duration. Inlets shall be provided to limit the encroachment of water on the pavement. When inlets

are used in a storm system within the right-of-way limits of a street in lieu of manholes, the spacing of such inlets shall not exceed the maximum distance of 450 feet.

5. The design of storm inlets shall be in accordance with *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended.
 - d. Accessible drainage structures shall be located on a continuous storm sewer system at all vertical dislocations, at all locations where a transition in storm sewer pipe sizing is required, at all vertical and horizontal angle points exceeding 5 degrees, and at all points of convergence of two or more influent storm sewer mains. The construction locations of accessible drainage structures shall be as indicated on the subdivision drainage plan or area drainage plan approved by the City of Williamsport.
 - e. When evidence available to the City of Williamsport indicates that existing storm sewers have sufficient capacity as determined by hydrograph summation and are accessible, proposed stormwater facilities may connect to the existing storm sewers so long as the peak rate of discharge does not exceed the amount permitted by this Article.
- (g) Bridges and culverts shall have ample waterway opening to carry expected flows, based on the *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended, or as required by the City of Williamsport.
- (h) Detention or retention basins for the management of stormwater peak discharges shall meet the following requirements:
 - (1) Basins shall be installed prior to or concurrent with any earthmoving or land disturbances which they will serve. The phasing of their construction shall be noted in the narrative and on the plan.
 - (2) The design of all facilities over limestone formations shall include measures to prevent groundwater contamination and, where required, sinkhole formation. Soils used for the construction of basins shall have moderate to low erodibility factors (i.e., "K" factors of 0.32 or less).
 - (3) Energy dissipaters and/or level spreaders shall be installed at points where pipes or drainageways discharge to or from basins.
 - (4) Outlet structures within detention/retention basins shall incorporate child-proof, non-clogging trash racks or grates over all horizontally oriented openings. All vertically oriented openings over 12 inches or larger in any dimension where entry by a child could cause injury or death shall be covered with childproof, non-clogging trash racks, except where such

openings carry perennial stream flows. Design openings less than 6 inches in any dimension shall be covered with a pipe screen (e.g., Neenah R-7512 or equivalent). Measures to completely drain detention/retention basins in the event of clogging of the primary design opening(s) shall be incorporated into the design of basin outlet structures. Basin outlet pipes shall have a minimum inside diameter of 15 inches or a cross-sectional area of 176 square inches, except that pipes under a 25-foot or greater fill shall not be less than 24 inches or a cross-sectional area of 453 square inches, and shall consist of reinforced concrete.

Outlet aprons shall be designed and shall extend at a minimum to the toe of the basin slope. Where spillways will be used to manage peak discharges in excess of the 10-year storm, such spillways shall be constructed to withstand the pressures of impounded waters and convey flows at computed outlet velocities without erosion.

- (5) When the Pennsylvania Department of Environmental Protection requires facilities to be permitted, the designer shall submit all information to the PA DEP Regional Office, and obtain all necessary approvals and permits pursuant to Pennsylvania Code, Title 25, Chapter 105, Dam Safety and Encroachment Act.
- (6) Downstream Analysis.
 - a. Where deemed necessary by the City of Williamsport, the applicant shall submit an analysis of the impacts of detained stormwater flows on downstream areas within the watershed, established with the concurrence of the City of Williamsport. The analysis shall include hydrologic and hydraulic calculations necessary to determine the impact of peak discharge modifications of the proposed development on critical locations such as dams, tributaries, existing developments; undersized culverts, and flood prone areas.
 - b. Review and comment of the analysis by the downstream City of Williamsport shall be obtained as deemed necessary.
- (7) Detention basins may be waived by the City of Williamsport at sites in close proximity to larger receiving streams, depending on the hydrology of the watershed. This is to facilitate drainage prior to main stream flooding. It shall be incumbent upon the applicant to demonstrate that no downstream increase in stream flooding or channel erosion will result in accordance with this Article, and that no increases in peak discharge within the receiving stream will occur as outlined in this Article.
- (8) Multiple Use Basins. The design and construction of multiple use stormwater detention facilities are strongly encouraged. In addition to stormwater management; where appropriate, facilities allow for recreational uses included: ball fields, play areas, picnic grounds, etc. Provision for parking

facilities within basins and permanent wet ponds with stormwater management capabilities may also be appropriate. Prior approval and consultation with the City of Williamsport are required before design. Multiple use basins should be constructed so that potentially dangerous conditions are not created.

- (9) Multiple Development Basins. Stormwater management facilities designed to serve more than one property or development in the same watershed are encouraged. Staged construction of existing or proposed multiple-use detention facilities by several developers in conjunction with watershed development is encouraged. Each applicant shall be responsible for the incremental increase in stormwater runoff generated by the respective development and incremental construction improvements necessary for the overall detention facility. Prior approval and consultation with the City of Williamsport is required before design of such facilities.
- (10) Alternative Detention Facilities. Alternative stormwater detention facilities including roof top, subsurface basins or tanks and in-pipe detention storage, or other approved alternative designs are permitted as determined by the City of Williamsport.

- (i) All calculations shall be submitted to the City of Williamsport on computation sheets acceptable to the reviewer for approval. If the City of Williamsport determines through review and independent computation that the size(s) of storm pipes or detention basins is insufficient, the City of Williamsport may require the applicant to increase the size(s) of said storm pipes or detention basins.

If the storm drainage system design is completed on a computer installation, sufficient supporting data shall be provided to allow comprehensive review by City officials.

- (j) When the elevation of any existing or proposed entrance to a structure, including windows, is lower than the elevation of the public cartway serving that site, a drainage plan shall be submitted, reviewed and approved as part of the zoning permit process for the proposed structure.
- (k) The City of Williamsport may require that stormwater management facilities located outside of existing or proposed right-of-ways shall be located within and accessible by easements as follows:
 - (1) Drainage Easements. Where a tract is traversed by a watercourse, drainageway, channel or stream, there shall be provided a drainage easement, paralleling the line of such watercourse, drainageway, channel or stream. The width of the drainage easement will be adequate to preserve the unimpeded flow of natural drainage in the 100-year floodplain.

Drainage easements shall provide for maintenance, and for the purpose of widening, deepening, improving or protecting such drainage facilities.

- (2) Access Easements. Where proposed stormwater management facilities are not adjacent to proposed or existing public right-of-ways or are not accessible due to physical constraints, as determined by the City of Williamsport, a 20-foot wide passable access easement specifying rights of entry shall be provided. Access easements shall provide for vehicle ingress and egress on grades of less than 10 percent for carrying out inspection or maintenance activities.
 - (3) Maintenance Easements. A maintenance easement shall be provided which encompasses the stormwater facility and appurtenances and provides for access for maintenance purposes. The maintenance easement must be located at least 20 feet outside of the 100-year surface elevation and the stormwater facility and appurtenances.
 - (4) Easements shall stipulate that no trees, shrubs, structures, excavation, or fill be placed, and no regrading is to be performed within the area of the easement without written approval from the City of Williamsport. Upon approval, such landscaping may be placed in maintenance easements, provided it does not impede access.
 - (5) Whenever practicable, easements shall be parallel to width and linked to property lines of the subdivision.
 - (6) All easement agreements shall be recorded with a reference to the recorded easement indicated on the site plan. The format and content of the easement agreement shall be reviewed and approved by the City of Williamsport.
- (l) Sinkhole Protection.
- (1) Stormwater from roadways, parking lots, storm sewers, roof drains, or other concentrated stormwater runoff paths shall not be discharged directly into sinkholes.
 - (2) To protect sensitive Karst areas, the City of Williamsport may require basins to contain an impervious liner. The liner may be of the impervious membrane type, placed in accordance with the manufacturer's recommendations, or an approved alternative as approved by the City of Williamsport.
- (m) Erosion and Sedimentation Control.

All plans for erosion and sediment pollution control (E&SPC) shall meet the requirements of the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. §691.1 et seq. and 25 Pa.Code 102.1 et seq., Erosion Control.

It shall be the responsibility of the applicant to submit the E&SPC plan, application, and other necessary material to the Conservation District or DEP Office, as appropriate. A copy of the transmittal letter shall be provided to the City of Williamsport.

Comments shall be received and. E&SPC plan approval obtained from the Conservation District prior to stormwater plan approval.

- (n) Minor SWM Plan. A minor SWM plan is required per §1393.02(c) and as outlined in Appendix C. Minor SWM plans shall consist of the following, and are not subject to §1393.03, "Volume Controls," and §1393.04, "Rate Controls," of this Title. Minor plan preparation steps are as follows:

- (1) Prepare a scaled drawing showing key features of the site.

The plan can be developed from a tax map, site survey, or other accurate drawing of the site. The property and boundaries should be accurate in scale. The plan should include:

- a. A line showing the limit and location of area(s) that will be cleared for regulated activities such as buildings, driveways and lawns.
- b. The location of all structures, existing and proposed (house, shed, garage, etc.). Include driveways, parking areas, any other impervious surfaces, well and septic system locations.
- c. The location of property boundaries, any streams or wetlands, and separation distances of structure(s) to any water body or stream.
- d. The angle/slope of the property in relation to any water body or stream.

- (2) Calculate the volume of stormwater runoff created by the project.

Identify the newly created impervious areas. Note on the plan the area of each proposed structure and impervious surface (paved, walkways, etc.) and calculate the sum of the areas. For example:

- a. 20' x 20' shed = 400 sf
- b. 6' x 60' sidewalk = 360 sf
- c. Total Impervious Area = 760 sf

- (3) Calculate the volume of stormwater runoff.

For minor projects, multiply the total square footage of newly created total impervious area by (2.85 in/12 in/ft). For example:

$$760 \text{ sf} \times (0.2375 \text{ ft.}) = 180.5 \text{ cubic feet}$$

(2.85 in is the 2-year, 24-hour rainfall for Williamsport, PA, taken from NOAA's Hydrometeorological Design Studies Center Precipitation Fre-

quency Data Server for Point Precipitation Frequency Estimates from NOAA Atlas 14).

- (4) Identify/choose the appropriate stormwater control measures. Size and place the measures on the project site, and add the measures to the SWM plan.

The volume of stormwater runoff calculated in Step #3 is now used to size the stormwater control storage devices. Vegetative controls and structural measures can be used individually or in combination to provide the required storage volume. The PA BMP Manual identifies structural and non-structural control measures that may be used, as well as instructions to calculate the volume provided by each.

Please note that all minor stormwater management plans should provide appropriate erosion control measures. Refer to subsection (m) above. The PA *Erosion and Sediment Pollution Control Program Manual* is available for guidance. Please contact the Lycoming County Conservation District for additional information.

A sample minor stormwater management plan can be found in Appendix D.

- (o) All regulated activities that do not fall under the exemption criteria referenced herein shall submit a drainage plan to the City of Williamsport for review. These criteria shall apply to the total proposed development even if development is to take place in stages. Impervious cover shall include, but not be limited to, any roof, parking or driveway areas and any new streets and sidewalks. Any areas designed to initially be gravel or crushed stone shall be considered to be impervious for the purposes of comparison to the waiver criteria, unless they are installed and maintained as provided for in the PA BMP Manual.
 - (1) Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses, except as modified by stormwater management facilities or open channels consistent with this Title.
 - (2) Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this Title. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the applicant must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from the concentrated discharge.
 - (3) Where a development site is traversed by watercourses, drainage easements shall be provided conforming to the line of such watercourses. The terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the easement. Also, maintenance, including mowing of vegetation

within the easement shall be required, except as approved by the appropriate governing authority.

- (4) When it can be shown that, due to topographic conditions, natural drainageways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural drainageways shall be subject to approval by PA DEP through the joint permit application process, or, where deemed appropriate by PA DEP, through the general permit process.
- (5) Any stormwater management facilities regulated by this Title that would be located in or adjacent to waters of the Commonwealth or wetlands shall be subject to approval by PA DEP through the joint permit application process, or where deemed appropriate by PA DEP, the general permit process. When there is a question whether wetlands may be involved, it is the responsibility of the applicant or his agent to show that the land in question cannot be classified as wetlands, otherwise approval to work in the area must be obtained from PA DEP.
- (6) Any stormwater management facilities regulated by this Title that would be located on State highway rights-of-way shall be subject to approval by the Pennsylvania Department of Transportation (PA DOT).
- (7) Minimization of impervious surfaces and infiltration of stormwater runoff through seepage beds, infiltration trenches, etc., are encouraged, where soil conditions permit, to reduce the size or eliminate the need for detention facilities.
- (8) In order to promote overland flow and infiltration, roof drains should not discharge directly to streets or storm sewers. Roof drains may discharge directly to streets or storm sewers when deemed necessary by the City of Williamsport. Under no circumstances shall roof drains discharge directly to sanitary sewer systems.

(Ord. 6211. Approved 4-15-2012.)

ARTICLE 1394
Stormwater Management (SWM) Site Plan Requirements

1394.01	Plan contents.	1394.06	Authorization to construct and term of validity.
1394.02	Plan submission.	1394.07	As-built plans, completion certificate and final inspection.
1394.03	Plan review.		
1394.04	Modification of plans.		
1394.05	Resubmission of disapproved stormwater management site plans.		

1394.01 PLAN CONTENTS.

The following items shall be included in the SWM site plan:

- (a) Appropriate sections from the Municipal Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM site plans. In instances where the City of Williamsport lacks Subdivision and Land Development regulations, the content of SWM site plans shall follow the County's Subdivision and Land Development Ordinance.
- (b) The City of Williamsport shall not approve any SWM site plan that is deficient in meeting the requirements of this Title. At its sole discretion and in accordance with this Article, when a SWM site plan is found to be deficient, the City of Williamsport may either disapprove the submission and require a resubmission, or in the case of minor deficiencies the City of Williamsport may accept submission of modifications.
- (c) Provisions for a permanent access or maintenance easement for all physical SWM BMPs, such as ponds and infiltration structures, as necessary to implement the operation and maintenance plan discussed in subsection (i)(9) below.
- (d) The following signature block for the City of Williamsport:

“(Municipal Official or designee), on this date (date of signature) has reviewed and hereby certifies that the SWM site plan meets all design standards and criteria of the Municipal Ordinance No. (Number assigned to the Ordinance).”
- (e) The following signature block for the registered professional preparing the plan:

“I, _____, hereby certify on this date (date of signature) that the stormwater management plan meets all design standards and criteria of the Ordinance No. (Number assigned to the Ordinance).”
- (f) The following statement by the owner:

“I/we hereby acknowledge that I/we and/or my/our assignees/grantees shall be responsible for maintenance of the stormwater management system shown hereon, in accordance with approved stormwater management ownership and maintenance plan for this project, and that such stormwater system shall remain as a permanent fixture that cannot be altered, replaced, or removed without prior written approval from the City of Williamsport.”

- (g) A note indicating that as-built plans will be submitted by a qualified professional for all stormwater facilities prior to occupancy, or the release of the surety bond. The City of Williamsport reserves the right to authorize the Municipal Engineer to review said as-built plans.
- (h) All permits required by the Pennsylvania Department of Environmental Protection, Pennsylvania Department of Transportation (PA DOT), and U.S. Army Corps of Engineers (USACE) and other regulatory agencies.
- (i) The SWM site plan shall provide the following information:
 - (1) The overall stormwater management concept for the project.
 - (2) A determination of site conditions in accordance with the PA BMP Manual.¹ A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or karst topography, and other environmentally sensitive areas such as brownfields.
 - (3) Stormwater runoff design computations and documentation as specified in this Title, or otherwise necessary to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Title, including the recommendations and general requirements in §1393.01.
 - (4) Expected project time schedule.
 - (5) A soil erosion and sediment control plan, where applicable, as prepared for and approved by the approval authority.
 - (6) The effect (in terms of runoff volumes, water quality, and peak flows) on surrounding properties and aquatic features and on any existing stormwater conveyance system that may be affected by the project.
 - (7) Plans and profile drawings of all SWM BMPs including open channel structures, pipes, open channels, and swales shall be at the discretion of the City of Williamsport.
 - (8) SWM site plan shall show the locations of existing watercourses and existing and proposed on-lot wastewater facilities, water supply wells, and infiltration areas.

- (9) The SWM site plan shall include an operation and maintenance (O&M) plan, for all existing and proposed physical stormwater management facilities. This plan shall address long-term ownership and responsibilities for operation and maintenance.
- (10) Horizontal and vertical profiles of any existing and proposed watercourses, drainageways, channels or streams, including hydraulic capacity.
- (11) Hydrologic and hydraulic computations for all existing and proposed stormwater management facilities and measures.
- (12) Stormwater management both during and after development.
- (13) Unless specifically exempted in writing, the following must also be shown on the SWM site plan, prepared in a form which meets the requirements for recording in the Office of the Register and Recorder of Lycoming County, Pennsylvania:
 - a. Annotated maps, drawings, engineering plans, and construction details. Said plan shall be prepared by a registered professional land surveyor, qualified geologist, landscape architect, architect, or engineer licensed in the State of Pennsylvania, with said preparer's seal and registration number affixed to the plan. Plans for tracts of less than 20 acres shall be drawn at a scale of one inch equals no more than 50 feet; for tracts of 20 acres or more, plans shall be drawn at a scale of 1 inch equals no more than 200 feet. Plans shall be submitted on the following sheet sizes: 18" x 24", 24" x 36", or 36" x 42". All lettering shall be drawn to a size to be legible if the plans are reduced to half size. All sheets comprising a submission shall be on one size.
 - b. The name of the proposed development and the name and address of the owner of the property and the individual or firm preparing the plan.
 - c. Date of submission and revision, graphic scale, and North arrow.
 - d. Total tract boundary with distances marked to the nearest foot and bearings to the nearest degree and the total acreage of the tract.
 - e. Key map (drawn to scale) showing all existing natural and man-made features beyond the property boundary affected by the project and the extent of the watershed or sub-basin which drains through the project site for 1,000 feet or as specified by the City of Williamsport.
 - f. Existing and proposed topographic contours shall be provided at intervals not greater than 5 feet for existing and proposed conditions. Topographic contours at intervals less than 5 feet may be required for flat sites, and to depict certain existing and future stormwater manage-

ment features. The reference datum used to develop topographic contours shall be stated on the plans.

- g. Existing and proposed use, including the total area of impervious surfaces after construction.
- h. Location and selected plant material used for vegetative filter paths to sinkholes, stream buffers, buffer yards, wetlands, streams, and other waters of the Commonwealth, and the location of all notices to be posted, as specified in this Title.
- i. If stormwater management facilities are off-site, a note on the plan referring to location and agreements indicating responsibility for conveyance to and maintenance of the facilities; all such off-site facilities shall meet the design standards and criteria specified in this Title, and details of the facilities shall be included with the plan.

(Ord. 6211. Approved 4-15-2012.)

1394.02 PLAN SUBMISSION.

- (a) Five copies of the SWM site plan shall be submitted to the City of Williamsport or Ordinance Administrator for distribution to the City Engineer, County Conservation District, County Planning Commission, and other agencies as applicable.
- (b) Additional copies shall be submitted as requested by the City of Williamsport, Ordinance Administrator or DEP.

(Ord. 6211. Approved 4-15-2012.)

1394.03 PLAN REVIEW.

- (a) The SWM site plan shall be reviewed by a qualified professional for the City of Williamsport for consistency with the provisions of this Title. After review, the qualified professional shall provide a written recommendation for the City of Williamsport to approve or disapprove the SWM site plan. If it is recommended to disapprove the SWM site plan, the qualified professional shall state the reasons for the disapproval in writing. The qualified professional also may recommend approval of the SWM site plan with conditions and, if so, shall provide the acceptable conditions for approval in writing. The SWM site plan review and recommendations shall be completed within the time allowed by the Municipalities Planning Code for reviewing subdivision plans.
- (b) The City of Williamsport shall notify the applicant in writing within 45 calendar days whether the SWM site plan is approved or disapproved. If the SWM plan involves a subdivision or land development plan, the notification period is 90 days. If a longer notification period is provided by other statute, regulation, or ordinance, the applicant will be so notified by the City of Williamsport. If the City of Williamsport disapproves the SWM plan, the City of Williamsport shall cite the reasons for disapproval in writing.

- (c) The City of Williamsport's approval of a SWM site plan shall be valid for a period not to exceed 5 years. This 5-year time period shall commence on the date that the City of Williamsport signs the approved SWM site plan. If stormwater management facilities included in the approved SWM site plan have not been constructed, or if an as-built survey (if required) of these facilities has not been approved within this 5-year time period, then the City of Williamsport may consider the SWM site plan disapproved and may revoke any and all permits. SWM site plans that are considered disapproved by the City of Williamsport shall be resubmitted in accordance with §1394.05 of this Title. The 5-year time period may be renewed for a single 5-year term upon request of the applicant if there have been no adopted or pending revisions to the SWM Ordinance.
- (d) A SWM site plan may be adjusted revised and resubmitted in accordance with above.
- (e) Failure of the City of Williamsport or ordinance administrator to render a decision and communicate it to the applicant within 90 days (except when a plan is being reviewed concurrently with another development approval), in which case the time limit for the concurrent development permit shall apply, shall be deemed an approval of the plan.

(Ord. 6211. Approved 4-15-2012.)

1394.04 MODIFICATION OF PLANS.

A modification to a submitted SWM site plan that involves a change in SWM BMPs or techniques, or that involves the relocation or re-design of SWM BMPs, or that is necessary because soil or other conditions are not as stated on the SWM site plan as determined by the City of Williamsport, shall require a resubmission of the modified SWM site plan in accordance with this Article.

(Ord. 6211. Approved 4-15-2012.)

1394.05 RESUBMISSION OF DISAPPROVED STORMWATER MANAGEMENT SITE PLANS.

A disapproved SWM site plan may be resubmitted, with the revisions addressing the City of Williamsport's concerns, to the City of Williamsport in accordance with this Article. The applicable review fee must accompany a resubmission of a disapproved SWM site plan.

(Ord. 6211. Approved 4-15-2012.)

1394.06 AUTHORIZATION TO CONSTRUCT AND TERM OF VALIDITY.

The City of Williamsport's approval of a SWM site plan authorizes the regulated activities contained in the SWM site plan for a maximum term of validity of 5 years following the date of approval unless otherwise authorized by the City of Williamsport. The City of Williamsport may specify a term of validity shorter than 5 years in the approval for any specific SWM site plan. Terms of validity shall commence on the date the City of Williamsport signs the approval for a SWM site plan. If an approved SWM site plan is not completed according to §1394.07 within the term of validity, then the City of Williamsport may consider the SWM site plan disapproved and

may revoke any and all permits. SWM site plans that are considered disapproved by the City of Williamsport shall be resubmitted in accordance with §1394.05 of this Title.
(Ord. 6211. Approved 4-15-2012.)

1394.07 AS-BUILT PLANS, COMPLETION CERTIFICATE AND FINAL INSPECTION.

- (a) The developer shall be responsible for completing an as-built plan(s) of all SWM BMPs included in the approved SWM site plan. The as-built plans and an explanation of any discrepancies with the construction plans shall be submitted to the City of Williamsport.
- (b) The as-built submission shall include a certification of completion signed by a qualified professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. If any licensed qualified professionals contributed to the construction plans, then a licensed qualified professional must sign the completion certificate.
- (c) After receipt of the completion certification by the City of Williamsport, the City of Williamsport may conduct a final inspection.

(Ord. 6211. Approved 4-15-2012.)

ARTICLE 1395
Operation and Maintenance

1395.01	Responsibilities of developers and landowners.	1395.02	Operation and maintenance agreements.
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1395.01 RESPONSIBILITIES OF DEVELOPERS AND LANDOWNERS.

- (a) The City of Williamsport shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM site plan. The City of Williamsport may require a dedication of such facilities as part of the requirements for approval of the SWM site plan. Such a requirement is not an indication that the City of Williamsport will accept the facilities. The City of Williamsport reserves the right to accept the ownership and operating responsibility for any or the entire stormwater management controls.
 - (b) Facilities, areas, or structures used as stormwater management BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.
 - (c) The operation and maintenance plan shall be recorded as a restrictive deed covenant that runs with the land.
- (Ord. 6211. Approved 4-15-2012.)

1395.02 OPERATION AND MAINTENANCE AGREEMENTS.

The owner is responsible for operation and maintenance of the SWM BMPs. If the owner fails to adhere to the operation and maintenance agreement, the City of Williamsport may perform the services required and charge the owner appropriate fees. Non-payment of fees may result in a lien against the property.

Each stormwater management plan shall contain provisions which clearly set forth the ownership and maintenance responsibility of all permanent stormwater management, and erosion and sediment control facilities. Including:

- (a) Description of maintenance requirements.
- (b) Establishment of suitable easements for access to all facilities by public officials, in accordance with this Article.
- (c) Municipalities are exempt from the requirement to sign and record an operation and maintenance agreement
- (d) Identification of the responsible party or entity for ownership and maintenance of both temporary and permanent stormwater management, and erosion and sediment

pollution control facilities. In meeting this requirement, the following options are hereby provided for upon approval by the City of Williamsport.

Facilities may be incorporated within individual lots so that the respective lot owners will own and be responsible for maintenance in accordance with recorded deed restriction. A description of the facility or system and the terms of the required maintenance shall be incorporated as part of the deed to the property.

Ownership and maintenance may be the responsibility of a Property Owners Association. The stated responsibilities of the Property Owners Association in terms of owning and maintaining the stormwater management facilities shall be submitted with final plans for determination of their adequacy, and upon their approval shall be recorded with the approved subdivision plan among the deed records of Lycoming County, Pennsylvania. In addition, the approved subdivision plan and any deed written from said plan for a lot or lots shown herein shall contain a condition that it shall be mandatory for the owner or owners of said lot to be members of said Property Owners Association.

For stormwater management facilities that are proposed as part of the site development plan, the applicant will be required to execute a developer agreement and a maintenance agreement with the City of Williamsport for the construction and continued maintenance of the facilities prior to the signature approval on the final plan. Access for inspection by the City of Williamsport of all such facilities deemed critical to the public welfare at any reasonable time shall be provided.

In the event the above priorities cannot be achieved, or where it is required, the facilities may be dedicated to the City of Williamsport in accordance with this Title. As a condition of City of Williamsport acceptance of said facilities, the applicant shall provide 15 percent of the cost of improvements, in the form of a maintenance bond, as estimated by the applicant's qualified professional, and approved by the City of Williamsport, to cover contingency maintenance costs for 18 months from the date of stormwater management facilities acceptance of dedication. The 15 percent bond shall be based on the construction costs of the detention basin and outlet structure within the area dedicated to the City of Williamsport.

(Ord. 6211. Approved 4-15-2012.)

ARTICLE 1396
Fees and Expenses

1396.01 General.

1396.01 GENERAL.

The City of Williamsport may include all costs incurred in the review fee charged to an applicant.

The review fee may include, but not be limited to, costs for the following:

- (a) Administrative/clerical processing.
- (b) Review of the SWM site plan.
- (c) Attendance at meetings.
- (d) Inspections.

ARTICLE 1397

Prohibitions

1397.01 Prohibited discharges and connections.

1397.02 Roof drains.

1397.03 Alteration of SWM BMPs.

1397.01 PROHIBITED DISCHARGES AND CONNECTIONS.

- (a) Any drain or conveyance, whether on the surface or subsurface, which allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of this Commonwealth is prohibited.
- (b) No person shall allow, or cause to allow, discharges into surface waters of this Commonwealth which are not composed entirely of stormwater, except (1) as provided in subsection (c) below, and (2) discharges allowed under a State or Federal permit.
- (c) The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of this Commonwealth:

-Discharges from firefighting activities	-Flows from riparian habitats and wetlands
-Potable water sources including water line flushing	-Uncontaminated water from foundations or from footing drains
-Irrigation drainage	-Lawn watering
-Air conditioning condensate	-Dechlorinated swimming pool discharges
-Springs	-Uncontaminated groundwater
-Water from crawl space pumps	-Water from individual residential car washing
-Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used	-Routine external building wash down (which does not use detergents or other compounds)

- (d) In the event that the City of Williamsport or DEP determines that any of the discharges identified in subsection (c), significantly contribute to pollution of the waters of this Commonwealth, the City of Williamsport or DEP will notify the responsible person(s) to cease the discharge.
(Ord. 6211. Approved 4-15-2012.)

1397.02 ROOF DRAINS.

Roof drains and sump pumps shall discharge to infiltration or vegetative BMPs to the maximum extent practicable to satisfy the criteria for disconnected impervious area.
(Ord. 6211. Approved 4-15-2012.)

1397.03 ALTERATION OF SWM BMPs.

No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures, without the prior written approval of the City of Williamsport.
(Ord. 6211. Approved 4-15-2012.)

ARTICLE 1398
Enforcements and Penalties

1398.01	Right-of-entry.	1398.04	Suspensions and revocation.
1398.02	Inspection.	1398.05	Penalties.
1398.03	Enforcement.	1398.06	Appeals.

1398.01 RIGHT-OF-ENTRY.

Upon presentation of proper credentials, the City of Williamsport may enter at reasonable times upon any property within the City of Williamsport to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Title.
(Ord. 6211. Approved 4-15-2012.)

1398.02 INSPECTION.

SWM BMPs should be inspected by the landowner, or the owner's designee (including City of Williamsport for dedicated and owned facilities) according to the following list of minimum frequencies:

- (a) Annually for the first 3 years.
 - (b) Biannually thereafter.
 - (c) During or immediately after the cessation of a storm event.
- (Ord. 6211. Approved 4-15-2012.)

1398.03 ENFORCEMENT.

- (a) It shall be unlawful for a person to undertake any regulated activity except as provided in an approved SWM site plan, unless specifically exempted in §1393.02.
 - (b) It shall be unlawful to violate §1397.03 of this Title or to alter or remove any control structure required by the SWM site plan.
 - (c) Inspections regarding compliance with the SWM site plan are a responsibility of the City of Williamsport.
 - (d) If the City of Williamsport determines at any time that any permanent stormwater management facility has been eliminated, altered, or improperly maintained, the City of Williamsport shall advise the responsible party of required corrective measures, and shall provide said responsible party with a specific time to implement the required corrective measures. If such action is not taken by the property owner, the City of Williamsport may cause the work to be done and back-charge all costs to the property owners in accordance with this Title.
- (Ord. 6211. Approved 4-15-2012.)

1398.04 SUSPENSIONS AND REVOCATION.

- (a) Any approval or permit issued may be suspended or revoked by the City of Williamsport for:
 - (1) Non-compliance with or failure to implement any provision of the approved SWM site plan or operation and maintenance agreement.
 - (2) A violation of any provision of this Title or any other applicable law, ordinance, rule or regulation relating to the regulated activity.
 - (3) The creation of any condition or the commission of any act during the regulated activity which constitutes or creates a hazard or nuisance, pollution, or which endangers the life or property of others.
- (b) A suspended approval may be reinstated by the City of Williamsport when:
 - (1) The City of Williamsport has inspected and approved the corrections to the violations that caused the suspension.
 - (2) The City of Williamsport is satisfied that the violation has been corrected.
- (c) An approval that has been revoked by the City of Williamsport cannot be reinstated. The applicant may apply for a new approval under the provisions of this Title.
- (d) If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the City of Williamsport shall provide a reasonable timeframe for the owner to correct the violation. In these cases, the City of Williamsport will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the City of Williamsport may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Title.

(Ord. 6211. Approved 4-15-2012.)

1398.05 PENALTIES.

Any person who fails to comply with this Title within the period stated in the notice of the designated municipal representative shall, upon conviction thereof, be guilty of a summary offense, and shall be sentenced to pay a penalty of not more than \$300. Each and every day of continued violation and of each specific violation shall constitute a separate violation.

- (a) In the event that the owner, developer, occupant, applicant, property manager or other person responsible fails to comply with the terms of this Title within the time specified by the municipal representative, the City of Williamsport may take any actions necessary to remove the public nuisance. The costs of removal of the violation shall be in addition to any penalties for violations for failure to comply.

- (b) In addition to the fines for violations, costs, and penalties provided for by this Article, the City of Williamsport may institute proceedings in Courts of Equity to require owners and/or occupants of real estate to comply with the provision of this Title.
- (c) The cost of removal, fine, and penalties hereinabove mentioned may be entered by the City of Williamsport as a lien against such property, or properties of individual members of a Property Owners Association, in accordance with existing provisions of law.

(Ord. 6211. Approved 4-15-2012.)

1398.06 APPEALS.

- (a) Any person aggrieved by any action of the City of Williamsport or its designee, relevant to the provisions of this Title, may appeal to the Municipal Appeals Board within 30 days of that action. The Municipal Appeals Board may include a Committee of Stormwater Professionals designated and authorized by the City of Williamsport.
 - (1) The City of Williamsport Appeals Board that is authorized, may grant an appeal to modify the requirements of one or more provisions if the application of this Title will exact undue hardship due to peculiar conditions pertaining to the land in question, providing such modification will not be contrary to the public interest and that the purpose and intent of the ordinance is observed.
 - (2) All requests to the Appeals Board shall be in writing. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision(s) of the ordinance, and the minimum modification necessary.
 - (3) Any request may be referred to the respective municipal planning commission and governing body for advisory comments.
- (b) Any person aggrieved by any decision of the City of Williamsport, relevant to the provisions of this Title, may appeal to the County Court of Common Pleas in the county where the activity has taken place within 30 days of the City of Williamsport's decision.

(Ord. 6211. Approved 4-15-2012.)

ARTICLE 1399
References

1399.01 References.

1399.01 REFERENCES.

1. Pennsylvania Department of Environmental Protection (DEP). No. 363-0300-002 (2006), as amended and updated. *Pennsylvania Stormwater Best Management Practices Manual*. Harrisburg PA.
2. The Pennsylvania Department of Environmental Protection (DEP). 363-2134-008 (2000), as amended and updated. *Erosion and Sediment Pollution Control Program Manual*. Harrisburg, PA.
3. United States Department of Agriculture (USDA), National Resources Conservation Service (NRCS). *National Engineering Handbook*. Part 630: Hydrology, 1969-2001. Originally published as the *National Engineering Handbook*, Section 4: Hydrology. Available online at: <http://www.wcc.nrcs.usda.gov/hydro/hydro-techref-neh-630.html>.
4. United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, 2nd Edition. Washington, D.C.
5. US Department of Commerce (USDC), National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States*, Atlas 14, Volume 2, Silver Spring, Maryland, 20910. Internet address: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.
6. United States Department of Department of Transportation (US DOT), Federal Highway Administration (FHA). 2001. Hydraulic Engineering Circular Number 22 (HEC-22), *Urban Drainage Design Manual*.
7. *PennDOT Drainage Manual*, Publication Number 13, DM-2, Chapter 10, as amended.
8. Commonwealth of Pennsylvania, Storm Water Management Act No. 167. (Ord. 6211. Approved 4-15-2012.)

APPENDIX AOPERATION AND MAINTENANCE AGREEMENT
STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (SWM BMP)

THIS AGREEMENT, made and entered into this _____ day of _____, 200__, by and between _____, (hereinafter the "Landowner"), and _____, Lycoming County, Pennsylvania, (hereinafter "City of Williamsport");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Lycoming County, Pennsylvania, Deed Book _____ at Page _____, (hereinafter "Property").

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the SWM BMP Operation and Maintenance Plan approved by the City of Williamsport (hereinafter referred to as the "Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the City of Williamsport, provides for management of stormwater within the confines of the Property through the use of BMPs; and

WHEREAS, the City of Williamsport, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the City of Williamsport and the protection and maintenance of water quality require that on-site stormwater BMP be constructed and maintained on the Property; and

WHEREAS, the City of Williamsport requires, through the implementation of the SWM Site Plan, that SWM BMP's as required by said Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, his successors and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct the BMPs in accordance with the plans and specifications identified in the SWM Site Plan.
2. The Landowner shall operate and maintain the BMPs as shown on the Plan in good working order accordance with the specific maintenance requirements noted on the approved SWM Site Plan.
3. The Landowner hereby grants permission to the City of Williamsport, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. Whenever possible, the City of Williamsport shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the BMPs per paragraph 2, the City of Williamsport or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). This provision shall not be construed to allow the City of Williamsport to erect any permanent structure on the land of the Landowner. It is expressly understood and agreed that the City of Williamsport is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the City of Williamsport.
5. In the event the City of Williamsport, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the City of Williamsport for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the City of Williamsport.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create or affect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.
7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the City of Williamsport from all damages, accidents, casualties, occurrences or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or City of Williamsport.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Lycoming County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For the City of Williamsport:

(SEAL)

For the Landowner:

ATTEST:

_____ (City, Borough, Township)

County of Lycoming, Pennsylvania

I, _____, a Notary Public in and for the County and State aforesaid, whose commission expires on the _____ day of _____, 20__, do hereby certify that _____ whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day of _____, 20__, has acknowledged the same before me in my said County and State.

GIVEN UNDER MY HAND THIS _____ day of _____, 200__.

NOTARY PUBLIC

(SEAL)

APPENDIX B

DISCONNECTED IMPERVIOUS AREA (DIA)

B.1. Rooftop Disconnection

When rooftop downspouts are directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the rooftop may qualify as completely or partially Disconnected Impervious Area (DIA) and a portion of the impervious rooftop area may be excluded from the calculation of total impervious cover.

A rooftop is considered to be completely or partially disconnected if it meets the requirements listed below:

- The contributing area of rooftop to each disconnected discharge is 500 square feet or less, and
- The soil is not designated as hydrologic soil group "D" or equivalent, and
- The overland flow path from roof water discharge area has a positive slope of 5% or less.

For designs that meet these requirements, the portion of the roof that may be considered disconnected depends on the length of the overland path as designated in Table B.1.

Table B.1: Partial Rooftop Disconnection	
Length of Pervious Flow Path *	Roof Area Treated as Disconnected
(ft)	(% of contributing area)
0 – 14	0
15 – 29	20
30 – 44	40
45 – 59	60
60 – 74	80
75 or more	100
* Flow path cannot include impervious surfaces and must be at least 15 feet from any impervious surfaces.	

B.2. Pavement Disconnection

When pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing pavement area may qualify as Disconnected Impervious Area (DIA) and that area may be excluded from the calculation of total impervious cover. This applies generally only to small or narrow pavement structures such as driveways and narrow pathways through otherwise pervious areas (e.g. a walkway or bike path through a park).

Pavement is disconnected if the pavement, or area adjacent to the pavement, meets the requirements below:

- The contributing flow path over impervious cover is not more than 75 feet, and
- The length of overland flow is greater than or equal to the contributing length, and
- The soil is not designated as hydrologic soil group "D" or equivalent, and
- The slope of the contributing impervious area is 5% or less, and
- The slope of the overland flow path is 5% or less.

If the discharge is concentrated at one or more discrete points, no more than 1000 square feet may discharge to any one point. In addition, a gravel strip or other spreading device is required for concentrated discharges. For non-concentrated discharges along the entire edge of pavement, this requirement is waived; however, there must be provision for the establishment of vegetation along the pavement edge and temporary stabilization of the area until vegetation becomes stabilized.

REFERENCE

Philadelphia Water Department. 2006. *Stormwater Management Guidance Manual*. Section 4.2.2: *Integrated Site Design*. Philadelphia, PA.

APPENDIX C

Stormwater Management Plan (SMP) Requirements

Plan Requirement	Impervious Area*	Disturbed Area*	References
Exempt	<1,000 sq. ft.	<5,000 sq. ft.	§1393.02(a)
May Be Exempt	1,000 sq. ft. to <5,000 sq. ft. if disconnected from impervious areas	5,000 sq. ft. to <20,000 sq. ft. without point source to surface waters	§1393.02(b) Appendix B
Minor SMP	1,000 sq. ft. to < 5,000 sq. ft. if connected to impervious areas	5,000 sq. ft to <20,000 sq. ft with point source to surface waters	§1393.05(n) Appendix B Appendix C
SMP	5,000 sq. ft. or greater	20,000 sq. ft. or greater	

* The measurement of impervious or disturbed areas shall include all of the impervious or disturbed areas in the total proposed development even if development is to take place in stages (§1393.01(f)).

APPENDIX DSAMPLE MINOR STORMWATER MANAGEMENT PLAN

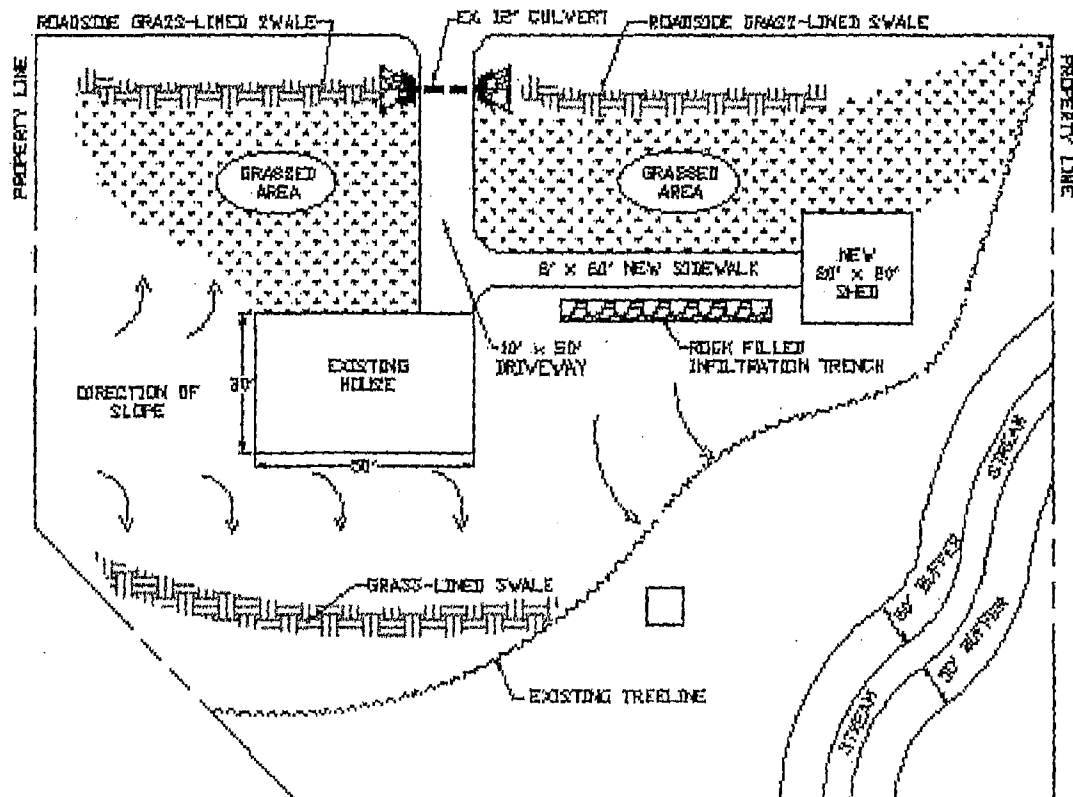
Property Owner _____

Tax ID # _____

Proposed by _____

Date _____ Drawn by _____

Scale _____



2012 Replacement

APPENDIX E
Runoff Coefficients for the Rational Formula
By Hydrologic Soil Group and Overland Slope (%)

	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Cultivated Land	0.08 ^a 0.14 ^b	0.13 0.18	0.16 0.22	0.11 0.16	0.15 0.21	0.21 0.28	0.14 0.20	0.19 0.25	0.28 0.34	0.18 0.24	0.23 0.29	0.31 0.41
Pasture	0.12 0.15	0.20 0.25	0.30 0.37	0.18 0.23	0.28 0.34	0.37 0.45	0.24 0.30	0.34 0.42	0.44 0.52	0.30 0.37	0.40 0.50	0.50 0.62
Open Space	0.10 0.14	0.16 0.22	0.25 0.30	0.14 0.20	0.22 0.28	0.30 0.37	0.20 0.26	0.28 0.35	0.36 0.44	0.24 0.30	0.30 0.40	0.40 0.50
Forest	0.05 0.08	0.08 0.11	0.11 0.14	0.08 0.10	0.11 0.14	0.14 0.18	0.10 0.12	0.13 0.16	0.16 0.20	0.12 0.15	0.16 0.20	0.20 0.25
Residential Lot Size 1/8 Acre	0.25 0.33	0.28 0.37	0.31 0.40	0.27 0.35	0.30 0.39	0.35 0.44	0.30 0.38	0.33 0.42	0.38 0.49	0.33 0.41	0.36 0.45	0.42 0.54
Lot Size 1/4 Acre	0.22 0.30	0.26 0.34	0.29 0.37	0.24 0.33	0.29 0.37	0.33 0.42	0.27 0.36	0.31 0.40	0.36 0.47	0.30 0.36	0.34 0.42	0.40 0.52
Lot Size 1/3 Acre	0.19 0.28	0.23 0.32	0.26 0.35	0.22 0.30	0.26 0.35	0.30 0.39	0.25 0.33	0.29 0.38	0.34 0.45	0.28 0.36	0.32 0.40	0.39 0.50
Lot Size 1/2 Acre	0.16 0.25	0.20 0.29	0.24 0.32	0.19 0.28	0.23 0.32	0.28 0.36	0.22 0.31	0.27 0.35	0.32 0.42	0.26 0.34	0.30 0.38	0.37 0.48
Lot Size 1 Acre	0.14 0.22	0.19 0.26	0.22 0.29	0.17 0.24	0.21 0.28	0.26 0.34	0.20 0.28	0.25 0.32	0.31 0.40	0.24 0.31	0.29 0.35	0.35 0.46
Industrial	0.67 0.85	0.68 0.85	0.68 0.86	0.68 0.85	0.68 0.86	0.69 0.86	0.68 0.86	0.69 0.86	0.69 0.84	0.69 0.86	0.69 0.86	0.70 0.88
Commercial	0.71 0.88	0.71 0.88	0.72 0.89	0.71 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.90	0.72 0.89	0.72 0.89	0.72 0.90
Streets	0.70 0.76	0.71 0.77	0.72 0.79	0.71 0.80	0.72 0.82	0.74 0.84	0.72 0.84	0.73 0.85	0.76 0.89	0.73 0.89	0.75 0.91	0.78 0.95
Meadow	0.05 0.11	0.10 0.16	0.14 0.20	0.05 0.14	0.13 0.19	0.19 0.26	0.12 0.18	0.17 0.23	0.24 0.32	0.16 0.22	0.21 0.27	0.28 0.39
Parking	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97

^a Runoff coefficients for storm recurrence intervals less than 25 years.

^b Runoff coefficients for storm recurrence intervals of 25 years or more.

Source: Rawls, W.J., S.L. Wong and R.H. McCuen, 1981, "Comparison of Urban Flood Frequency Procedures," Preliminary Draft, U.S. Department of Agriculture, Soil Conservation Service, Beltsville, MD.

2012 Replacement

[Home](#)

[Back](#)

[Next](#)

Exhibit 6

Commonwealth of Pennsylvania Code, Chapter 102: Erosion and Sediment Control

CHAPTER 102. EROSION AND SEDIMENT CONTROL**GENERAL PROVISIONS**

- Sec.
102.1. Definitions.
102.2. Scope and purpose.
102.3. [Reserved].
102.4. Erosion and sediment control requirements.
102.5. Permit requirements.
102.6. Permit applications and fees.
102.7. Permit termination.
102.8. PCSM requirements.

**EROSION AND SEDIMENT CONTROL AND POST CONSTRUCTION
STORMWATER MANAGEMENT BMPs**

- 102.11. General requirements.
102.12. [Reserved].
102.13. [Reserved].
102.14. Riparian buffer requirements.
102.21. [Reserved].
102.22. Site stabilization.
102.23. [Reserved].
102.24. [Reserved].

ENFORCEMENT

- 102.31. Applicability.
102.32. Compliance and enforcement provisions.

RESPONSIBILITIES OF LOCAL GOVERNING BODIES

- 102.41. Administration by county conservation districts.
102.42. Notification of application for permits.
102.43. Withholding permits.
102.51. [Reserved].

Authority

The provisions of this Chapter 102 issued under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402), unless otherwise noted.

Source

The provisions of this Chapter 102 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796, unless otherwise noted.

Notes of Decisions*Scope of Regulations*

The Department of Environmental Resources regulations contained in 25 Pa. Code Chapter 102 (relating to erosion control) provide protection against secondary polluting effects should they become imminent. *Delaware County Community College v. Fox*, 342 A.2d 468 (Pa. Cmwlth. 1975).

Cross References

This chapter cited in 7 Pa. Code § 130e.11 (relating to determination of competence); 7 Pa. Code § 130e.31 (relating to determination of competence); 7 Pa. Code § 130e.41 (relating to determination of competence); 25 Pa. Code § 71.21 (relating to content of official plans); 25 Pa. Code § 77.108 (relating to permit for small noncoal operations); 25 Pa. Code § 77.109 (relating to noncoal exploration activities); 25 Pa. Code § 77.111 (relating to permit waiver—solid waste sites); 25 Pa. Code § 77.458 (relating to erosion and sedimentation control plan); 25 Pa. Code § 77.525 (relating to sediment control measures); 25 Pa. Code § 77.527 (relating to sedimentation controls); 25 Pa. Code § 78.18 (relating to disposal and enhanced recovery well permits); 25 Pa. Code § 78.53 (relating to erosion and sedimentation control); 25 Pa. Code § 78.60 (relating to discharge requirements); 25 Pa. Code § 78a.15 (relating to applications requirements); 25 Pa. Code § 78a.53 (relating to erosion and sediment control and stormwater management); 25 Pa. Code § 78a.59c (relating to centralized impoundments); 25 Pa. Code § 78a.60 (relating to discharge requirements); 25 Pa. Code § 78a.65 (relating to site restoration); 25 Pa. Code § 78a.67 (relating to borrow pits); 25 Pa. Code § 78a.68 (relating to oil and gas gathering pipelines); 25 Pa. Code § 78a.68a (relating to horizontal directional drilling for oil and gas pipelines); 25 Pa. Code § 78a.68b (relating to well development pipelines for oil and gas operations); 25 Pa. Code § 83.201 (relating to definitions); 25 Pa. Code § 85.37 (relating to contents of ordinance and regulations submitted by municipality); 25 Pa. Code § 86.6 (relating to extraction of coal incidental to government-financed construction or government-financed reclamation projects); 25 Pa. Code § 87.70 (relating to erosion and sedimentation control plan); 25 Pa. Code § 87.102 (relating to hydrologic balance: effluent standards); 25 Pa. Code § 87.106 (relating to hydrologic balance: sediment control measures); 25 Pa. Code § 87.108 (relating to hydrologic balance: sedimentation ponds); 25 Pa. Code § 88.50 (relating to erosion and sedimentation control plan); 25 Pa. Code § 88.92 (relating to hydrologic balance: effluent standards); 25 Pa. Code § 88.96 (relating to hydrologic balance: sediment control measures); 25 Pa. Code § 88.98 (relating to hydrologic balance: sedimentation ponds); 25 Pa. Code § 88.187 (relating to hydrologic balance: effluent standards); 25 Pa. Code § 88.191 (relating to hydrologic balance: sediment control measures); 25 Pa. Code § 88.194 (relating to hydrologic balance: sedimentation ponds); 25 Pa. Code § 88.292 (relating to hydrologic balance: effluent standards); 25 Pa. Code § 88.296 (relating to hydrologic balance: sediment control measures); 25 Pa. Code § 88.298 (relating to hydrologic balance: sedimentation ponds); 25 Pa. Code § 89.11 (relating to general requirements); 25 Pa. Code § 89.21 (relating to erosion and sedimentation control); 25 Pa. Code § 89.52 (relating to water quality standards, effluent limitations and best management practices); 25 Pa. Code § 89.56 (relating to stream channel diversions); 25 Pa. Code § 90.37 (relating to erosion and sedimentation control); 25 Pa. Code § 90.102 (relating to hydrologic balance: water quality standards, effluent limitations and best management practices); 25 Pa. Code § 90.106 (relating to hydrologic balance: erosion and sedimentation control); 25 Pa. Code § 90.108 (relating to hydrologic balance: sedimentation ponds); 25 Pa. Code § 92a.2 (relating to definitions); 25 Pa. Code § 92a.11 (relating to other chapters applicable); 25 Pa. Code § 92a.12 (relating to treatment requirements); 25 Pa. Code § 92a.26 (relating to application fees); 25 Pa. Code § 92a.29 (relating to CAFO); 25 Pa. Code § 92a.32 (relating to stormwater discharges); 25 Pa. Code § 96.8 (relating to use of offsets and tradable credits from pollution reduction activities in the Chesapeake Bay Watershed); 25 Pa. Code § 105.12 (relating to waiver of permit requirements); 25 Pa. Code § 105.13 (relating to regulated activities—information and fees); 25 Pa. Code § 105.14 (relating to review of applications); 25 Pa. Code § 105.46 (relating to implementation of erosion and sedimentation control plans); 25 Pa. Code § 106.12 (relating to permit applications—information and fees); 25 Pa. Code § 109.503 (relating to public water system construction permits); 25 Pa. Code § 109.1005 (relating to permit requirements); 25 Pa. Code § 250.1 (relating to definitions); 25 Pa. Code § 250.309 (relating to MSCs for surface water); 25 Pa. Code § 250.406 (relating to relationship to surface waterquality requirements); 25 Pa. Code § 273.151 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 273.242 (relating to soil erosion and sedimentation control); 25 Pa. Code § 273.243 (relating to sedimentation ponds); 25

Pa. Code § 275.205 (relating to erosion control); 25 Pa. Code § 277.151 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 277.242 (relating to soil erosion and sedimentation control); 25 Pa. Code § 277.243 (relating to sedimentation ponds); 25 Pa. Code § 279.105 (relating to soil plan); 25 Pa. Code § 279.213 (relating to access roads); 25 Pa. Code § 279.232 (relating to soil erosion and sedimentation control); 25 Pa. Code § 281.132 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 281.212 (relating to access roads); 25 Pa. Code § 281.252 (relating to soil erosion and sedimentation control); 25 Pa. Code § 281.253 (relating to sedimentation ponds); 25 Pa. Code § 283.106 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 283.213 (relating to access roads); 25 Pa. Code § 283.218 (relating to air resources protection); 25 Pa. Code § 283.232 (relating to soil erosion and sedimentation control); 25 Pa. Code § 288.151 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 288.235 (relating to noncontiguous borrow areas); 25 Pa. Code § 288.242 (relating to soil erosion and sedimentation control); 25 Pa. Code § 288.243 (relating to sedimentation ponds); 25 Pa. Code § 289.151 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 289.243 (relating to noncontiguous borrow areas); 25 Pa. Code § 289.252 (relating to soil erosion and sedimentation control); 25 Pa. Code § 289.253 (relating to sedimentation ponds); 25 Pa. Code § 290.408 (relating to storage impoundment—scope); 25 Pa. Code § 291.106 (relating to surface water information); 25 Pa. Code § 291.205 (relating to erosion control); 25 Pa. Code § 293.105 (relating to soil plan); 25 Pa. Code § 293.213 (relating to access roads); 25 Pa. Code § 293.232 (relating to soil erosion and sedimentation control); 25 Pa. Code § 295.132 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 295.212 (relating to access roads); 25 Pa. Code § 295.252 (relating to soil erosion and sedimentation control); 25 Pa. Code § 295.253 (relating to sedimentation ponds); 25 Pa. Code § 297.106 (relating to soil erosion and sedimentation control plan); 25 Pa. Code § 297.213 (relating to access roads); 25 Pa. Code § 297.232 (relating to soil erosion and sedimentation control); 25 Pa. Code § 299.141 (relating to scope); and 25 Pa. Code § 299.153 (relating to storage and containment of coal ash).

GENERAL PROVISIONS

§ 102.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

*ABACT—Antidegradation best available combination of technologies—*Environmentally sound and cost effective treatment, land disposal, pollution prevention and stormwater reuse BMPs that individually or collectively manage the difference in the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm when compared to the stormwater rate, volume and quality prior to the earth disturbance activities to maintain and protect the existing quality of the receiving surface waters of this Commonwealth.

*Accelerated erosion—*The removal of the surface of the land through the combined action of human activities and the natural processes, at a rate greater than would occur because of the natural process alone.

*Act 167—*The Storm Water Management Act (32 P.S. §§ 680.1—680.17)

*Agricultural operation—*The management and use of farming resources for production of crops, livestock, or poultry, or for equine activity.

Agricultural plowing or tilling activity—

- (i) Earth disturbance activity involving the preparation and maintenance of soil for the production of agricultural crops.
- (ii) The term includes no-till cropping methods, the practice of planting crops with minimal mechanical tillage.

Along—Touching or contiguous; to be in contact with; to abut upon.

Animal heavy use area—

- (i) Barnyard, feedlot, loafing area, exercise lot, or other similar area on an agricultural operation where due to the concentration of animals it is not possible to establish and maintain vegetative cover of a density capable of minimizing accelerated erosion and sedimentation by usual planting methods.
- (ii) The term does not include entrances, pathways and walkways between areas where animals are housed or kept in concentration.

BMPs—Best management practices—Activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during, and after earth disturbance activities.

Channel—A natural or manmade water conveyance.

Conservation district—A conservation district, as defined in section 3(c) of the Conservation District Law (3 P.S. § 851(c)), which has the authority under a delegation agreement executed with the Department to administer and enforce all or a portion of the erosion, sediment, and stormwater management program in this Commonwealth.

Conservation plan—A plan that identifies conservation practices and includes site specific BMPs for agricultural plowing or tilling activities and animal heavy use areas.

Disturbed area—Unstabilized land area where an earth disturbance activity is occurring or has occurred.

Earth disturbance activity—A construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of animal heavy use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Erosion—The natural process by which the surface of the land is worn away by water, wind or chemical action.

E&S Permit—Erosion and Sediment Control Permit—A permit required for earth disturbance activities where the earth disturbance is associated with timber harvesting, road maintenance activities, or oil and gas activities.

E&S Plan—Erosion and Sediment Control Plan—A site-specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during and after earth disturbance activities.

Intermittent stream—A body of water flowing in a channel or bed composed primarily of substrates associated with flowing water, which, during periods of the year, is below the local water table and obtains its flow from both surface runoff and groundwater discharges.

Licensed professional—Professional engineers, landscape architects, geologists and land surveyors licensed to practice in this Commonwealth.

Long-term operation and maintenance—The routine inspection, maintenance, repair or replacement of a BMP to ensure proper function for the duration of time that the BMP is needed.

Municipality—A county, city, borough, town, township, school district, institution or authority or another public body created by or pursuant to State law. For purposes of this definition, town includes an incorporated town.

NOI—Notice of Intent—A request, on a form provided by the Department, for coverage under a General NPDES Permit for Stormwater Discharges Associated With Construction Activities or an E&S Permit.

NPDES—National Pollutant Discharge Elimination System—The National system for the issuance of permits under section 402 of the Federal Clean Water Act (33 U.S.C.A. § 1342) including a state or interstate program which has been approved in whole or in part by the EPA, including the regulations codified in Chapter 92 (relating to National Pollutant Discharge Elimination System permitting, monitoring and compliance), and as specified in this chapter.

NPDES Permit for Stormwater Discharges Associated With Construction Activities—A permit required for the discharge or potential discharge of stormwater into waters of this Commonwealth from construction activities, including clearing and grubbing, grading and excavation activities involving 1 acre (0.4 hectare) or more of earth disturbance activity or an earth disturbance activity on any portion, part, or during any stage of, a larger common plan of development or sale that involves 1 acre (0.4 hectare) or more of earth disturbance activity over the life of the project.

Nondischarge alternative—Environmentally sound and cost-effective BMPs that individually or collectively eliminate the net change in stormwater volume, rate and quality for storm events up to and including the 2-year/24-hour storm when compared to the stormwater rate, volume and quality prior to the earth disturbance activities to maintain and protect the existing quality of the receiving surface waters of this Commonwealth.

Normal pool elevation—

(i) For bodies of water which have no structural measures to regulate height of water, the height of water at ordinary stages of low water unaffected by drought.

(ii) For structurally regulated bodies of water, the elevation of the spillway, outlet control, or dam crest which maintains the body of water at a specified height.

(iii) The term does not apply to wetlands.

*Notice of termination—*A request, on a form provided by the Department, to terminate coverage under a General or Individual NPDES Permit for Stormwater Discharges Associated With Construction Activities or other permits under this chapter.

*Oil and gas activities—*Earth disturbance associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.

*Operator—*A person who has one or more of the following:

(i) Oversight responsibility of earth disturbance activity on a project site or a portion thereof who has the ability to make modifications to the E&S Plan, PCSM Plan or site specifications.

(ii) Day-to-day operational control over earth disturbance activity on a project site or a portion thereof to ensure compliance with the E&S Plan or PCSM Plan.

*PCSM—*Post construction stormwater management.

*PCSM plan—*A site-specific plan consisting of both drawings and a narrative that identifies BMPs to manage changes in stormwater runoff volume, rate and water quality after earth disturbance activities have ended and the project site is permanently stabilized.

*PPC plan—Preparedness, Prevention and Contingency Plan—*A written plan that identifies an emergency response program, material and waste inventory, spill and leak prevention and response, inspection program, housekeeping program, security and external factors, and that is developed and implemented at the construction site to control potential discharges of pollutants other than sediment into waters of this Commonwealth.

*Perennial stream—*A body of water flowing in a channel or bed composed primarily of substrates associated with flowing waters and capable, in the absence of pollution or other manmade stream disturbances, of supporting a benthic macro-invertebrate community which is composed of two or more recognizable taxonomic groups of organisms which are large enough to be seen by the unaided eye and can be retained by a United States Standard No. 30 sieve (28 meshes per inch, 0.595 mm openings) and live at least part of their life cycles within or upon available substrates in a body of water or water transport system.

Perimeter BMPs—BMPs placed or constructed along the perimeter of an earth disturbance area to prevent runoff from entering the disturbed area, or to capture and treat sediment runoff prior to leaving a disturbed area.

Permanent stabilization—Long-term protection of soil and water resources from accelerated erosion.

Person—Any operator, individual, public or private corporation, partnership, association, municipality or political subdivision of this Commonwealth, institution, authority, firm, trust, estate, receiver, guardian, personal representative, successor, joint venture, joint stock company, fiduciary; Department, agency or instrumentality of State, Federal or local government, or an agent or employee thereof; or any other legal entity.

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

Post construction stormwater—Stormwater associated with a project site after the earth disturbance activity has been completed and the project site is permanently stabilized.

Project site—The entire area of activity, development, lease or sale including:

- (i) The area of an earth disturbance activity.
- (ii) The area planned for an earth disturbance activity.
- (iii) Other areas which are not subject to an earth disturbance activity.

Riparian buffer—A BMP that is an area of permanent vegetation along surface waters.

Riparian forest buffer—A type of riparian buffer that consists of permanent vegetation that is predominantly native trees, shrubs and forbs along surface waters that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.

Road maintenance activities—

- (i) Earth disturbance activities within the existing road cross-section or railroad right-of-way including the following:
 - (A) Shaping or restabilizing unpaved roads.
 - (B) Shoulder grading.
 - (C) Slope stabilization.
 - (D) Cutting of existing cut slopes.
 - (E) Inlet and endwall cleaning.
 - (F) Reshaping and cleaning drainage ditches and swales.
 - (G) Pipe cleaning.
 - (H) Pipe replacement.
 - (I) Support activities incidental to resurfacing activities such as minor vertical adjustment to meet grade of resurfaced area.

- (J) Ballast cleaning.
- (K) Laying additional ballast.
- (L) Replacing ballast, ties and rails.
- (M) Other similar activities.

(ii) The existing road cross-section consists of the original graded area between the existing toes of fill slopes and tops of cut slopes on either side of the road and any associated drainage features.

Sediment—Soils or other erodible materials transported by stormwater as a product of erosion.

Sedimentation—The action or process of forming or depositing sediment in waters of this Commonwealth.

Soil loss tolerance (T)—The maximum amount of soil loss, in tons/acre/year, that a given soil type can tolerate and still permit a high level of crop production to be sustained economically and indefinitely. T values for various soil types may be obtained from the *Pennsylvania Soil and Water Conservation Technical Guide*, USDA NRCS, 1991 (as amended and updated).

Stabilization—The proper placing, grading, constructing, reinforcing, lining, and covering of soil, rock or earth to ensure their resistance to erosion, sliding or other movement.

Stormwater—Runoff from precipitation, snowmelt, surface runoff and drainage.

Surface waters—Perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps, and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds, and constructed wetlands used as part of a wastewater treatment process.

Timber harvesting activities—Earth disturbance activities including the construction of skid trails, logging roads, landing areas and other similar logging or silvicultural practices.

Top of streambank—First substantial break in slope between the edge of the bed of the stream and the surrounding terrain. The top of streambank can either be a natural or constructed (that is, road or railroad grade) feature, lying generally parallel to the watercourse.

Waters of this Commonwealth—Rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Authority

The provisions of this § 102.1 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.1 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended June 3, 1977, effective June 20, 1977, 7 Pa.B. 1478; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial pages (322707) to (322708) and (313625) to (313626).

Cross References

This section cited in 25 Pa. Code § 78a.1 (relating to definitions).

§ 102.2. Scope and purpose.

(a) This chapter requires persons proposing or conducting earth disturbance activities to develop, implement and maintain BMPs to minimize the potential for accelerated erosion and sedimentation and to manage post construction stormwater.

(b) The BMPs shall be undertaken to protect, maintain, reclaim and restore water quality and the existing and designated uses of waters of this Commonwealth.

Authority

The provisions of this § 102.2 amended under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.2 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial page (313626).

Notes of Decisions*Duty*

Chapter 102 places the burden upon the contractor or other person involved with each disturbance, not the Department, to develop, implement and maintain controls to minimize the potential for accelerated erosion and sedimentation. *Leeward Construction Co. v. Department of Environmental Protection*, 821 A.2d 145 (Pa. Cmwlth. 2003); appeal denied 827 A.2d 431 (Pa. 2003).

§ 102.3. [Reserved].**Source**

The provisions of this § 102.3 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial page (234603).

§ 102.4. Erosion and sediment control requirements.

(a) For agricultural plowing or tilling activities or for animal heavy use areas, the following erosion and sediment control requirements apply:

(1) The implementation and maintenance of erosion and sediment control BMPs are required to minimize the potential for accelerated erosion and sedimentation, including for those activities which disturb less than 5,000 square feet (464.5 square meters).

(2) Written E&S Plans are required for the following activities that disturb 5,000 square feet (464.5 square meters) or more of land:

- (i) Agricultural plowing or tilling activities.
- (ii) Animal heavy use areas.

(3) The landowner, and any lessee, renter, tenant or other land occupier, conducting or planning to conduct agricultural plowing or tilling activities, or operating an animal heavy use area, are jointly and individually responsible for developing a written E&S Plan and implementing and maintaining BMPs, including those identified in the E&S Plan.

(4) The E&S Plan must include cost-effective and reasonable BMPs designed to minimize the potential for accelerated erosion and sedimentation from agricultural plowing or tilling activities and animal heavy use areas.

(i) For agricultural plowing or tilling activities, the E&S Plan must, at a minimum, limit soil loss from accelerated erosion to the soil loss tolerance (T) over the planned crop rotation.

(ii) For agricultural plowing and tilling activities that will occur on fields with less than 25% plant cover or crop residue cover and within 100 feet of a river, or perennial or intermittent stream, additional BMPs shall be implemented to minimize accelerated erosion and sedimentation.

(iii) For animal heavy use areas, the E&S Plan must identify BMPs to minimize accelerated erosion and sedimentation. BMPs and their design standards are listed in the current amended and updated version of the appropriate National Resources Conservation Service conservation practice standards such as Heavy Use Area Protection, Critical Area Planting, Fencing, Wastewater Treatment Strip, Constructed Wetland, Use Exclusion, Animal Trails and Walkways, Diversions and Roof Runoff Structure.

(5) The E&S Plan must contain plan maps that show the location of features including surface waters of this Commonwealth, and drainage patterns, field and property boundaries, buildings and farm structures, animal heavy use areas, roads and crossroads, and BMPs; soils maps; and a description of BMPs including animal heavy use area practices and procedures, tillage systems, schedules, and crop rotations. The plan must be consistent with the current conditions and activities on the agricultural operation.

(6) The E&S Plan must contain an implementation schedule. The plan shall be implemented according to the schedule, and the BMPs shall be operated and maintained as long as there are agricultural plowing or tilling activities or animal heavy use areas, on the agricultural operation.

(7) The portion of a conservation plan that identifies BMPs utilized to minimize accelerated erosion and sedimentation from agricultural plowing or tilling activities, or from operation of animal heavy use areas, may be used to satisfy the E&S Plan requirements of this subsection if it meets the requirements of paragraphs (4)–(6).

(8) The E&S Plan shall be available for review and inspection at the agricultural operation.

(9) Nothing in this section negates the requirements under other provisions of this chapter, such as those applicable to construction activities.

(b) For earth disturbance activities other than agricultural plowing or tilling or animal heavy use areas, the following erosion and sediment control requirements apply:

(1) The implementation and maintenance of E&S BMPs are required to minimize the potential for accelerated erosion and sedimentation, including those activities which disturb less than 5,000 square feet (464.5 square meters).

(2) A person proposing earth disturbance activities shall develop and implement a written E&S Plan under this chapter if one or more of the following criteria apply:

(i) The earth disturbance activity will result in a total earth disturbance of 5,000 square feet (464.5 square meters) or more.

(ii) The person proposing the earth disturbance activities is required to develop an E&S Plan under this chapter or under other Department regulations.

(iii) The earth disturbance activity, because of its proximity to existing drainage features or patterns, has the potential to discharge to a water classified as a High Quality or Exceptional Value water under Chapter 93 (relating to water quality standards).

(3) The E&S Plan shall be prepared by a person trained and experienced in E&S control methods and techniques applicable to the size and scope of the project being designed.

(4) Unless otherwise authorized by the Department or conservation district after consultation with the Department, earth disturbance activities shall be planned and implemented to the extent practicable in accordance with the following:

(i) Minimize the extent and duration of the earth disturbance.

(ii) Maximize protection of existing drainage features and vegetation.

(iii) Minimize soil compaction.

(iv) Utilize other measures or controls that prevent or minimize the generation of increased stormwater runoff.

(5) The E&S Plan must contain drawings and narrative which describe the following:

(i) The existing topographic features of the project site and the immediate surrounding area.

(ii) The types, depth, slope, locations and limitations of the soils.

(iii) The characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

(iv) The volume and rate of runoff from the project site and its upstream watershed area.

(v) The location of all surface waters of this Commonwealth which may receive runoff within or from the project site and their classification under Chapter 93.

(vi) A narrative description of the location and type of perimeter and onsite BMPs used before, during and after the earth disturbance activity.

(vii) A sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities that ensure the proper functioning of all BMPs.

(viii) Supporting calculations and measurements.

(ix) Plan drawings.

(x) A maintenance program which provides for the operation and maintenance of BMPs and the inspection of BMPs on a weekly basis and after each stormwater event, including the repair or replacement of BMPs to ensure effective and efficient operation. The program must provide for completion of a written report documenting each inspection and all BMP repair, or replacement and maintenance activities.

(xi) Procedures which ensure that the proper measures for the recycling or disposal of materials associated with or from the project site will be undertaken in accordance with this title.

(xii) Identification of the naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities and include BMPs to avoid or minimize potential pollution and its impacts from the formations.

(xiii) Identification of potential thermal impacts to surface waters of this Commonwealth from the earth disturbance activity including BMPs to avoid, minimize or mitigate potential pollution from thermal impacts.

(xiv) The E&S Plan shall be planned, designed and implemented to be consistent with the PCSM Plan under § 102.8 (relating to PCSM requirements). Unless otherwise approved by the Department, the E&S Plan must be separate from the PCSM Plan and labeled “E&S” or “Erosion and Sediment Control Plan” and be the final plan for construction.

(xv) Identification of existing and proposed riparian forest buffers.

(6) To satisfy the antidegradation implementation requirements in § 93.4c(b) (relating to implementation of antidegradation requirements), for an earth disturbance activity that requires a permit under this chapter and for which any receiving surface waters of this Commonwealth is classified as High Quality or Exceptional Value under Chapter 93, the person proposing the activity shall, in the permit application, do the following:

(i) Evaluate and include nondischarge alternatives in the E&S Plan, unless a person demonstrates that nondischarge alternatives do not exist for the project.

(ii) If the person makes the demonstration in subparagraph (i) that nondischarge alternatives do not exist for the project, the E&S Plan must include ABACT, except as provided in § 93.4c(b)(1)(iii).

(iii) For purposes of this chapter, nondischarge alternatives and ABACT and their design standards are listed in the *Erosion and Sediment Pollution*

Control Program Manual, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008 (April 2000), as amended and updated.

(7) The Department may approve alternative BMPs which will maintain and protect existing water quality and existing and designated uses.

(8) The E&S Plan, inspection reports and monitoring records shall be available for review and inspection by the Department or the conservation district at the project site during all stages of the earth disturbance activity.

(9) Upon complaint or site inspection, the Department or conservation district may require that the E&S Plan be submitted for review and approval to ensure compliance with this chapter.

(c) The Department may require, or the conservation district after consultation with the Department may require, other information necessary to adequately review a plan, or may require alternative BMPs, on a case-by-case basis, when necessary to ensure the maintenance and protection of water quality and existing and designated uses.

(d) A person proposing or conducting an earth disturbance activity shall obtain the other necessary permits and authorizations from the Department or conservation district, related to the earth disturbance activity, before commencing the earth disturbance activity.

(e) Persons proposing an earth disturbance activity that requires permit coverage under § 102.5 (relating to permit requirements) shall have permit coverage prior to commencing the earth disturbance activity.

Authority

The provisions of this § 102.4 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.4 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended June 3, 1977, effective June 20, 1977, 7 Pa.B. 1478; amended February 3, 1978, effective February 20, 1978, 8 Pa.B. 288; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial pages (336605) to (336608).

Notes of Decisions

Compliance Required

Failure of the DER to notify operators of the requirements for erosion control plans until one and a half years after adoption of the regulations did not excuse an operator from compliance. *Department of Environmental Resources v. Federal Oil and Gas Company*, 73 Pa. D.&C.2d 148 (1975).

Controlling Erosion

The company was required to implement and maintain adequate erosion and sedimentation controls at the site so as to prevent accelerated erosion and sedimentation. *Harbison-Walker Refractories v. Department of Environmental Protection*, 1996 EHB 116.

Under this regulation, control measures and regulations are clearly required, even in development activities where permits are not necessary and safeguards are clearly available to protect against pos-

sible adverse secondary erosion and sedimentation effects in a watershed. *Community College of Delaware County v. Fox*, 342 A.2d 468 (Pa. Cmwlth. 1975).

Limited Liability

An independent drilling contractor who prepared the gas well drilling site for the lessee of an oil and gas lease was not a person engaged in earth moving activities and cannot be charged with failure to develop and implement an erosion control plan, but would be held jointly and severally liable for discharges of oil and drilling fines from the gas well operation site. *Department of Environmental Resources v. Federal Oil and Gas Company*, 73 Pa. D. & C.2d 148 (1975).

Stormwater

Subdivision developer, while engaged in land development activities, had a duty to properly manage storm water runoff. This duty included compliance with a governmental district's request to provide a storm water management plan to enable the township to properly reconstruct a road. *Frisch v. Penn Township*, 662 A.2d 1166 (Pa. Cmwlth. 1995); appeal denied 684 A.2d 559 (Pa. 1996).

Cross References

This section cited in 25 Pa. Code § 102.5 (relating to permit requirements); 25 Pa. Code § 102.6 (relating to permit applications and fees); 25 Pa. Code § 102.7 (relating to permit termination); 25 Pa. Code § 102.8 (relating to PCSM requirements); and 25 Pa. Code § 102.14 (relating to riparian buffer requirements).

§ 102.5. Permit requirements.

(a) Other than agricultural plowing or tilling activities, animal heavy use areas, timber harvesting activities or road maintenance activities, a person proposing an earth disturbance activity that involves equal to or greater than 1 acre (0.4 hectare) of earth disturbance, or an earth disturbance on any portion, part, or during any stage of, a larger common plan of development or sale that involves equal to or greater than 1 acre (0.4 hectare) of earth disturbance, shall obtain an individual NPDES Permit or coverage under a general NPDES permit for Stormwater Discharges Associated With Construction Activities prior to commencing the earth disturbance activity. In addition to other applicable requirements, persons required to obtain an Individual NPDES Permit for Stormwater Discharges Associated With Construction Activities for projects proposed in special protection watersheds shall evaluate and use BMPs in accordance with antidegradation requirements in §§ 102.4(b)(6) and 102.8(h) (relating to erosion and sediment control requirements; and PCSM requirements) regardless of whether the discharge is new, additional or increased.

(b) A person proposing a timber harvesting or road maintenance activity involving 25 acres (10 hectares) or more of earth disturbance shall obtain an E&S Permit under this chapter prior to commencing the earth disturbance activity.

(c) A person proposing oil and gas activities that involve 5 acres (2 hectares) or more of earth disturbance over the life of the project shall obtain an E&S Permit under this chapter prior to commencing the earth disturbance activity.

(d) Other than agricultural plowing or tilling activities, animal heavy use areas, timber harvesting or road maintenance activities, a person proposing earth disturbance activities that involve 5 acres (2 hectares) or more of earth disturbance over the life of the project that do not require a permit under subsections

(a), (b), and (c), shall obtain an E&S Permit under this chapter prior to commencing the earth disturbance activity.

(e) For earth disturbance activities authorized by a permit under this chapter, a preconstruction meeting is required unless the permittee has been notified otherwise in writing by the Department or conservation district. The permittee shall invite the Department or conservation district to attend the preconstruction meeting and provide at least 7 days notice of the preconstruction meeting to all invited attendees. Permittees, co-permittees, operators, and licensed professionals or designees responsible for the earth disturbance activity, including implementation of E&S and PCSM Plans and critical stages of implementation of the approved PCSM Plan, shall attend a preconstruction meeting.

(f) A person proposing earth disturbance activities requiring a permit or permit coverage under this chapter shall be responsible to ensure implementation of the PCSM Plan.

(g) A person proposing or conducting an earth disturbance activity approved under a Department permit issued under a chapter other than Chapter 92 (relating to National Pollutant Discharge Elimination System permitting, monitoring and compliance) or this chapter, which includes requirements to comply with Chapter 92 and this chapter, need not obtain an additional E&S Permit or NPDES Permit for Stormwater Discharges Associated With Construction Activities.

(h) Operators who are not the permittee shall be co-permittees.

(i) A person proposing or conducting an earth disturbance activity associated with discharging dredged or fill material to waters of the United States which is required to obtain a permit or coverage under a permit under section 404 of the Federal Clean Water Act (33 U.S.C.A. § 1344) need not obtain an additional E&S Permit or NPDES Permit for Stormwater Discharges Associated With Construction Activities for the area of disturbance covered by the Clean Water Act section 404 permit.

(j) A person proposing or conducting agricultural plowing or tilling activities or animal heavy use areas is not required to obtain an E&S Permit, or an NPDES Permit for Stormwater Discharges Associated With Construction Activities, for these activities under this chapter.

(k) A person proposing or conducting an earth disturbance activity who is not required to obtain a permit under this chapter shall comply with the other provisions of this chapter.

(l) A person shall prepare and implement a PPC Plan when storing, using or transporting materials including: fuels, chemicals, solvents, pesticides, fertilizers, lime, petrochemicals, wastewater, wash water, core drilling wastewater, cement, sanitary wastes, solid wastes or hazardous materials onto, on or from the project site during earth disturbance activities. The PPC Plan shall be available upon request by the Department or conservation district.

(m) The Department may issue general permits for activities not subject to NPDES requirements.

(1) *Authorization.* The Department may issue a general permit on a regional or Statewide basis or limited to specific watersheds, particular categories of streams or designated geographic regions, for a category of activities not subject to the NPDES requirements, but regulated under this chapter, if the Department determines the following:

- (i) The projects in the category are similar in nature.
- (ii) The projects in the category can be adequately regulated utilizing standardized specifications and conditions, including reference to specific criteria and requirements adopted by another Federal or State agency which adequately regulate the particular category of activities.
- (iii) The projects which are in the category and meet the specifications and conditions will comply with this chapter.
- (iv) The projects which are in the category in the opinion of the Department are more appropriately controlled under a general permit than under individual permits.
- (v) The projects which are in the category individually and cumulatively do not have the potential to cause significant adverse environmental impact.

(2) *Contents of general permits.* Each general permit issued by the Department will include the following contents:

- (i) A concise description of the category of activity covered by the general permit, including exceptions to that category.
- (ii) A specification of the watersheds, streams or geographic areas where the general permit is effective.
- (iii) A set of standardized specifications for the particular category of activity or a reference to specific criteria and requirements adopted by another Federal or State agency which adequately regulates the particular category of activity.
- (iv) A set of conditions governing the activities, operation, maintenance, inspection and monitoring of the projects covered by the general permit as are necessary to assure compliance with this chapter and with other laws administered by the Department.
- (v) A specification of the process for obtaining coverage under and authorization to use the general permit.

(3) *Procedure for issuance.*

- (i) At least 30 days prior to issuance of a general permit, the Department:
 - (A) Will publish notice in the *Pennsylvania Bulletin* of intent to issue a general permit, including the text of the proposed general permit.
 - (B) Will provide an opportunity for interested members of the public, Federal and State agencies to provide written comments on a proposed general permit.
 - (C) May, at its discretion, hold a public hearing on a proposed general permit for the purposes of gathering information and comments.

(ii) Upon issuance of a general permit, the Department will place a notice in the *Pennsylvania Bulletin* of the availability of the general permit.

(4) *Compliance with permit conditions, regulations and laws.* A person who conducts an activity under a general permit issued under this subsection shall comply with the terms and conditions of the general permit, with this chapter and other applicable laws.

(5) *Administration of general permits.* General permits may be issued, amended, suspended, revoked, reissued or terminated under this chapter. Issuance of a general permit does not exempt a person from compliance with this title.

(6) *Denial of coverage.* The Department may deny, revoke, suspend or terminate coverage under a general permit for failure to comply with The Clean Streams Law (35 P.S. §§ 691.1—691.1001), this chapter or the conditions of the general permit and the Department may require the person to apply for an individual permit.

Authority

The provisions of this § 102.5 amended under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.5 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial pages (336608) and (272271).

Notes of Decisions

If an erosion and sedimentation control plan, together with supplementary material submitted, includes numerous drawings detailing the topography of the area, results of test borings, and a soil description, then the plan contains sufficient information as to topographic features and soil characteristics. *Mignatti Construction Co., Inc. v. Environmental Hearing Board*, 411 A.2d 860 (Pa. Cmwlth. 1980).

Cross References

This section cited in 25 Pa. Code § 78a.15 (relating to applications requirements); 25 Pa. Code § 78a.55 (relating to control and disposal planning; emergency response for unconventional wells); 25 Pa. Code § 78a.65 (relating to site restoration); 25 Pa. Code § 78a.67 (relating to borrow pits); 25 Pa. Code § 78a.68a (relating to horizontal directional drilling for oil and gas pipelines); 25 Pa. Code § 102.4 (relating to erosion and sediment control requirements); 25 Pa. Code § 102.6 (relating to permit applications and fees); and 25 Pa. Code § 102.43 (relating to withholding permits).

§ 102.6. Permit applications and fees.

(a) *Permit requirements.* A person proposing or conducting an earth disturbance activity which requires a permit under § 102.5 (relating to permit requirements) shall:

(1) Submit to the Department or a conservation district a complete application or NOI, an E&S Plan meeting the requirements of § 102.4 (relating to erosion and sediment control requirements), a PCSM Plan meeting the requirements of § 102.8 (relating to PCSM requirements), and other information the Department may require. Unless otherwise specified in this chapter, for NPDES

permits, the application or NOI must also meet the requirements in Chapter 92 (relating to National Pollutant Discharge Elimination System permitting, monitoring and compliance).

(2) Provide proof of consultation with the Pennsylvania Natural Heritage Program (PNHP) regarding the presence of a State or Federal threatened or endangered species on the project site. If the Department or conservation district determines, based upon PNHP data or other sources, that the proposed earth disturbance activity may adversely impact the species or critical habitat, the person proposing the earth disturbance activity shall consult with the Department or conservation district to avoid or prevent the impact. If the impact cannot be avoided or prevented, the person proposing the activity shall demonstrate how the impacts will be minimized in accordance with State and Federal laws pertaining to the protection of threatened or endangered flora and fauna and their habitat.

(b) *Permit fees.*

(1) A person submitting a permit application or NOI shall submit a fee as follows: a \$500 administrative filing fee for general permits and a \$1,500 administrative filing fee for individual permits. In addition, \$100 for each disturbed acre is required to be added to the base administrative filing fee for projects of 1 acre or greater of disturbance. The fees will be calculated based upon the following formula: base fee plus \$100 for each disturbed acre. For fractional acreage, the acreage shall be rounded to the closest whole number.

(2) The Department will review the adequacy of the fees established in this section at least once every 3 years and provide a written report to the EQB. The report will identify any disparity between the amount of program income generated by the fees and the costs to administer these programs, and contain recommendations to adjust fees to eliminate the disparity, including recommendations for regulatory amendments.

(3) Conservation districts may charge additional fees in accordance with section 9(13) of the Conservation District Law (3 P.S. § 857(13)).

(4) A Federal or State agency or independent State commission that provides funding for program administration by the Department through terms and conditions of a mutual agreement may be exempt from the fees in this section.

(5) Fees collected by the Department or conservation district under this chapter will be deposited into a restricted revenue account known as the Clean Water Fund and utilized to offset the operating costs to administer the program.

(c) *Complete applications or NOI.*

(1) An application or NOI for a permit is not complete until the necessary information and requirements under The Clean Streams Law (35 P.S. §§ 691.1—691.1001) and this chapter have been satisfied by the applicant.

(2) When the Department or conservation district determines that an application or NOI is incomplete or contains insufficient information to determine compliance with this chapter, it will notify the applicant in writing. The applicant shall have 60 days to provide the information necessary to complete the application or NOI, or the Department or conservation district will consider the application to be withdrawn by the applicant. Requests for a specific extension

may be sought by the applicant in writing. The applicant will be notified in writing when an application or NOI is considered withdrawn. When an application or NOI is considered withdrawn, the Department or conservation district will close the application file and take no action to review the file.

(3) If the application has been withdrawn in accordance with subsection (c)(2), the fees associated with filing the application will not be refunded.

Authority

The provisions of this § 102.6 issued under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.6 adopted December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial pages (272271) to (272272).

Cross References

This section cited in 25 Pa. Code § 78a.15 (relating to applications requirements).

§ 102.7. Permit termination.

(a) Upon permanent stabilization of the earth disturbance activity under § 102.22(a)(2) (relating to permanent stabilization), and installation of BMPs in accordance with an approved plan prepared and implemented in accordance with §§ 102.4 and 102.8 (relating to erosion and sediment control requirements; and PCSM requirements), the permittee or co-permittee shall submit a notice of termination to the Department or conservation district.

(b) The notice of termination must include:

- (1) The facility name, address and location.
- (2) The operator name and address.
- (3) The permit number.
- (4) The reason for permit termination.

(5) Identification of the persons who have agreed to and will be responsible for long-term operation and maintenance of the PCSM BMPs in accordance with § 102.8(m) and proof of compliance with § 102.8(m)(2).

(c) Until the permittee or co-permittee has received written approval of a notice of termination, the permittee or co-permittee will remain responsible for compliance with the permit terms and conditions including long-term operation and maintenance of all PCSM BMPs on the project site and is responsible for violations occurring on the project site. The Department or conservation district will conduct a final inspection and approve or deny the notice of termination within 30 days.

Authority

The provisions of this § 102.7 issued under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.7 adopted December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial page (272272).

Cross References

This section cited in 25 Pa. Code § 102.8 (relating to PCSM requirements).

§ 102.8. PCSM requirements.

(a) *PCSM applicability.* After November 19, 2010, a person proposing a new earth disturbance activity that requires permit coverage under this chapter or other new Department permit that requires compliance with this chapter shall be responsible to ensure that a written PCSM Plan is developed, implemented, operated and maintained in accordance with this section. A person conducting earth disturbance activities under a permit issued before November 19, 2010, and renewed prior to January 1, 2013, shall implement, operate and maintain the PCSM requirements in accordance with the terms and conditions of the existing permit. After January 1, 2013, the renewal of a permit issued before November 19, 2010, shall comply with this section.

(b) *General PCSM planning and design.* The management of post construction stormwater shall be planned and conducted to the extent practicable in accordance with the following:

- (1) Preserve the integrity of stream channels and maintain and protect the physical, biological and chemical qualities of the receiving stream.
- (2) Prevent an increase in the rate of stormwater runoff.
- (3) Minimize any increase in stormwater runoff volume.
- (4) Minimize impervious areas.
- (5) Maximize the protection of existing drainage features and existing vegetation.
- (6) Minimize land clearing and grading.
- (7) Minimize soil compaction.
- (8) Utilize other structural or nonstructural BMPs that prevent or minimize changes in stormwater runoff.

(c) *Consistency with E&S Plan.* The PCSM Plan shall be planned, designed and implemented to be consistent with the E&S Plan under § 102.4(b) (relating to erosion and sediment control requirements).

(d) *Separate plan.* Unless otherwise approved by the Department, the PCSM Plan must be separate from the E&S Plan and labeled “PCSM” or “Post Construction Stormwater Management Plan” and be the final plan for construction.

(e) *PCSM Plan preparer requirements.* The PCSM Plan shall be prepared by a person trained and experienced in PCSM design methods and techniques applicable to the size and scope of the project being designed.

(f) *PCSM Plan contents.* The PCSM Plan must contain drawings and a narrative consistent with the requirements of this chapter. The PCSM Plan shall be designed to minimize the threat to human health, safety and the environment to the greatest extent practicable. PCSM Plans must contain at a minimum the following:

- (1) The existing topographic features of the project site and the immediate surrounding area.
 - (2) The types, depth, slope, locations and limitations of the soils and geologic formations.
 - (3) The characteristics of the project site, including the past, present and proposed land uses and the proposed alteration to the project site.
 - (4) An identification of the net change in volume and rate of stormwater from preconstruction hydrology to post construction hydrology for the entire project site and each drainage area.
 - (5) An identification of the location of surface waters of this Commonwealth, which may receive runoff within or from the project site and their classification under Chapter 93 (relating to water quality standards).
 - (6) A written description of the location and type of PCSM BMPs including construction details for permanent stormwater BMPs including permanent stabilization specifications and locations.
 - (7) A sequence of PCSM BMP implementation or installation in relation to earth disturbance activities of the project site and a schedule of inspections for critical stages of PCSM BMP installation.
 - (8) Supporting calculations.
 - (9) Plan drawings.
 - (10) A long-term operation and maintenance schedule, which provides for inspection of PCSM BMPs, including the repair, replacement, or other routine maintenance of the PCSM BMPs to ensure proper function and operation. The program must provide for completion of a written report documenting each inspection and all BMP repair and maintenance activities and how access to the PCSM BMPs will be provided.
 - (11) Procedures which ensure that the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs are in accordance with Department laws, regulations and requirements.
 - (12) An identification of naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and development of a management plan to avoid or minimize potential pollution and its impacts.
 - (13) An identification of potential thermal impacts from post construction stormwater to surface waters of this Commonwealth including BMPs to avoid, minimize or mitigate potential pollution from thermal impacts.
 - (14) A riparian forest buffer management plan when required under § 102.14 (relating to riparian buffer requirements).
 - (15) Additional information requested by the Department.
- (g) *PCSM Plan stormwater analysis.* Except for regulated activities that require site restoration or reclamation, and small earth disturbance activities identified in subsection (n), PCSM Plans for proposed activities requiring a permit under this chapter require the following additional information:

(1) Predevelopment site characterization and assessment of soil and geology including appropriate infiltration and geotechnical studies that identify location and depths of test sites and methods used.

(2) Analysis demonstrating that the PCSM BMPs will meet the volume reduction and water quality requirements specified in an applicable Department approved and current Act 167 stormwater management watershed plan; or manage the net change for storms up to and including the 2-year/24-hour storm event when compared to preconstruction runoff volume and water quality. The analysis for the 2-year/24-hour storm event shall be conducted using the following minimum criteria:

(i) Existing predevelopment nonforested pervious areas must be considered meadow in good condition or its equivalent except for repair, reconstruction or restoration of roadways or rail lines, or construction, repair, reconstruction or restoration of utility infrastructure when the site will be returned to existing condition.

(ii) When the existing project site contains impervious area, 20% of the existing impervious area to be disturbed must be considered meadow in good condition or better, except for repair, reconstruction or restoration of roadways or rail lines, or construction, repair, reconstruction, or restoration of utility infrastructure when the site will be returned to existing condition.

(iii) When the existing site contains impervious area and the existing site conditions have public health, safety or environmental limitations, the applicant may demonstrate to the Department that it is not practicable to satisfy the requirement in subparagraph (ii), but the stormwater volume reduction and water quality treatment will be maximized to the extent practicable to maintain and protect existing water quality and existing and designated uses.

(iv) Approaches other than that required under paragraph (2) may be proposed by the applicant when the applicant demonstrates to the Department that the alternative will either be more protective than required under paragraph (2) or will maintain and protect existing water quality and existing and designated uses by maintaining the site hydrology, water quality, and erosive impacts of the conditions prior to initiation of any earth disturbance activities.

(3) Analysis demonstrating that the PCSM BMPs will meet the rate requirements specified in an applicable Department approved and current Act 167 stormwater management watershed plan; or manage the net change in peak rate for the 2-, 10-, 50-, and 100-year/24-hour storm events in a manner not to exceed preconstruction rates.

(i) Hydrologic computations or a routing analysis are required to demonstrate that this requirement has been met.

(ii) Exempt from this requirement are Department- approved direct discharges to tidal areas or Department-approved no detention areas.

(iii) Approaches other than that required under paragraph (3) may be proposed by the applicant when the applicant demonstrates to the Depart-

ment that the alternative will either be more protective than required under paragraph (3) or will maintain and protect existing water quality and existing and designated uses by maintaining the preconstruction site hydrologic impact.

(4) Identification of the methodologies for calculating the total runoff volume and peak rate of runoff and provide supporting documentation and calculations.

(5) Identification of construction techniques or special considerations to address soil and geologic limitations.

(6) The Department may require, or after consultation with the Department a conservation district may require additional information necessary to adequately review a PCSM Plan or may require additional BMPs, on a case-by-case basis, when necessary to ensure the restoration, maintenance and protection of water quality and existing and designated uses.

(h) *PCSM implementation for special protection waters.* To satisfy the anti-degradation implementation requirements in § 93.4c(b) (relating to implementation of antidegradation requirements), an earth disturbance activity that requires a permit under this chapter and for which any receiving water that is classified as High Quality or Exceptional Value under Chapter 93, the person proposing the activity shall, in the permit application, do the following:

(1) Evaluate and include nondischarge alternatives in the PCSM Plan unless a person demonstrates that nondischarge alternatives do not exist for the project.

(2) If the person makes the demonstration in paragraph (1) that nondischarge alternatives do not exist for the project, the PCSM Plan must include ABACT, except as provided in § 93.4c(b)(1)(iii).

(3) For purposes of this chapter, nondischarge alternatives and ABACT and their design standards are listed in the *Pennsylvania Stormwater Best Management Practices Manual* Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-0300-002 (December 2006), as amended and updated.

(i) *Complaint or site inspection.* Upon complaint or site inspection, the Department or conservation district may require that the PCSM Plan be submitted for review and approval to ensure compliance with this chapter.

(j) *PCSM reporting and recordkeeping.* The PCSM Plan, inspection reports and monitoring records shall be available for review and inspection by the Department or the conservation district.

(k) *Licensed professional oversight of critical stages.* A licensed professional or a designee shall be present onsite and be responsible during critical stages of implementation of the approved PCSM Plan. The critical stages may include the installation of underground treatment or storage BMPs, structurally engineered BMPs, or other BMPs as deemed appropriate by the Department or the conservation district.

(l) *Final certification.* The permittee shall include with the notice of termination “Record Drawings” with a final certification statement from a licensed professional, which reads as follows:

“I (name) do hereby certify pursuant to the penalties of 18 Pa.C.S.A. § 4904 to the best of my knowledge, information and belief, that the accompanying record drawings accurately reflect the as-built conditions, are true and correct, and are in conformance with Chapter 102 of the rules and regulations of the Department of Environmental Protection and that the project site was constructed in accordance with the approved PCSM Plan, all approved plan changes and accepted construction practices.”

(1) The permittee shall retain a copy of the record drawings as a part of the approved PCSM Plan.

(2) The permittee shall provide a copy of the record drawings as a part of the approved PCSM Plan to the person identified in this section as being responsible for the long-term operation and maintenance of the PCSM BMPs.

(m) *PCSM long-term operation and maintenance requirements.*

(1) The permittee or co-permittee shall be responsible for long-term operation and maintenance of PCSM BMPs unless a different person is identified in the notice of termination and has agreed to long-term operation and maintenance of PCSM BMPs.

(2) For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance for PCSM BMPs and provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the notice of termination under § 102.7(b)(5) (relating to permit termination).

(3) For Commonwealth owned property, a covenant that runs with the land is not required until the transfer of the land containing a PCSM BMP occurs. Upon transfer of the Commonwealth-owned property containing a PCSM BMP, the deed must comply with this subsection.

(4) The person responsible for performing long-term operation and maintenance may enter into an agreement with another person including a conservation district, nonprofit organization, municipality, authority, private corporation or other person, to transfer the responsibility for PCSM BMPs or to perform long-term operation and maintenance and provide notice thereof to the Department.

(5) A permittee or co-permittee that fails to transfer long-term operation and maintenance of the PCSM BMP or otherwise fails to comply with this

requirement shall remain jointly and severally responsible with the landowner for long-term operation and maintenance of the PCSM BMPs located on the property.

(n) *Regulated activities that require site restoration or reclamation, and small earth disturbance activities.* The portion of a site reclamation or restoration plan that identifies PCSM BMPs to manage stormwater from oil and gas activities or mining activities permitted in accordance with Chapters 78 and 86—90; timber harvesting activities; pipelines; other similar utility infrastructure; Department permitted activities involving less than 1 acre of earth disturbance; or abandoned mine land reclamation activities, that require compliance with this chapter, may be used to satisfy the requirements of this section if the PCSM, reclamation or restoration plan meets the requirements of subsections (b), (c), (e), (f), (h), (i) and (l) and, when applicable, subsection (m).

Authority

The provisions of this § 102.8 issued under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.8 adopted August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861.

Cross References

This section cited in 25 Pa. Code § 78a.65 (relating to site restoration); 25 Pa. Code § 102.4 (relating to erosion and sediment control requirements); 25 Pa. Code § 102.6 (relating to permit applications and fees); 25 Pa. Code § 102.7 (relating to permit termination); and 25 Pa. Code § 102.14 (relating to riparian buffer requirements).

EROSION AND SEDIMENT CONTROL AND POST CONSTRUCTION STORMWATER MANAGEMENT BMPs

§ 102.11. General requirements.

(a) *BMP and design standards.* A person conducting or proposing to conduct an earth disturbance activity shall:

(1) Design, implement and maintain E&S BMPs to minimize the potential for accelerated erosion and sedimentation to protect, maintain, reclaim and restore water quality and existing and designated uses. Various E&S BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual (Manual)*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008 (April 2000), as amended and updated.

(2) If required to develop a PCSM Plan, design, implement and maintain PCSM BMPs to mimic preconstruction stormwater runoff conditions to protect, maintain, reclaim and restore water quality and existing and designated uses. Various PCSM BMPs and their design standards are listed in the *Pennsylvania Stormwater Best Management Practices Manual* (Stormwater BMP Manual),

Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-0300-002 (December 2006), as amended and updated.

(3) If required to develop a riparian forest buffer, design, implement and maintain the buffer in accordance with § 102.14 (relating to riparian buffer requirements). Various design, construction and maintenance standards are listed in the *Riparian Forest Buffer Guidance*, (*Buffer Guidance*), Commonwealth of Pennsylvania, Department of Environmental Protection, No. 395-5600-001 (2009), as amended and updated.

(4) If required to develop a PPC Plan, the person shall design, implement, and maintain the PPC Plan to protect waters of this Commonwealth from discharges of pollutants from accidental spills, releases or other activities and meet the requirements identified in Chapter 91 (relating to general provisions). Guidance for PPC Plans is included in the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated.

(b) *Alternative BMP and design standards.* BMPs and design standards other than those listed in the manuals or *Buffer Guidance* may be used when a person conducting or proposing to conduct an earth disturbance activity demonstrates to the Department that the alternate BMP or design standard minimizes accelerated erosion and sedimentation or manages stormwater during and after the completion of earth disturbance activities to achieve the regulatory standards in subsection (a).

(c) *Incorporation of Federal effluent limitation guidelines and standards for the construction and development point source category, 40 CFR Part 450.* Activities requiring an NPDES permit under this chapter must also comply with 40 CFR Part 450 (relating to construction and development point source category), including all appendices thereto, which are incorporated by reference to the extent that these provisions are applicable and not contrary to Pennsylvania law. In the event of any conflict between Federal and Pennsylvania regulatory provisions, the provision expressly set out in this chapter shall be utilized unless the Federal provision is more stringent.

(d) *Effective date.* The amendments to this chapter adopted by the EQB on May 17, 2010, are effective November 19, 2010.

Authority

The provisions of this § 102.11 amended under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.11 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial page (266249).

Cross References

This section cited in 25 Pa. Code § 102.8 (relating to PCSM requirements).

§ 102.12. [Reserved].**Source**

The provisions of this § 102.12 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial pages (203741) to (203742).

§ 102.13. [Reserved].**Source**

The provisions of this § 102.13 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial pages (203742) to (203743).

§ 102.14. Riparian buffer requirements.**(a) General requirements for mandatory riparian buffers.**

(1) Except as in accordance with subsection (d), persons proposing or conducting earth disturbance activities when the activity requires a permit under this chapter may not conduct earth disturbance activities within 150 feet of a perennial or intermittent river, stream, or creek, or lake, pond or reservoir when the project site is located in an exceptional value or high quality watershed attaining its designated use as listed by the Department at the time of application and shall protect any existing riparian buffer in accordance with this section.

(2) Except as in accordance with subsection (d), persons proposing or conducting earth disturbance activities when the activity requires a permit under this chapter where the project site is located in an Exceptional Value or High Quality watershed where there are waters failing to attain one or more designated uses as listed in Category 4 or 5 on Pennsylvania's Integrated Water Quality Monitoring and Assessment report, as amended and updated, at the time of the application, and the project site contains, is along or within 150 feet of a perennial or intermittent river, stream, or creek, lake, pond or reservoir shall, in accordance with the requirements of this section do one of the following:

- (i) Protect an existing riparian forest buffer.
- (ii) Convert an existing riparian buffer to a riparian forest buffer.
- (iii) Establish a new riparian forest buffer.

(b) *Riparian forest buffer criteria.* To qualify as a riparian forest buffer under this chapter, an existing, converted or newly established riparian forest buffer, whether mandatory or voluntary, must meet the following requirements related to composition, width and management:

(1) *Composition.* A riparian forest buffer is a riparian buffer that consists predominantly of native trees, shrubs and forbs that provide at least 60% uniform canopy cover. An existing riparian forest buffer does not have to be altered to establish individual Zones 1 and 2 under subparagraph (iii). At a minimum, it must have a total aggregate width of the combined zones under paragraph (2).

(i) *Existing riparian buffer conversion to a riparian forest buffer.* Riparian buffers that consist predominantly of native woody vegetation that do not satisfy the composition of this paragraph or the width requirements in paragraph (2) shall be enhanced or widened, or both, by additional plantings in open spaces around existing native trees and shrubs that provide at least 60% uniform canopy cover. An existing riparian forest buffer does not have to be altered to establish individual Zones 1 and 2 under subparagraph (iii). At a minimum, it must be a total aggregate width of the combined zones under paragraph (2). Noxious weeds and invasive species shall be removed or controlled to the extent possible.

(ii) *Riparian forest buffer establishment.* On sites without native woody vegetation, a riparian forest buffer shall be established and be composed of zones in accordance with subparagraph (iii), and meet the width requirements in paragraph (2). Noxious weeds and invasive species shall be removed or controlled to the extent possible.

(iii) *Zones.*

(A) *Zone 1.* Undisturbed native trees must begin at the top of the streambank or normal pool elevation of a lake, pond or reservoir and occupy a strip of land measured horizontally on a line perpendicular from the top of streambank or normal pool elevation of a lake, pond or reservoir. Predominant vegetation must be composed of a variety of native riparian tree species.

(B) *Zone 2.* Managed native trees and shrubs must begin at the landward edge of Zone 1 and occupy an additional strip of land measured horizontally on a line perpendicular from the top of streambank or normal pool elevation of a lake, pond or reservoir. Predominant vegetation must be composed of a variety of native riparian tree and shrub species.

(2) *Average minimum widths.*

(i) *Waters other than special protection.* A total of 100 feet (30.5 meters), comprised of 50 feet (15.2 meters) in Zone 1 and 50 feet (15.2 meters) in Zone 2 for newly established riparian forest buffers established under subsection (e)(3) along all rivers, perennial or intermittent streams, lakes, ponds or reservoirs.

(ii) *Special protection waters.* A total of 150 feet (45.7 meters), comprised of 50 feet (15.2 meters) in Zone 1 and 100 feet (30.5 meters) in Zone 2 on newly established riparian forest buffers along all rivers, perennial or intermittent streams, lakes, ponds or reservoirs in special protection waters (high quality and exceptional value designations).

(iii) *Average riparian forest buffer width.* The average riparian forest buffer width shall be calculated based upon the entire length of streambank or shoreline that is located within or along the boundaries of the project site. When calculating the buffer length the natural streambank or shoreline shall be followed.

(3) *Management requirements.* Existing, converted and newly established riparian forest buffers shall be managed in accordance with a riparian forest buffer management plan in paragraph (4) and will be protected in accordance with subsection (g).

(4) *Management plan.* The riparian forest buffer management plan shall be a part of the PCSM Plan and include, at a minimum, the following:

(i) A planting plan for converted or newly established riparian forest buffers that identifies the number, density and species of native trees and shrubs appropriate to geographic location that will achieve 60% uniform canopy cover.

(ii) A maintenance schedule and measures for converted or newly established riparian forest buffers to ensure survival and growth of plantings and protection from competing plants and animals including noxious weeds and invasive species over a 5-year establishment period including activities or practices used to maintain the riparian forest buffer including the disturbance of existing vegetation, tree removal, shrub removal, clearing, mowing, burning or spraying in accordance with long-term operation and maintenance.

(iii) An inspection schedule and measures to ensure long-term maintenance and proper functioning of riparian forest buffers meeting the requirements in paragraph (1), including measures to repair damage to the buffer from storm events greater than the 2-year/24-hour storm.

(c) *Mandatory requirements for all riparian buffers.*

(1) *Management of stormwater into the riparian buffer.* Stormwater and accelerated erosion and sedimentation shall be managed in accordance with §§ 102.4(b)—(e) and 102.8 (relating to erosion and sediment control requirements; and PCSM requirements) to ensure that stormwater enters the area upgrade and along the riparian buffer as sheet flow or shallow concentrated flow during storm events up to and including the 2 year/24 hour storm.

(2) *Wetlands.* Wetlands located in the riparian buffer shall be protected and maintained consistent with Chapter 105 (relating to dam safety and waterway management).

(3) *Measurements.* Riparian buffers must be measured horizontally and perpendicularly to the bank with no more than a 10% variation below the minimum width from the normal pool elevation for lake, pond or reservoir and from top of streambank.

(d) *Exceptions.*

(1) Subsection (a) does not apply for earth disturbance activities associated with the following:

(i) A project site located greater than 150 feet (45.7 meters) from a river, stream, creek, lake, pond or reservoir.

(ii) Activities involving less than 1 acre (0.4 hectare) of earth disturbance.

(iii) Activities when permit coverage is not required under this chapter.

(iv) Activities when a permit or authorization for the earth disturbance activity required under this chapter was obtained, or application submitted prior to November 19, 2010.

(v) Road maintenance activities so long as any existing riparian buffer is undisturbed to the extent practicable.

(vi) The repair and maintenance of existing pipelines and utilities so long as any existing riparian buffer is undisturbed to the extent practicable.

(vii) Oil and gas, timber harvesting, or mining activities for which site reclamation or restoration is part of the permit authorization in Chapters 78 and 86—90 and this chapter so long as any existing riparian buffer is undisturbed to the extent practicable.

(viii) A single family home that is not part of a larger common plan of development or sale and the parcel was acquired by the applicant prior to November 19, 2010.

(ix) Activities authorized by a Department permit under another chapter of this title which contains setback requirements, and the activity complies with those setback requirements.

(2) For earth disturbance activities associated with the following, the Department, or the conservation district after consultation with the Department, may grant a waiver from any of the requirements of subsections (a) and (b) upon a demonstration by the applicant that there are reasonable alternatives for compliance with this section, so long as any existing riparian buffer is undisturbed to the extent practicable and that the activity will otherwise meet the requirements of this chapter:

(i) The project is necessary to abate a substantial threat to the public health or safety.

(ii) Linear projects which may include pipelines, public roadways, rail lines or utility lines.

(iii) Abandoned mine reclamation activities that are conducted under Department authorization or permit.

(iv) Projects of a temporary nature where the site will be fully restored to its preexisting condition during the term of the permit under this chapter.

(v) Redevelopment projects which may include brownfields or use of other vacant land and property within a developed area for further construction or development.

(vi) Projects for which compliance with subsection (a) or (b) is not appropriate or feasible due to site characteristics, or existing structures at the project site.

(3) The applicant shall submit a written request for a waiver to the Department or the conservation district as part of the application for a permit under this chapter.

(4) An applicant requesting a waiver may propose and the Department may allow offsite protection, conversion or establishment of riparian forest buffers or provide compensation to fund riparian forest buffer protection, enhancement or establishment.

(5) Projects qualifying for an exception under this subsection are not relieved from compliance with other applicable requirements of this chapter or other laws administered by the Department.

(e) *Utilization of riparian forest buffers.*

(1) *Antidegradation presumption.* Except for riparian buffers protected under subsection (a)(1) or (d), a riparian forest buffer meeting the requirements of this section will prevent thermal impacts and is a nondischarge alternative. When included in an E&S Plan or PCSM Plan meeting the requirements of this chapter, the proposed earth disturbance activity will satisfy §§ 102.4(b)(6) and 102.8(h), unless data or information provided or available to the Department during the permit application or authorization review process shows that the proposed earth disturbance activity will degrade water quality.

(2) *Trading or offsetting credits.* Except for riparian buffers protected under subsection (a)(1) or (d) when protection of existing, or conversion, or the establishment of a riparian forest buffer which meets the requirements of this section and is above baseline regulatory requirements, credits may be available for trading or offsets in accordance with any procedures established by the Department or any regulations related to trading or offsetting developed under this title.

(3) *Voluntary riparian forest buffer.* Persons that protect, convert or establish a new riparian forest buffer meeting the requirements of this section, may qualify for benefits under paragraph (1) or (2).

(f) *Activities within a riparian buffer.*

(1) The following practices and activities are prohibited within the riparian buffer:

- (i) Soil disturbance by grading, stripping of topsoil, plowing, cultivating or other practices except as allowed in paragraph (3)(i).
- (ii) Draining by ditching, underdrains or other drainage systems.
- (iii) Housing, grazing or otherwise maintaining animals for agricultural or commercial purposes.
- (iv) Storing or stockpiling materials.
- (v) Off-road vehicular travel.

(2) The following practices and activities are allowable in the riparian buffer when authorized by the Department:

- (i) Construction or placement of roads, bridges, trails, storm drainage, utilities or other structures.
- (ii) Water obstructions or encroachments.
- (iii) Restoration projects.

(3) The following practices and activities are allowed within the riparian buffer:

(i) Activities or practices used to maintain the riparian buffer including the disturbance of existing vegetation, and tree and shrub removal, as needed to allow for natural succession of native vegetation and protection of public health and safety.

(ii) Timber harvesting activities in accordance with the riparian forest buffer management plan as part of the PCSM Plan.

(iii) Passive or low impact recreational activities so long as the functioning of the riparian buffer is maintained.

(iv) Emergency response and other similar activities.

(v) Research and data collection activities, which may include water quality monitoring and stream gauging.

(g) *Permanent protection of riparian buffers.*

(1) Existing, converted and newly established riparian buffers including access easements must be protected in perpetuity through deed restriction, conservation easement, local ordinance, permit conditions or any other mechanisms that ensure the long-term functioning and integrity of the riparian buffer.

(2) For any existing or newly established riparian buffer, the boundary limits of the riparian buffer must be identified and clearly marked.

(h) *Reporting.* Persons who protect an existing riparian buffer or convert or establish a riparian buffer in accordance with this section shall complete data forms provided by the Department and submit the forms to the Department or conservation district within 1 year of establishment or protection.

Authority

The provisions of this § 102.14 issued under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.14 adopted August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861; corrected September 17, 2010, effective November 19, 2010, 40 Pa.B. 5294.

Cross References

This section cited in 25 Pa. Code § 102.8 (relating to PCSM requirements); and 25 Pa. Code § 102.11 (relating to general requirements).

§ 102.21. [Reserved].

Source

The provisions of this § 102.21 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial page (203743).

§ 102.22. Site stabilization.

(a) *Permanent stabilization.* Upon final completion of an earth disturbance activity or any stage or phase of an activity, the site shall immediately have topsoil restored, replaced, or amended, seeded, mulched or otherwise permanently stabilized and protected from accelerated erosion and sedimentation.

(1) E&S BMPs shall be implemented and maintained until the permanent stabilization is completed. Once permanent stabilization has been established,

the temporary E&S BMPs shall be removed. Any areas disturbed in the act of removing temporary E&S BMPs shall be permanently stabilized upon completion of the temporary E&S BMP removal activity.

(2) For an earth disturbance activity or any stage or phase of an activity to be considered permanently stabilized, the disturbed areas shall be covered with one of the following:

- (i) A minimum uniform 70% perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation.
- (ii) An acceptable BMP which permanently minimizes accelerated erosion and sedimentation.

(b) *Temporary stabilization.*

(1) Upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities will exceed 4 days, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.

(2) For an earth disturbance activity or any stage or phase of an activity to be considered temporarily stabilized, the disturbed areas shall be covered with one of the following:

- (i) A minimum uniform coverage of mulch and seed, with a density capable of resisting accelerated erosion and sedimentation.
- (ii) An acceptable BMP which temporarily minimizes accelerated erosion and sedimentation.

Authority

The provisions of this § 102.22 amended under sections 5 and 402 of The Clean Streams Law (35 P.S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P.S. § 859(2)).

Source

The provisions of this § 102.22 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial page (266250).

Cross References

This section cited in 25 Pa. Code § 78a.59a (relating to impoundment embankments); 25 Pa. Code § 78a.65 (relating to site restoration); and 25 Pa. Code § 102.7 (relating to permit termination).

§ 102.23. [Reserved].

Source

The provisions of this § 102.23 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial page (203743).

§ 102.24. [Reserved].**Source**

The provisions of this § 102.24 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial page (203744).

ENFORCEMENT**§ 102.31. Applicability.**

The Department or a conservation district may enforce this chapter under The Clean Streams Law (35 P. S. §§ 691.1—691.1001).

Authority

The provisions of this § 102.31 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); section 1920-A of The Administrative Code of 1929 (71 P. S. § 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.31 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended June 3, 1977, effective June 20, 1977, 7 Pa.B. 1478; amended February 3, 1978, effective February 20, 1978, 8 Pa.B. 288; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial pages (203744) to (203745).

Notes of Decisions

The provision concerning a 25-acre requirement found in this section should be read so as to relate merely to permit requirements, not so as to remove parcels of land of less than 25 acres from the protection of erosion and sedimentation controls. *Delaware County Community College v. Fox*, 342 A.2d 468 (Pa. Cmwlth. 1975).

The Department of Transportation does not come within the provisions of 25 Pa. Code § 102.31 (a)(4) with its plan to construct culverts for stream crossings for an expressway project to be carried out in sections of 17 acres at a time. *In re Precision Tube Company, Inc.*, 2 Pa. D. & C.3d 1 (1975).

The Department of Transportation need not obtain an erosion and sedimentation control permit before commencing earth moving activity for construction of an expressway if the plan is developed with and approved by the Soil Conservation Service. *In re Precision Tube Company, Inc.*, 2 Pa. D. & C.3d 1 (1975).

§ 102.32. Compliance and enforcement provisions.

(a) Compliance and enforcement actions under this chapter which may be pursued include the following. The actions listed are cumulative and the exercise of one action does not preclude the exercise of another. The failure to exercise an action will not be deemed to be a waiver of that action:

- (1) Investigations and inspections.
- (2) Response to complaints.
- (3) Orders (including orders to remediate or restore).
- (4) Civil penalty proceedings, except as provided in subsection (b).
- (5) Summary proceedings.
- (6) The suspension, revocation, withholding or denial of permits or approvals.
- (7) Notices of violation.

(8) Actions in a court of competent jurisdiction, including requests for injunctive relief.

(9) Other administrative, civil, criminal or equitable action authorized by law.

(b) If the Department finds that pollution or a danger of pollution results from an act of God in the form of sediment from land for which a complete Conservation Plan has been developed by the conservation district and the Natural Resource Conservation Service, and the plan has been fully implemented and maintained, the landowner shall be excluded from the penalties of The Clean Streams Law (35 P. S. §§ 691.1—691.1001).

(c) A person aggrieved by an action of a conservation district under this chapter shall request an informal hearing with the Department within 30 days following the notice of the action. The Department will schedule the informal hearing and make a final determination within 30 days of the request. Any final determination by the Department under the informal hearing may be appealed to the EHB in accordance with established administrative and judicial procedures.

(d) For enforcement action taken under this subchapter, the Department or conservation district may collect or recover, from the responsible party, costs and expenses involved in taking enforcement action in accordance with this subchapter and initiating cost recovery actions under this subchapter. The Department or conservation district may collect the amount in the same manner as civil penalties are collected under section 605 of The Clean Streams Law (35 P. S. § 691.605).

Authority

The provisions of this § 102.32 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.32 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended June 3, 1977, effective June 20, 1977, 7 Pa.B. 1478; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial pages (266251) to (266252).

RESPONSIBILITIES OF LOCAL GOVERNING BODIES

§ 102.41. Administration by conservation districts.

(a) The Department may delegate by written agreement the administration and enforcement of this chapter to conservation districts if they have adequate and qualified staff, and are, or will be, implementing the program identified in the delegation agreement.

(b) An acceptable program shall have the concurrence and approval of the governing body of the county in which the conservation district operates.

(c) The Department will retain program administration and enforcement over projects which cross the political boundaries of conservation districts unless otherwise authorized by the Department.

Authority

The provisions of this § 102.41 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.41 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial page (266252).

§ 102.42. Notification of application for permits.

A municipality or county which issues building or other permits shall notify the Department or conservation district within 5 days of receipt of an application for a permit involving an earth disturbance activity consisting of 1 acre (0.4 hectare) or more.

Authority

The provisions of this § 102.42 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.42 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial pages (266252) to (266253).

§ 102.43. Withholding permits.

With the exception of local stormwater approvals or authorizations, a municipality or county may not issue a building or other permit or approval to those proposing or conducting earth disturbance activities requiring a Department permit until the Department or a conservation district has issued the E&S or individual NPDES Permit, or approved coverage under the general NPDES Permit for Stormwater Discharges Associated With Construction Activities under § 102.5 (relating to permit requirements).

Authority

The provisions of this § 102.43 amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20); and section 11(2) of the Conservation District Law (3 P. S. § 859(2)).

Source

The provisions of this § 102.43 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; corrected February 17, 1995, effective October 30, 1972, 25 Pa.B. 613; amended December 30, 1999, effective January 1, 2000, 30 Pa.B. 111; amended August 20, 2010, effective November 19, 2010, 40 Pa.B. 4861. Immediately preceding text appears at serial page (266253).

§ 102.51. [Reserved].**Source**

The provisions of this § 102.51 adopted September 29, 1972, effective October 30, 1972, 2 Pa.B. 1796; amended June 3, 1977, effective June 20, 1977, 7 Pa.B. 1478; reserved December 30, 1999, effective January 1, 2000, 30 Pa.B. 111. Immediately preceding text appears at serial pages (203746) to (203747).

[Next page is 103-1.]

102-38

(351874) No. 432 Nov. 10

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Exhibit 7

The City of Williamsport Inventory of Development and Redevelopment Projects Authorized for Construction that Discharge Stormwater into an MS4

The City of Williamsport Inventory of Development and Redevelopment Projects Authorized for Construction that Discharge Stormwater into an MS4 (March 2003 - Present)													
	PROJECT NAME	NPDES Permit	NPDES Permit #	Stormwater During Construction ONLY LID (PCSM BMP Required)	OWNER/PERMITTEE					BMP INSTALLED			
					NAME	CONTACT (OPTIONAL)	ADDRESS	PHONE	TYPE LISTED ON NOI	ADDRESS/ Lat. Long.	INSTALLATION DATE (YEAR)	BMP O&M NCE REQUIRED	ACTUAL INSPECTION/ MAINTENANCE ACTIVITIES
1	Fairfield Inn (Maynard Street)	X	PAG2004104011	x	Susquehanna Assoc. Mgmt. Inc	J & J INN PARTNERS	303 Country Club Drive, Williamsport, PA	570-601-1484	Under Ground Detention; Infiltration Bed	41-14-0; -77-1-50	VERIF	none	per BMP manual, if needed, owner will be notified
2	Wahoo Project	X	PAG2004105006	x	Moran Industries	John Moran	202 Watson, PA 17777		Detention Basin; Veg. Filter Swales; Filter/Buffer Strips	41-14-01; -77-4-28	Installed	none	per BMP manual, if needed, owner will be notified
3	Pennsy Heights Subdivision	X	PAG2004106001	x	Susq Valley Devel Grp	Unable to Locate NOI			Detention Pond		Installed	none	per BMP manual, if needed, owner will be notified
4	DAVID R WEBB COMPANY	X	PAG2004106016	x	DAVID R WEBB CO	Unable to Locate NOI			Wet Detention Pond		Installed	none	per BMP manual, if needed, owner will be notified
5	Susquehanna River Bikeway	X	PAG2004105019	x	Rebecca Burke	Lycoming County	48 W 3rd St, Williamsport, PA	570-320-2124	Surface drain to veg. area	River Walk	Installed	none	per BMP manual, if needed, owner will be notified
6	Sus. Health System	X	PAG2004107017	x	Sus. Health	Dennis Clark	777 Rural Ave, Williamsport, PA	570-321-3750	Bio retention pond			none	per BMP manual, if needed, owner will be notified
7	Linn Street Development	X	PAG2004108002	x	LDG	Lycoming Housing Auth.	1941 Lincoln Drive	570-323-3755	Detention Basin; Dry Extended Detention Basin; Veg Swales; Disconnection from Storm Sewers; Rooftop Disconnection	41-14-10; -77-4-6	Installed	none	per BMP manual, if needed, owner will be notified
8	SEDA COG Newberry bulk Transfer Facility	X	PAG2004108006	x	SEDA COG Joint Rail Authority	Jeff Stover	201 Furnance Rd, Lewisburg, PA	570-524-4491	Infiltration Trench		VERIF	none	per BMP manual, if needed, owner will be notified
9	River valley Transit Garage and Office Renovations	X	PAG2004109001		Kevin Kilpatrick	Unable to Locate NOI						none	per BMP manual, if needed, owner will be notified
10	Susquehanna Health Patient Tower Expansion	X	PAG2004107017	x	Susquehanna Health	Dennis Clark	777 Rural Ave, Williamsport, PA	570-321-3750	Infiltration Trench; Infiltration Basin	41-14-50.95; -77-0-57.47	VERIF	none	per BMP manual, if needed, owner will be notified
11	Construction of Readiness Ctr- Armed Forces Reserve Ctr	X	PAG2004109006	x	Mark Austin-Dept. of Military and vet affairs		Office of Facilities & Engineering; Bldg 0-47, Fort Ind		Detention Basin; Restorion Buffers/Landscape/Floodplain	Penn St/Woodland Ave	Installed	none	per BMP manual, if needed, owner will be notified
12	Church St. Transportation Ctr	X	PAG2004109007	x	River Valley Transit Services		15000 W 3rd St, Williamsport, PA	570-326-2500	Wet Pond; Oil Grit Separators	41-14-24; -77-0-3	VERIF	none	per BMP manual, if needed, owner will be notified
13	SEDA Cog Newberry baulk Transfer Facility Revised	X	PAG2004108006	x	Seda Cog Joint Rail Authority	Unable to Locate NOI			Detention basin/perv. Pave		Installed	none	per BMP manual, if needed, owner will be notified
14	C2 Combined Sewer overflow Compliance	X	PAG2004109009	x	Williamsport Sanitary Authority	LaRue VanZile	253 W 4th St, Williamsport, PA	570-323-6140	Runoff Capture/ Reuse	41-14-37.38; -76-59-25	unverified	none	per BMP manual, if needed, owner will be notified
15	William Street Redevelopment Phase 1	X	PAG02004110012		Williamsport Parking Authority	Unable to Locate NOI						none	per BMP manual, if needed, owner will be notified
16	River Valley Transit Major Mod	X	PAG02004109001	x	River Valley Transit Services		15000 W 3rd St, Williamsport, PA	570-326-2500	Infiltration Trench, Rain Gardens/Bio Retention, Street Sweeping	41-14-16.04; -77-2-17.24	unverified	none	per BMP manual, if needed, owner will be notified
17	William Street Redevelopment Phase 2	X	PAG02004110010		City of Williamsport	Unable to Locate NOI						none	per BMP manual, if needed, owner will be notified
18	BTJ Multi-family Housing	X	PAG02004111011	x	BTJ Investments	Joe Cipriani	801 Sheridan St, Williamsport, PA	570-220-8813	Infiltration Basin; Rain Gardens/Bio Retention	41-15-17.19; -76-59-20.22	Installed	none	per BMP manual, if needed, owner will be notified
19	SEDA COG Rail Wood Site	X	PAG02004111012	x	SEDA COG-Jeff Stover	Jeff Stover	201 Furnance Rd, Lewisburg, PA	570-524-4491	Infiltration Basin	41-13-37.01; -77-4-25.04	unverified	none	per BMP manual, if needed, owner will be notified
20	Roosevelt Middle School Expansion	X	PAG02004111017	x	Williamsport Area School District		2780 W 4th St, Williamsport, PA	570-327-5500	Under Ground Dentention; Oil Grit Separators; Street Sweeping	41-14-17.4; -77-4-5.59	VERIF	none	per BMP manual, if needed, owner will be notified
21	Williamsport High School Fill Site	X	PAG02004111028	x	Jeffery Richards	WASD	2780 W 4th St, Williamsport, PA	570-327-5500	Underground Detention; Increase Time of Concentration	41-14-41.45; -77-4-39.83	VERIF	none	per BMP manual, if needed, owner will be notified
22	River Valley YMCA	X	PAG02004112024	x	RiverValley Regional YMCA		320 Elmira St, Williamsport, PA	570-323-7134	Infiltration Trench; Subsurface Infiltration Bed; Rain Gardens/Bio Retention; Street Sweeping	41-14-42; -77-0-52	installed	none	per BMP manual, if needed, owner will be notified
23	High Steel	X	PAG02004112030	x	Jamie Gartley High Steel Structures, Inc.	Jamie Gartley	3501 West 4th St, Williamsport, PA	570-329-4266	Infiltration Trench	41-13-46; -77-4-41	VERIF	none	per BMP manual, if needed, owner will be notified
24	Eureka Water Treatment Facility	X	PAG02004112006	x	Dan Ertel-Eureka Resources, LLC		419 Second St, Williamsport, PA	570-322-2384	Infiltration Trench; Infiltration Basin; Rain Gardens/Bio Retention; Veg. Swales; Restoration Buffers/Landscape/FloodPlains; Rooftop Disconnection	208 Catawissa Ave, Williamsport, PA	VERIF	none	per BMP manual, if needed, owner will be notified
25	Lycoming College Football Field	X	PAG02004112013	x	Lycoming College	Sue Gaylor	700 College Place, Williamsport, PA	570-321-4219	Underground Detention; Constructed Filters	41-15-18; -77-0-9	VERIF	none	per BMP manual, if needed, owner will be notified
26	WMWA Water Main Upgrade	X	PAG02004112015	x	Williamsport Municipal Water Authority		253 W 4th St, Williamsport, PA	570-323-6140	No BMP Improvements			none	per BMP manual, if needed, owner will be notified
27	WMWA Sewer Rehab & Water Upgrades	X	PAG02004113004	x	Charles Hauser		253 W 4th St, Williamsport, PA	570-323-6140	No BMP Improvements			none	per BMP manual, if needed, owner will be notified
28	Brodart Demolition & Site Remediation	X	PAI044113001	x	City of Williamsport	John Grado	245 W 4th St, Williamsport, PA	570-327-7516	Street Sweeping; Minimize Compaction	41-14-30.2177; -77-2-27.20023	VERIF	none	per BMP manual, if needed, owner will be notified
29	WSA West Plant Phase 2	X	PAG02004113012	x	Charles Hauser	Unable to Locate NOI	253 W 4th St, Williamsport, PA	570-323-6140	Rain garden; Vegetated Swale			none	per BMP manual, if needed, owner will be notified
30	Grove St. Commons	X	PAG02004113017	x	SEDA-COG Housing Development Corp		201 Furnance Rd, Lewisburg, PA	570-524-4491	Rain Gardens; Bio retention pond	Grove St. & Woodland Ave	Installed	none	per BMP manual, if needed, owner will be notified
31	Trade & Transit Centre II	X	PAG02004113010	x	Bill Nichols-RVT		15000 W 3rd St, Williamsport, PA	570-326-2500	Rain Gardens/Bio Retention; Vegetated Swales; Constructed Filters; Rooftop Disconnection; Street Sweeping	Trade & Transit 2	VERIF - 2015	none	per BMP manual, if needed, owner will be notified
32	Phoenix Trim Works Parking Lot	X	PAG02004113023		Phoenix Trim Works-Joseph Leavens	Unable to Locate NOI						none	per BMP manual, if needed, owner will be notified
33	Lycoming College Science Building	X	PAG02004114006		Lycoming College	Unable to Locate NOI						none	per BMP manual, if needed, owner will be notified
34	Providence Place	X	PAG02004114008	x	Gabe Hutchinson	LGN Management LLC	333 Rose St, Williamsport, PA	570-323-5536	Bio-infiltration Areas	1100 Grampian BLVD	installed	none	per BMP manual, if needed, owner will be notified
35	Williamsport HS Field	X	PAG02004114002(1)	x	Jeff Richards	WASD	2780 W 4th St, Williamsport, PA	570-327-5500	Vegetated channels		installed	none	per BMP manual, if needed, owner will be notified
36	Lonza Surface Impoundment	X	PAG02004115011	x	Lonza Inc.-John Robertson		3500 Trenton Ave, Williamsport, PA	570-321-3900	Impoundment Rehab	Williamsport PA	unverified	none	per BMP manual, if needed, owner will be notified
37	Destination 2015-major mod	X	PAG02004115006(1)	x	Williamsport Parking Authority	Liberty Hospitality	1500 Sycamore Rd, Montoursville, PA	570-327-0111	Subsurface Infiltration Bed; Street Sweeping	Liberty Arena	unverified	none	per BMP manual, if needed, owner will be notified
38	Millionaire Drive Reconstruction	X	PAG02004116003	x	Jeffery Richards-Williamsport School District	WASD	2780 W 4th St, Williamsport, PA	570-327-5500	No BMP Improvements			none	per BMP manual, if needed, owner will be notified
39	SR 2014 Section 083A	X	PAC410001	x	Mike Bender-Penn Dot		715 Jordan Ave, Montoursville, PA	570-368-8686	Soil Amendment & Restoration	3rd Street	Proposed	none	per BMP manual, if needed, owner will be notified

The City of Williamsport
Inventory of Development and Redevelopment Projects
Authorized for Construction that Discharge Stormwater into an MS4
(March 2003 - Present)

	PROJECT NAME	NPDES Permit	NPDES Permit #	Stormwater During Construction ONLY LID (PCSM BMP Required)	OWNER/PERMITTEE					BMP INSTALLED			BMP O&M	
					NAME	CONTACT (OPTIONAL)	ADDRESS	PHONE		TYPE LISTED ON NOI	ADDRESS/ Lat. Long.	INSTALLATION DATE (YEAR)	NCE REQUIRED	ACTUAL INSPECTION/ MAINTENANCE ACTIVITIES
40	Grey Fox Rentals	X	PAC410010		x	Steve Krouse		2581 South Reach Road		Subsurface Infiltration Bed; Water Quality Inlet Filters		verified - 2019	none	per BMP manual, if needed, owner will be notified
41	Reach Rd Improvements	X	PAG02004113020		x	City of Williamsport	HRI	245 W 4th St, Williamsport, PA	570-327-7516	Infiltration Trench	41-13-30.75; -77-4-1.45	unverified	none	per BMP manual, if needed, owner will be notified
42	Brandon Park	X	PAC410030		x	City of Williamsport	Jon Sander	245 W 4th St, Williamsport, PA	570-220-1872	2 raingardens	41-14-58.4, -77-00-20.2	verif - May 2020	none	per BMP manual, if needed, owner will be notified
43	2211 Reach Rd	N/A	no NPDES req'd		x	Brian Thompson	Jon Sander or Brian Thompson (prop owner)	245 W 4th St, Williamsport, PA	570-220-1872	pervious pavement in parking lot	41-13-36.6, 77-3-22.3	to be built end of June	none	per BMP manual, if needed, owner will be notified
44	Lycoming College Kraft Gateway Center	X	PAC410021		x	Lycoming College	Tim Maness (project desinger)	One College Place, Williamspo	717-626-2054	rain garden and amended soils	41-14-39.94, 76-59-53.38	verif - built in 2019	none	per BMP manual, if needed, owner will be notified
45	Tiremaster's - Newberry	N/A	no NPDES req'd		x	LYNN & DENISE BARNER	LYNN & DENISE BARNER	675 Arch St	570-322-8473	detention basin	41-14-11.04, 77-3-3.24	2006/2007	none	per BMP manual, if needed, owner will be notified

Exhibit 8

Pollution Prevention and Good Housekeeping Municipal Operations and Maintenance Plan

City of Williamsport
STORMWATER MANAGEMENT PROGRAM

POLLUTION PREVENTION AND GOOD HOUSEKEEPING
MUNICIPAL OPERATIONS AND MAINTENANCE PLAN

The City of Williamsport is required by an NPDES MS4 Individual Permit issued by the PA DEP to develop and implement a Stormwater Management Program, which must include an Operation and Maintenance (O&M) Plan to promote Pollution Prevention / Good Housekeeping within the small regulated MS4. The plan shall address the maintenance of the stormwater conveyance system, as well as, the facilities and activities that could contribute to the discharge of pollutants from the MS4. This plan should also assist in the prevention of non-stormwater discharges, including illegal dumping, into the MS4. Through the implementation of this plan, The City of Williamsport is working to reduce the quantity and improve the quality of stormwater discharged from its regulated small MS4. The O&M Plan utilized by the City to fulfill these requirements is described below:

REQUIREMENT 1: DURING VEHICLE MAINTENANCE, FUELING AND WASHING:
PREVENT ILLICIT DISCHARGES
ENSURE PROPER WASTE DISPOSAL
PREVENT WASTEWATER DISCHARGES OR LEAKS
REQUIRE BMPS
MINIMIZE STORMWATER RUNOFF POLLUTANTS

Maintenance:

Responsible contact – Director of Streets and Parks: 570-326-4684

- Maintain vehicles and equipment regularly. Check for and fix leaks.
- Conduct vehicle and equipment maintenance indoors, when possible. If work must be performed outside, guard against spillage of materials that could discharge to the stormwater conveyance system.
- Keep Spill Kit available at maintenance shop to control small spills.
- Dispose of greasy rags, air filters, degreasers, etc. in appropriate receptacles and take to the Landfill. Dispose of used oil and spent coolant in recycling drums and contact contractor to cleanout container when accumulated. Place other materials in proper waste. Keep trash receptacles closed at all times when not in use.
- Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets or other storm or sewer connections.
- Keep maintenance areas clear of debris. Accumulated scrap material is kept indoors a contained area until it is recycled.
- Waste and recycling containers are located indoors in a controlled area.
- Avoid hosing down work areas. Work areas are typically swept clean and the accumulated waste is disposed in the trash receptacle.
- Put leaking vehicles in the shop and immediately place drip pans under the vehicle.
- Collect leaking or dripping fluids in drip pans or containers.
- Keep drip pans under vehicles to perform vehicle maintenance including, but not limited to unclipping hoses, unscrewing filters or removing other parts.

- Place oil filters in a funnel over waste oil recycling or disposal collection tank to drain excess oil before disposal, then crush and disposed properly.
- Provide secondary containment for all outdoor above ground storage tanks.

Fueling:

Responsible contact – Director of Streets and Parks: 570-326-4684

- When fueling vehicles, watch transfer constantly to prevent overfilling and spilling.
- When fueling vehicles, do not “top off” fuel tanks to prevent overfilling and spilling.
- Control spills immediately. Small spills can be cleaned with rags and larger spills can be cleaned with dry absorbent materials such as Oil Dri absorbent.
- Do not wash petroleum spills into storm drains.
- Report and record spill in Spill Incident Report Form.
- Provide secondary containment for all outdoor above ground storage tanks.

Washing:

Responsible contact – Director of Streets and Parks: 570-326-4684

- Wash municipal vehicles at commercial facilities.

REQUIREMENT 2 : DEVELOP AND IMPLEMENT A POLLUTION PREVENTION PLAN FOR OPERATION AND MAINTENANCE OF ALL FACILITIES WITH POLLUTANT DISCHARGE POTENTIAL

Stormwater Facilities

Operation and Maintenance:

Responsible contact – City Engineer 570-220-1872

- Visually inspect each stormwater inlet and cross pipes within the municipality annually, normally conducted in the spring.
- Record each inlet on the BMP Inventory Sheet.
- Record inspection on an appropriate form.
- Note any cleaning or repair needs on form.
- Schedule inlet cleaning if the depth of the deposits at the bottom of the inlet exceeds one third of the depth between the bottom of the inlet and the invert of the lowest pipe connection.
- Increase the inspection frequency if the deposits are heavily accumulated, further investigation may follow if there appears to be a reason for the increased waste.
- Maintain records of the inspection results and cleaning schedules.
- Collection of the sediment and debris is recycled. If the waste is considered hazardous, a consultant will be contracted to dispose of the waste properly.
- Inspect and maintain SWM BMPs in accordance with the specifications identified in the City’s SWM Ordinance or as otherwise noted in the applicable guidance document (CBPRP and/or Pennsylvania Stormwater Best Management Practices Manual)

Municipal Facilities

Operation and Maintenance:

Responsible contact – City Engineer 570-220-1872

- Observe and monitor pollutants generated by municipal activities. A list of potential pollutants typically associated with municipal activities provided by the United States Environmental Protection Agency.
- Minimize pollutants.
- Capture and properly dispose of pollutants generated by municipal activities in an appropriate manner. If the waste is considered hazardous, a consultant must be contracted to dispose of the waste properly.

Roadways, Parking Lots, and Sidewalks

Operation and Maintenance:

Responsible contact – Director of Streets and Parks: 570-326-4684

- Incorporate a preventative maintenance plan for regular operations and maintenance.
- Pave and/or complete spot repairs with asphalt or cement in dry weather only.
- Clean up fluid leaks or spills from pavement equipment/materials immediately.
- Sweep and vacuum paved areas to remove debris and particulate matter routinely.
- Conduct street sweeping in the developed areas with curbs are swept and vacuumed annually by a contracted company.
- Conduct street sweeping on the rural and other municipal roads in the Spring to remove salt and antiskid; sweep additionally, as needed.
- Complete Fall leaf collection and additional street sweeping, as needed.
- Store road salt and antiskid in a covered location.
- Calibrate salt spreaders for proper application.

Parks and Pool

Operation and Maintenance:

Responsible contact – Director of Streets and Parks: 570-326-4684

- Provide an adequate number of trash receptacles for customers and employees to prevent litter
- Inspect dumpsters and other waste containers periodically. Repair or replace leaky dumpsters or containers.
- Keep dumpsters and other waste containers covered.
- Store pool chemicals, lawn care fuels and chemicals, and other materials indoors, where possible.
- Ensure all chemicals are properly labeled and securely closed.
- Minimize chemical applications, such as fertilizers, pesticides, and herbicides.
- Mow with sharpened blades set at approximately 3 inches high.
- Dechlorinate pool water prior to any discharge, by allowing the disinfectant to dissipate with sunlight or alternative methods

REQUIREMENT 3: DEVELOP EMPLOYEE TRAINING SCHEDULE AND PROGRAM

Municipal Operations

Training Requirements:

Responsible contact – Responsible contact – City Engineer 570-220-1872

The City Engineer is responsible for the overall Pollution Prevention and Good Housekeeping Municipal O&M Plan for the City, including the training requirements. In addition, departmental supervisors are responsible for the daily oversight of their designated department, including training for their staff. At a minimum, SWMP training shall occur annually and shall include:

1. Operation, inspection, maintenance and repair activities associated with the facilities and activities identified that have the potential to generate stormwater runoff to the regulated MS4
2. All relevant parts of the City's Stormwater Management Program that could affect operations, such as illicit discharge detection and elimination, construction sites, and ordinance requirements

When possible, the City will coordinate with surrounding MS4s to consolidate annual training efforts.

The City routinely completes the following trainings as they pertain to activities completed by City employees within the small regulated MS4:

- Provide on-site training for new Personnel/Contractor conducted in an informal manner with hands-on training.
- Train all personnel involved in activities with pollution potential.
- Train relevant emergency personnel in proper spill responses. The local Fire Departments are called in for spills (all fire departments have Hazmat training). The municipality has an Emergency Management Coordinator on staff; he is trained quarterly through Lycoming County's Department of Public Safety.

Exhibit 9

Pollution Prevention and Good Housekeeping 2019 Training Log



MS4: Good Housekeeping for Municipal Operations Annual Compliance Training

Date of Meeting: April 16, 2019 (11:00 AM Session)

	Print Name	Sign Name	MS4 Representing
1	MARK Oeler	Mark T. Oeler	City of Wmspt
2	Shawn Bastian	Shawn Bastian	City of Williamsport
3	David Myers	David L. Myers	City of Williamsport
4	Chad Eckert	Chad Eckert	City of Williamsport
5	Jennifer J. Dudek	Jennifer J. Dudek	City of Wmspt
6	Galen Beach	Galen Beach	City of Wmspt
7	Harold Starr	Harold Starr	City of Wmspt
8	Donald Justice	Donald Justice	City of Wmspt
9	Josh Aikey	Josh Aikey	City of Wmspt
10	Nathan Clark	Nathan Clark	City of Wmspt
11	James O'Brien	James O'Brien	city of wmspt.
12	Tom GOSHALL JR	Tom Goshall Jr	CITY OF WMSPT
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MS4: Good Housekeeping for Municipal Operations Annual Compliance Training

Date of Meeting: April 16, 2019 (1:00pm Session)

	Print Name	Sign Name	MS4 Representing
1	Seott Jolin	Seott Jolin	streets + Parks
2	Keith Segrares	Keith Segrares	Street & Parks
3	Gerald Stegge	[Signature]	Streets + Parks
4	Kevin Early	[Signature]	Streets + Parks
5	Kevin Ames	Kevin Ames	Flood control
6	Tom Cillo	Tom Cillo	WMSP. STREETS / PARKS
7	Dave Cillo	[Signature]	" " "
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Exhibit 10

Pollution Prevention and Good Housekeeping 2020 Training Log



MS4: Good Housekeeping for Municipal Operations Annual Compliance Training 2020

MS4: City of Williamsport

Date: 6/3/20 11:00AM

	Print Name	Sign Name	Title/Position
1	Donald Justice	Donald Just	Dispatch
2	Dave Johns	Dave Johns	
3	Kevin Ames	Kevin Ames	Flood Foreman
4	Tom Wright	Tom Wright	mechanic
5	Jennifer J. Dudek	Jennifer J. Dudek	truck driver
6	Geord Stapp	Geord Stapp	Utility man
7	Ronald B...	Ronald B...	
8	Mark Oeler	M. Oeler	Operator
9	Chad Eckert	Chad Eckert	Forester
10	Dae Myers	Dae Myers	Foreman
11	Galen Beach	Galen Beach	Truck Driver
12	Bill Schweikert	Bill Schweikert	
13	KEVIN EARLY	Kevin Early	Electrician
14	Keith Segaves	Keith Segaves	Traffic foreman
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MS4: Good Housekeeping for Municipal Operations Annual Compliance Training 2020

MS4: City of Williamsport

Date: 6/3/20 1:00pm

	Print Name	Sign Name	Title/Position
1	Scott John	Scott John	City of Wilpo
2	Jon Sunder	Jon Sunder	City of Wilpo
3	Josh Aikeg	Josh Aikeg	G.O.W.
4	Harold Starr	Harold Starr	C.O.W.
5	Nathan Clark	Nathan Clark	COW
6	Tom GORSHALL	Tom GORSHALL	COW
7	Scott Prince	Scott Prince	COW
8	Tim Stafford	Tim Stafford	Sweeper
9	DAVE CILLO	DAVE CILLO	SIGN MAKER
10	James O'Brien	James O'Brien	COW
11	Tom Cillo	Tom Cillo	CITY WMSPT.
12	Shawn Bastien	Shawn Bastien	COW
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