Millersville Borough

100 Municipal Drive

Millersville, PA 17551

MS4 2014 Annual Report

October 2014

WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

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Municipal Separate Storm Sewer System (MS4) Annual Report

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) ANNUAL/PROGRESS REPORT

For the Reporting Period: March 10, 2013 to July 31, 2014

☒ **Annual Report** ☐ **Progress Report** **Due Date:** October 29, 2014
☐ **New Permittee** ☒ **Renewal Permittee**

GENERAL INFORMATION			
Permittee Name:	**Millersville Borough**	NPDES Permit No.:	PAG133587
Mailing Address:	**100 Municipal Drive**	Effective Date:	**August 1, 2013**
City, State, Zip:	**Millersville, PA 17551**	Expiration Date:	**July 31, 2018**
MS4 Contact Person:	**Andrew M. Boxleitner**	Renewal Due Date:	**February 1, 2018**
Title:	**Street Department Superintendent**	Admin. Extended?	☐ Yes ☒ No
Phone:	**717-872-4645**	Municipality:	**Millersville Borough**
Email:	**aboxleitner@millersvilleborough.org**	County:	**Lancaster**
Co-Permittees (if applicable): **N/A**			

WATER QUALITY INFORMATION

Are there any discharges to waters within the Chesapeake Bay Watershed? ☒ Yes ☐ No

Identify all surface waters that receive stormwater discharges from storm sewers within the MS4 urbanized area and provide the requested information (see instructions).

Receiving Water Name	Ch. 93 Class.	Impaired?	Cause(s)	TMDL?	WLA?
Conestoga River	WWF	Yes	Source Unknown - Mercury	No	N/A
UNT to Conestoga River (02050306 004901)	WWF	Yes	Agriculture - Nutrients; Small Residential Runoff - Nutrients & Siltation	No	N/A
UNT to Conestoga River (02050306 004923)	WWF	Yes	Small Residential Runoff - Nutrients & Siltation	No	N/A
UNT to Conestoga River (02050306 004985)	WWF	Yes	Small Residential Runoff - Nutrients & Siltation Golf Courses - Nutrients	No	N/A
UNT to Conestoga River	WWF	No	N/A	No	N/A
Little Conestoga Creek	WWF	Yes	Grazing Related Agriculture - Nutrients & Siltation; Urban Runoff/Storm Sewers - Cause Unknown	No	N/A
UNT to Little Conestoga Creek	WWF	No	N/A	No	N/A

Identify any Wasteload Allocations (WLAs) identified in TMDLs for the MS4, if applicable. Identify the pollutant(s) and mass load(s)):

N/A

GENERAL MINIMUM CONTROL MEASURE (MCM) INFORMATION

Have you completed all MCM activities required by the permit for this reporting period? ☒ Yes ☐ No

Provide current contact name and phone number information for the required MCMs (if same as page 1, leave blank):

MCM	Contact Name	Phone
#1 Public Education and Outreach on Storm Water Impacts	**Andrew M. Boxleitner**	**717-872-4645**
#2 Public Involvement/Participation	**Andrew M. Boxleitner**	**717-872-4645**
#3 Illicit Discharge Detection and Elimination (IDD&E)	**Andrew M. Boxleitner**	**717-872-4645**
#4 Construction Site Storm Water Runoff Control	**Andrew M. Boxleitner**	**717-872-4645**
#5 Post-Construction Storm Water Management in New Development and Redevelopment	**Andrew M. Boxleitner**	**717-872-4645**
#6 Pollution Prevention / Good Housekeeping	**Andrew M. Boxleitner**	**717-872-4645**

MCM #1 – PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS

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

Measurable Goal: *For new permittees a Public Education and Outreach Program (PEOP) shall be developed and implemented during the first year of permit coverage 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.*

1. For new permittees only, attach the written PEOP or a summary thereof to the first report submitted to DEP.

2. If you are not a new permittee, did you complete and submit your written PEOP to DEP? ☐ Yes ☒ No
   If Yes, provide the latest submission date: **In progress**

3. Date of last evaluation of or revision to the PEOP: **July 2014**

4. What were the plans and goals for public education and outreach for the reporting period?

   Plans and goals for the reporting period included continuing to distribute educational information through the Borough website, the local school district and public presentations.

5. Did the MS4 achieve its goal(s) for the PEOP during the reporting period? ☒ Yes ☐ No

   Explain the rationale for your answer:

   During the reporting period, the Borough achieved the goals outlined above by publishing education information on their stormwater website. The Borough continued to include a copy of the Borough MS4 map on their website. The Borough also conducted a public presentation on their MS4 program at the March 25, 2014 Borough Council meeting. The stormwater pamphlet "When It Rains, It Drains" is posted in the Borough office and is also used as a teaching aid for government students at Penn Manor High School. The Borough also has copies of the Lancaster County Conservation District brochures "Erosion & Sedimentation - Transforming Bare Soil into a Greener Tomorrow" and "The Homeowner's Guide to Stormwater" available for free at the Borough office.

6. Identify specific plans and goals for public education and outreach for the upcoming year:

   The Borough plans to continue the public education and outreach methods outlined above.

BMP #2: Develop and maintain lists of target audience groups present within the areas served by your MS4

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.*

1. For new permittees only, attach your target audience list(s) to the first report submitted to DEP.

2. If you are not a new permittee, did you complete and submit your target audience list to DEP? ☐ Yes ☒ No
   If Yes, provide the latest submission date: **In progress**

3. Date of last review or revision to target audience list(s): **July 2014**

BMP #3: Annually publish at least one educational item on your Stormwater Management Program

Measurable Goal: *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 or more of the 6 MCMs.*

1. For new permittees only, attach your published stormwater educational or informational materials to the first report submitted to DEP.

2. If you are not a new permittee, did you complete and submit your published stormwater educational or informational materials to DEP? ☒ Yes ☐ No **See *Attachment 1***
   If Yes, provide the latest submission date: **October 2014**

3. Do you have a municipal newsletter? ☐ Yes ☒ No
   If Yes, how often was it published during the reporting period and what MS4-related material did it contain?

4. Do you have a municipal website? ☒ Yes ☐ No (URL: **www.millersvilleborough.org**)
   If Yes, what MS4-related material does it contain?
   The Borough website contains a link to the MS4 map as well as the brochure "When It Rains, It Drains." The Borough websites also contain links to DEP's website as well as the website for the Lancaster Inter-Municipal Committee and the Lancaster County Clean Water Consortium.

5. Describe any other method(s) used during the reporting period to provide information on stormwater to the public:
   As stated under BMP #1, a presentation regarding the Borough's MS4 program was given during the March 25, 2014 Borough Council meeting. The Borough also has stormwater brochures (listed in BMP #1) available at the Borough office. Copies of the brochures are included in *Attachment 1*.

6. Date of most recent review and/or update to published stormwater educational materials: **July 2014**

7. Identify specific plans for the publication of stormwater materials for the upcoming year:
   The Borough plans to continue to update and add additional information to the Borough website as appropriate. The Borough also plans to continue to work with the local school district when possible.

BMP #4: Distribute stormwater educational materials to the target audiences

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

Identify the two additional methods of distributing stormwater educational materials during the previous year (e.g., displays, posters, signs, pamphlets, booklets, brochures, radio, local cable TV, newspaper articles, other advertisements, bill stuffers, posters, presentations, conferences, meetings, fact sheets, giveaways, or storm drain stenciling).

1. **Stormwater brochures available to the general public at the Borough office for free (see *Attachment 1*).**
2. **A public presentation detailing the Borough's MS4 program activities for the prior year was given at the March 25, 2014 Borough Council meeting (see MCM #2 for more information).**

MCM #2 – PUBLIC INVOLVEMENT/PARTICIPATION

BMP #1: Develop, implement and maintain a written Public Involvement and Participation Program (PIPP)

Measurable Goal: *A new permittee's PIPP shall be developed and implemented during the first year of coverage under this General 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 General 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.*

1. For new permittees only, attach your written PIPP or a summary thereof to the first report submitted to DEP.

2. If you are not a new permittee, did you complete and submit your written PIPP or summary to DEP? ☐ Yes ☒ No
   If Yes, provide the latest submission date: **In progress**

3. Date of last review and/or update to the PIPP: **July 2014**

4. Explain how your PIPP addresses items a, b and c of the Measurable Goal:
   Public comment is welcomed at all public meetings. The Borough Planning Commission, which meets on the first Wednesday of every month, includes discussion of stormwater projects within the Borough. The Borough also solicited volunteers at the March 25, 2014 Borough Council meeting. The Borough is a member of the Lancaster Inter-Municipal Committee and the Lancaster County Clean Water Consortium, which both facilitate communications with watershed associations and other environmental organizations. Copies of MS4 Annual Reports are available to the public through the Commonwealth of Pennsylvania Right to Know Act 3 of 2008. Right-to-know request forms are available at the Borough office and a copy of the Borough's Right-to-know policy is available on the Borough website.

BMP #2: Prior to adoption of any ordinance (municipal permittees) or SOP (non-municipal permittees) required by the permit, provide adequate public notice and opportunities for public review, input, and feedback.

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

1. Was an MS4-related ordinance or SOP developed during the reporting period? ☒ Yes ☐ No

2. If Yes, describe how you advertised the draft ordinance and how you provided opportunities for public review, input and feedback:
   Notice of the draft ordinance was published in the Lancaster Intelligencer Journal-New Era on May 17, 2014. Proof of publication is included in *Attachment 2*. Copies of were available for review at the Borough Office and at the offices of the newspaper.

3. If an ordinance or SOP was enacted/developed or amended during the reporting period, provide the following information:

Ordinance No. / SOP Name	Date of Public Notice	Date of Public Hearing	Date Enacted
Stormwater Ordinance No. 2014-2	05/17/14	05/27/14	05/27/14

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 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.*

1. Date of the public meeting(s): **March 25, 2014**
2. How were meeting(s) advertised to the public? **Agenda posted on Borough website (copy included in *Attachment 2*)**
3. Indicate where the meeting(s) were held and the number of attendees:
   Millersville Borough office – 8 attendees (meeting minutes and sign-in sheet included in *Attachment 2*)
4. What types of MS4-related activities did you solicit public involvement and participation for?
   IDD&E reporting and awareness
5. What MS4-related activities did the public participate in?
   No volunteers came forward as a result of the public meeting.

MCM #3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDD&E)

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.

***Measurable Goal**: For new permittees, the IDD&E program shall be developed during the first year of coverage under this General Permit and shall be implemented and evaluated each year thereafter. 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.*

1. For new permittees only, attach your written IDD&E program to the first report.
2. If you are not a new permittee, did you complete and submit your written IDD&E program to DEP? ☐ Yes ☒ No
   If Yes, provide the latest submission date: **In progress**
3. Date of last review and/or update to IDD&E program: **July 2014**

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 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.*

1. Have you completed a map(s) of all outfalls and receiving waters of your storm sewer system? ☒ Yes ☐ No

2. For new permittees only, attach the completed map to the 4th year Annual Report.

3. Date of last update or revision to map(s): **October 23, 2014 (copy included in *Attachment 3*)**

4. Total number of discharge points in your storm sewer system that:
   Discharge directly to surface waters (outfalls): **25**
   Discharge to storm sewers owned by others: **13**

5. Total number of outfalls that are mapped at this time: **25**

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 Goals**: 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.*

1. Have you completed a map(s) that includes roads, inlets, piping, swales, catch basins, channels, basins, municipal boundaries and watershed boundaries? ☒ Yes ☐ No

2. If Yes, is the map(s) on the same map(s) as for outfalls and receiving waters? ☒ Yes ☐ No

3. For new permittees only, attach the completed map to the 4th year Annual Report.

4. If you are not a new permittee, did you complete and submit your map to DEP? ☒ Yes ☐ No
   If Yes, provide the latest submission date: **October 2014 (See *Attachment 3*)**

5. Date of last update or revision to map: **October 2014**

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.

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 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.

1. For new permittees only, were at least 40% of all outfalls screened during dry weather? ☐ Yes ☐ No **N/A**

   If Yes for #1, indicate the number screened and the percent of all outfalls it represents. If No for #1, indicate reason(s) why this was not completed:

   Are you on pace to screen all outfalls twice during the permit term? ☐ Yes ☐ No **N/A**

2. For renewal permittees, indicate the percent of outfalls screened during the reporting period: **100% (See *Attachment 3*)**

   Are you on pace to screen all outfalls once during the permit term? ☒ Yes ☐ No

3. For all permittees, indicate the percent of outfalls screened that revealed dry weather flows: **0%**

4. Did any dry weather flows reveal color, turbidity, sheen, odor, floating or submerged solids? ☐ Yes ☒ No

5. If Yes for #4, attach all sample results to this report with a map identifying the sample location. Explain the corrective action(s) taken in the attachment.

6. Do you use the "Outfall Reconnaissance Inventory / Sample Collection Field Sheet" provided in the permit?

   ☒ Yes ☐ No

   If No, attach a copy of your monitoring form.

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

***Measurable Goal**: 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, the MS4 Stormwater Management Ordinance; or an ordinance that satisfies all applicable requirements in a completed and signed MS4 Stormwater Management Ordinance Checklist. (For non-municipal permittees, new permittees shall develop and implement a Standard Operating Procedure (SOP) within the first year of coverage).*

Renewal permittees must continue to maintain, update, implement, and enforce a Stormwater Management Ordinance that satisfies all applicable requirements. (For non-municipal permittees, the SOP satisfies this requirement. If no existing SOP exists, it should be developed during the first year of coverage).

***Measurable Goal**: 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 Department. (For non-municipal permittees, submit the SOP to the first report).*

1. Do you have an ordinance (municipal) or SOP or other mechanism (non-municipal) that prohibits non-stormwater discharges? ☒ Yes ☐ No

   If Yes, indicate the date of the ordinance or SOP: **05/27/14 (See *Attachment 3*)**

2. For new permittees only, attach an ordinance (or SOP) and letter from an official, engineer or solicitor that prohibits non-stormwater discharges to the first report submitted to DEP.

3. If you are not a new permittee, did you complete and submit your ordinance (or SOP) and letter from an official, engineer or solicitor that prohibits non-stormwater discharges to DEP? ☒ Yes ☐ No **(See *Attachment 3*)**

4. Were there any violations of the ordinance during the reporting period? ☐ Yes ☒ No

   If Yes, describe what enforcement actions were taken for each violation:

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.

***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.*

1. Was IDD&E-related information distributed to public employees, businesses, and the general public during the reporting period? ☒ Yes ☐ No

   If Yes, what was distributed? **The Borough website includes educational information regarding stormwater awareness as well as a copy of the Borough MS4 map.**

2. Is there a well-publicized method for employees, businesses and the public to report stormwater pollution incidents?

   ☒ Yes ☐ No

3. Do you maintain documentation of all responses, action taken, and the time required to take action? ☒ Yes ☐ No

MCM #4 – CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

Are you relying on PA's statewide program for stormwater associated with construction activities to satisfy this MCM?

☒ Yes ☐ No **(If No, complete all remaining questions for this MCM; if Yes, skip to MCM #5)**.

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 E&S control measures. Your program shall describe clearly how your program will be coordinated with DEP's NPDES Construction Stormwater Permitting program.

***Measurable Goals**: 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.

1. For new permittees only, attach the written stormwater associated with construction activities program to the first report submitted to DEP.

2. If you are not a new permittee, did you complete and submit your written stormwater associated with construction activities program to DEP? ☐ Yes ☐ No

   If Yes, provide the latest submission date:

3. Date of last update or revision to the stormwater associated with construction activities program:

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**: 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. (Non-municipal permittees shall develop and implement an SOP).*

***Measurable Goal**: 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.*

1. For new permittees only, attach an ordinance (or SOP) and letter from an official, engineer or solicitor that addresses stormwater associated with construction activities to the first report submitted to DEP.

2. If you are not a new permittee, did you complete and submit your ordinance (or SOP) and letter from an official, engineer or solicitor that addresses stormwater associated with construction activities to DEP? ☐ Yes ☐ No

   If Yes, provide the latest submission date:

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.*

1. Identify the mechanism(s) in place to regulate construction site operators and wastes produced at construction sites:

2. During the reporting period what has been the results of implementing the mechanism(s) 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 General Permit and information should be submitted with the each periodic report.*

Describe the tracking system established for documenting public information concerning local construction activities and describe responses taken during the reporting period:

MCM #5 – POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Are you relying on PA's statewide program for MCM #5 BMPs #1 - #3? ☒ Yes ☐ No

(**If No, complete all remaining questions for this MCM; if Yes, skip to BMP #4**)

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.

***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.*

1. For new permittees only, attach your written procedure for post-construction management to the first report.

2. If you are not a new permittee, did you complete and submit your written procedure for post-construction management to DEP? ☐ Yes ☐ No

If Yes, provide the latest submission date:

3. Date of last review or update of post-construction management procedure:

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 the 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.*

1. Number of development or redevelopment projects in urbanized area during reporting period:

2. Describe the tracking system in place:

3. Describe the structural and/or non-structural BMPs that were required for these projects:

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.*

If there were development or redevelopment projects during the reporting period, attach documentation of inspections of PCSM BMPs to this report.

BMP #4: The permittee shall enact, implement, and enforce an ordinance (municipal) or SOP or other regulatory mechanism (non-municipal) 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**: Within the first year of coverage under this permit, new permittees shall enact and implement a stormwater management ordinance (municipal) or SOP (non-municipal) that meets the requirements of this General Permit.*

***Measurable Goal**: 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 General Permit.*

1. Do you have an ordinance (or SOP) to address post-construction stormwater runoff from new and redevelopment projects and does it include sanctions? ☒ Yes ☐ No

   If Yes, indicate the date of the ordinance or SOP: **05/27/14**

   For new permittees only, attach a copy of the ordinance or SOP.

2. If you are not a new permittee, has the ordinance (or SOP) been submitted to DEP with a letter from an official, engineer or solicitor that certifies the enactment of an ordinance or SOP for PCSM activities? ☒ Yes ☐ No **(See *Attachment 3*)**

3. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? ☒ Yes ☐ No

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

***Measurable Goal**: 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.*

1. Identify ordinances enacted or updated during the reporting period to ensure consistency with LID practices:

   Stormwater Ordinance No. 2014-2, enacted 5/27/14 (copy included in *Attachment 3*)

BMP 6: Ensure adequate operation and maintenance 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**: 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**: 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:*

- *all PCSM BMPs that were installed to meet requirements in NPDES Permits for Stormwater Discharges Associated with Construction Activities approved since March 10, 2003;*
- *the exact location of the PCSM BMP (e.g., street address);*
- *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;*
- *the type of BMP and the year it was installed;*
- *maintenance required for the BMP type according to the Pennsylvania Stormwater BMP Manual or other manuals and resources;*
- *the actual inspection/maintenance activities for each BMP;*
- *an assessment by the permittee if proper operation and maintenance occurred during the year and if not, what actions the permittee has taken, or shall take, to address compliance with O&M requirements.*

1. For new permittees only, attach the written inspection program to ensure that stormwater BMPs are properly operated and maintained.

2. If you are not a new permittee, did you complete and submit your written inspection program to ensure that stormwater BMPs are properly operated and maintained to DEP? ☐ Yes ☒ No

   If Yes, provide the latest submission date: **In progress – all information for BMP #6 to be submitted under separate cover**

3. How do you ensure that stormwater BMPs are properly operated and maintained? Explain if you rely on means other than municipal inspections to ensure adequate O&M (consistent with your stormwater ordinance).

4. Date that inspection program was last reviewed or updated:

5. Total number of sites with PCSM BMPs installed as of the date of this report:

6. Total number of sites inspected during this reporting period:

7. Number of sites found to have PCSM BMP deficiencies:

8. Number of enforcement actions taken during this reporting period:

MCM #6 – POLLUTION PREVENTION / GOOD HOUSEKEEPING

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.*

1. Have you identified all facilities and activities owned and operated by the permitee that have the potential to generate stormwater runoff into the MS4? ☒ Yes ☐ No

2. When was the inventory last reviewed? **July 2014**

3. When was it last updated? **July 2014**

4. How many new facilities and/or activities were added to this inventory during this reporting period? **0**

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:

- **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.**
- **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.**
- **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.**
- **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.*

1. For new permittees only, attach the written O&M program to the first Annual Report.

2. If you are not a new permittee, did you complete and submit your written O&M program to DEP? ☒ Yes ☐ No

   If Yes, provide the latest submission date: **June 2013**

3. Date of last review or update to O&M program: **July 2014**

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**: 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**: 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).*

1. For new permittees only, attach the written training program to the first Annual Report.

2. If you are not a new permittee, did you complete and submit your written training program to DEP? ☐ Yes ☒ No
   If Yes, provide the latest submission date: **In progress**

3. Date of last review or update to training program: **July 2014**

4. Identify the date(s) of employee training, the names of attendees, the topics covered, and the training presenters:

Date	Attendees	Topics	Presenters
3/14/13 and 3/21/13	See *Attachment 4*	MS4 Financing	Environmental Finance Center
6/5/13	See *Attachment 4*	Good Housekeeping/Safety	Andrew Boxleitner
1/27/14	See *Attachment 4*	MS4 Workshop	CBF/URS Corporation
1/2/14	See *Attachment 4*	Good Housekeeping/Safety	Andrew Boxleitner
2/25/14	See *Attachment 4*	Good Housekeeping/Safety	Andrew Boxleitner

See *Attachment 4* for training documentation.

BEST MANAGEMENT PRACTICES (BMPs)

Provide an assessment of the appropriateness of the BMPs implemented to date, and identify any steps that will be taken to address deficiencies in the BMPs or make changes to BMPs or other aspects of the SWMP developed by the permittee.

No deficiencies in the current reporting period; assessment will continue in the next reporting cycle in conjunction with implementation of the Borough's Chesapeake Bay Pollutant Reduction Plan.

MS4 TMDL Plan	Chesapeake Bay Pollutant Reduction Plan (CBPRP)
Is the permittee required to develop an MS4 TMDL Plan? ☐ Yes ☒ No	Is the permittee required to develop a CBPRP? ☒ Yes ☐ No
What is the status of the TMDL Design Details (if applicable)? ☐ Under Development (Due Date:) ☐ Submitted to DEP (Submission Date:) ☐ Approved by DEP (Approval Date:)	What is the status of the CBPRP (if applicable)? ☐ Under Development (Due Date:) ☒ Submitted to DEP (Submission Date: **07/28/14**) ☐ Approved by DEP (Approval Date:)

For permittees with DEP-approved MS4 TMDL Plans and/or CBPRPs, describe progress with implementing BMPs and other activities identified in those plans:

N/A

For permittees with DEP-approved MS4 TMDL Plans and/or CBPRPs, complete the section below. Identify the required pollutant reductions (for those with MS4 TMDL Plans) or pollutant reductions committed to by the permittee (for those with CBPRPs) and the cumulative reductions achieved through implementing the BMPs, as of the end of the reporting period:

N/A

BMP INVENTORY

List all new structural BMPs installed and ongoing non-structural BMPs implemented in the urbanized area during the reporting period that are being used toward achieving load reductions in the permittee's MS4 TMDL Plan and/or CBPRP. Provide a name or description for each BMP, the area, in square feet (sf) that drains to each BMP (drainage area (DA)) (if applicable), the location of the BMP (latitude and longitude), the name of the water body that receives discharges from the BMP (if applicable), the date the BMP was installed or implemented, and whether the BMP was completed pursuant to an NPDES permit for stormwater associated with construction activities or other NPDES permit (check box if done under an NPDES permit).

BMP Name / Description	DA (sf)	Latitude	Longitude	Receiving Waters	Date Installed or Implemented	NPDES Permit?
BMP Inventory in progress – to be submitted under separate cover						
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OTHER REQUIRED REPORT ELEMENTS

Identify the progress towards achieving the statutory requirements of reducing the discharge of pollutants to the Maximum Extent Practicable (MEP) and complying with water quality standards.

The Borough submitted their Chesapeake Bay Pollutant Reduction Plan to DEP prior to the 08/01/14 deadline. The Plan was reviewed with the Borough Manager prior to submission.

Provide a summary of stormwater activities planned during the next reporting cycle (not identified previously in this report):

- **Undertake detailed cost analysis of proposed stormwater BMPs and incorporate into Borough budget**
- **Investigate and evaluate potential retrofit/BMP installations – Freedom Memorial Park, Heisey Avenue, Kready Avenue**

Provide a summary of notices, intergovernmental agreements and other relevant documents if the permittee is relying on another governmental entity to satisfy any of its permit obligations

N/A

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, 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 knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Edward J. Arnold	Edward J. Arnold
Name of Responsible Official	Signature
717-872-4645	10-27-14
Telephone No.	Date

Attachments

Attachment 1 – MCM #1 Documentation

Educational Brochures

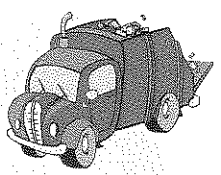
What is Storm Water?

Storm water is water from precipitation that flows across the ground and pavement when it rains or when snow and ice melt. The water seeps into the ground or drains into what we call storm sewers. These are the drains you see at street corners or at low points on the sides of streets. Collectively, the draining water is called storm water runoff.

Why is Storm Water "Good Rain Gone Wrong?"

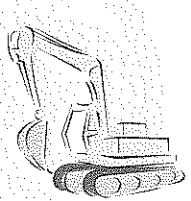
Storm water becomes a problem when it picks up debris, chemicals, dirt, and other pollutants as it flows or when it causes flooding and erosion of stream banks. Storm water travels through a system of pipes and roadside ditches that make up storm sewer systems. It eventually flows directly to a lake, river, stream, wetland, or coastal water. All of the pollutants storm water carries along the way empty into our waters, too, because storm water does not get treated!

Pet wastes left on the ground get carried away by storm water, contributing harmful bacteria, parasites and viruses to our water.



Vehicles drip fluids (oil, grease, gasoline, antifreeze, brake fluids, etc.) onto paved areas where storm water runoff carries them through our storm drains and into our water.

Chemicals used to grow and maintain beautiful lawns and gardens, if not used properly, can run off into the storm drains when it rains or when we water our lawns and gardens.



Waste from chemicals and materials used in construction can wash into the storm sewer system when it rains. Soil that erodes from construction sites causes environmental degradation, including harming fish and shellfish populations that are important for recreation and our economy.

Where To Go To Continue the Information Flow

Your community is preventing storm water pollution through a storm water management program. This program addresses storm water pollution from construction, new development, illegal dumping to the storm sewer system, and pollution prevention and good housekeeping practices in municipal operations. It will also continue to educate the community and get everyone involved in making sure the only thing that storm water contributes to our water is . . . water! Contact your community's storm water management program coordinator or the Pennsylvania Department of Environmental Protection for more information about storm water management.

Pennsylvania Department of Environmental Protection
www.dep.state.pa.us

Answers to Test Your Storm Sewer System Savvy:

1. Ditch – Part of the storm sewer system. Most people think that the system is just a series of underground pipes. It can also include ditches used to convey storm water from the land to a receiving lake, river, or stream.

2. Fire Hydrant – Not part of the storm sewer system. Water sprayed from fire hydrants is not storm water, but is allowed by law to enter the storm sewer system.

3. Curb with Storm Drain Inlet – Part of the storm sewer system. Many people do not realize that this is an opening leading to the storm sewer system. Anything going into this inlet (e.g., trash, leaves, improperly disposed of hazardous materials) travel directly to a receiving lake, river, or stream without being treated first. Many communities stencil storm drains with "Do Not Dump" messages to let people know.

4. Storm Sewer Outfall – Part of the storm sewer system. An outfall is where storm water drains from the storm sewer system into a receiving lake, stream, or river. If there is a flow from an outfall when it isn't raining, there could be a problem with the system or someone has used a storm drain for illegally disposing of materials.

5. Toilet – Not part of the storm sewer system. Wastewater from sinks and toilets in houses and businesses travel through a sewer system constructed to carry sanitary wastes. In some instances, older communities may have a combined sewer system designed to carry both storm water and sanitary waste.

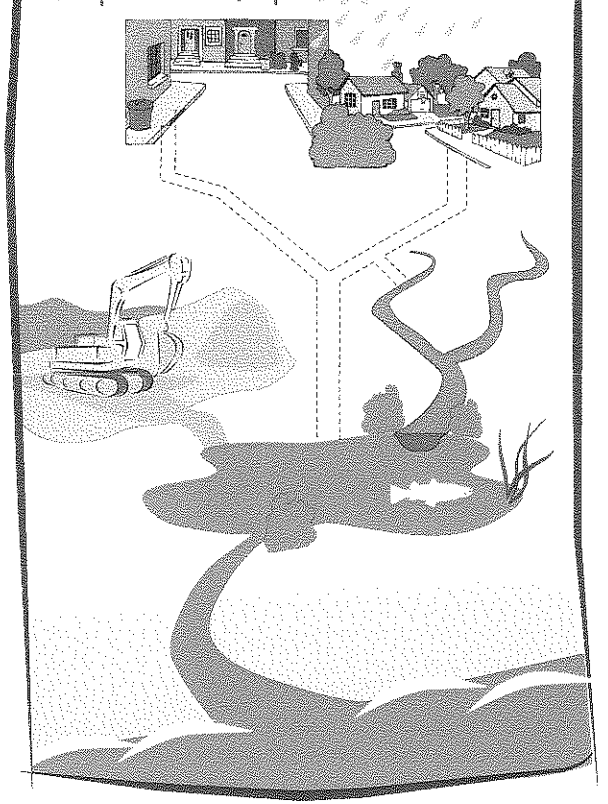
6. Septic System – Not part of the storm sewer system. Homeowners use septic tanks to manage sanitary wastes on-site. Improperly maintained septic systems can leak and contribute pollutants to the storm sewer system, as well as directly to lakes, rivers, and streams.

7. Roads and Other Paved Areas – Not part of the storm sewer system. Roads and other hardened surfaces such as parking lots and sidewalks can accumulate pollutants (e.g., oil, grease, dirt, leaves, trash, pet wastes) that storm water eventually washes into the storm sewer system.

8. Storm Drain Inlet – Part of the storm sewer system. This is another example of what a storm drain may look like. Like the storm drain inlet shown in picture #3, anything that enters this drain will go directly to streams, rivers, and lakes without being treated first. It is important to recognize this as a storm drain to prevent it from being used as a trash can.

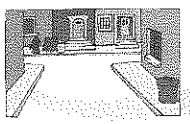
When It Rains, It Drains

Understanding Storm Water and How It can Affect Your Money, Safety, Health, and the Environment



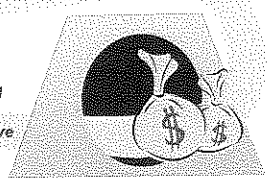
What Happens When It Rains?

Rain is an important part of nature's water cycle, but there are times it can do more damage than good. Problems related to storm water runoff can include:



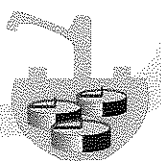
Flooding caused by too much storm water flowing over hardened surfaces such as roads and parking lots, instead of soaking into the ground.

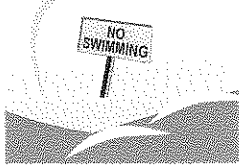
Increases in spending on maintaining storm drains and the storm sewer system that become clogged with excessive amounts of dirt and debris.



Decreases in sportfish populations because storm water carries sediment and pollutants that degrade important fish habitat.

More expensive treatment technologies to remove harmful pollutants carried by storm water into our drinking water supplies.



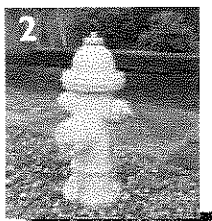


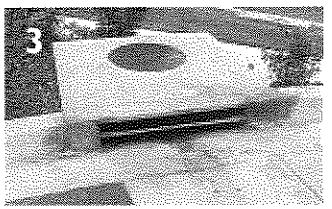
Closed beaches due to high levels of bacteria carried by storm water that make swimming unsafe.

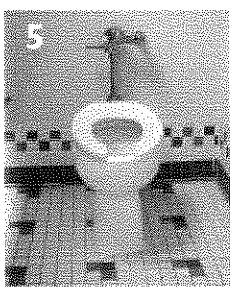
We can help rain restore its good reputation while protecting our health and environment while saving money for ourselves and our community. Keep reading to find out how...

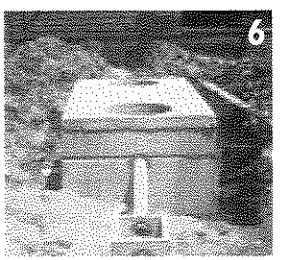
Test Your Storm Sewer System Savvy!

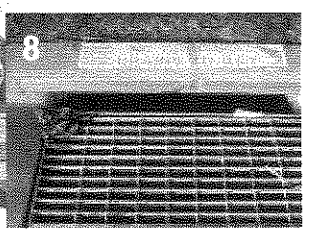
What does the storm sewer system look like in your community? See if you can identify which pictures are part of the storm sewer system. (Answers are on the back.)









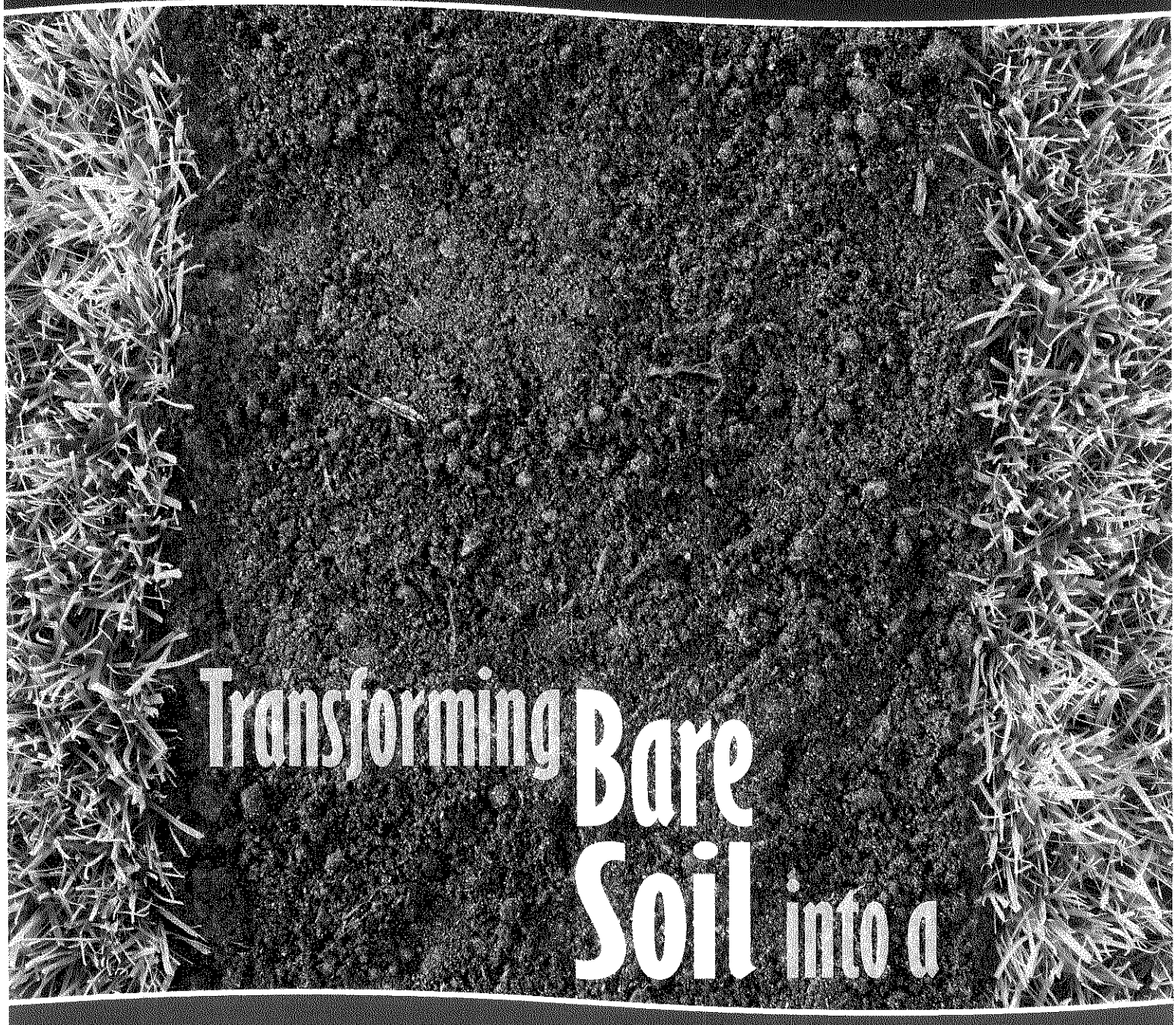


Restoring Rain's Reputation: What Everyone Can Do To Help

Rain by nature is important for replenishing drinking water supplies, recreation, and healthy wildlife habitats. It only becomes a problem when pollutants from our activities like car maintenance, lawn care, and dog walking are left on the ground for rain to wash away. Here are some of the most important ways to prevent storm water pollution:

- Properly dispose of hazardous substances such as used oil, cleaning supplies and paint—never pour them down any part of the storm sewer system and report anyone who does.
- Use pesticides, fertilizers, and herbicides properly and efficiently to prevent excess runoff.
- Look for signs of soil and other pollutants, such as debris and chemicals, leaving construction sites in storm water runoff or tracked into roads by construction vehicles. Report poorly managed construction sites that could impact storm water runoff to your community. (See the back of this brochure for contact information.)
- Install innovative storm water practices on residential property, such as rain barrels or rain gardens, that capture storm water and keep it on site instead of letting it drain away into the storm sewer system.
- Report any discharges from storm water outfalls during times of dry weather—a sign that there could be a problem with the storm sewer system.
- Pick up after pets and dispose of their waste properly. No matter where pets make a mess—in a backyard or at the park—storm water runoff can carry pet waste from the land to the storm sewer system to a stream.
- Store materials that could pollute storm water indoors and use containers for outdoor storage that do not rust or leak to eliminate exposure of materials to storm water.

Erosion & Sedimentation



Transforming Bare Soil into a Greener Tomorrow

What is a County Conservation District?

A County Conservation District is a legal subdivision of state government that works closely with county and local agencies and is responsible under state law for conservation work within the county.

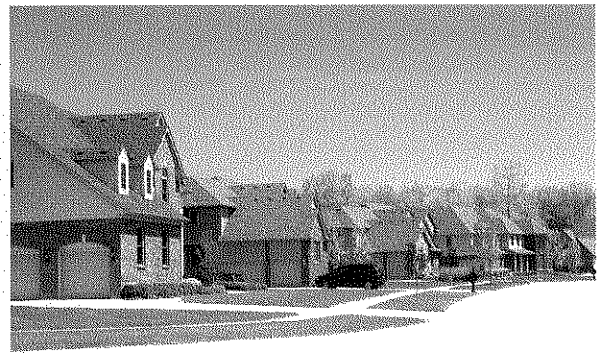
The purpose of the District is to increase awareness of the relationship between the activities of man and our natural environment. The District helps to focus attention on the wise use of the land, water, and related natural resources. It provides assistance to individuals, and to public and private organizations in solving the complex problems of today's environment.

A board of nine volunteer directors appointed by the County Commissioners manages the County Conservation Districts. Five represent the agricultural community, three represent the urban community, and one is a County Commissioner.

The District works closely with many federal, state, and local environmental agencies as well as the private sector. These cooperating agencies and businesses will often assist the District in providing information, technical and financial assistance to landowners.

Districts' Primary Programs & Activities

- Erosion and Sedimentation Control
- NPDES Permits for Construction Activities
- Stormwater Management
- Conservation Plan development in cooperation with NRCS
- Cost Share programs for best management practices on farms
- Watershed Associations
- Education programs for public and private schools and youth organizations
- Annual Tree Seedling Sale
- Envirothons – Elementary, High School



Farm Conservation Plans

- Decrease pollutants to the Bay
- Develop complete Nutrient Management and Conservation Plans
- Construct Manure Storage Facilities
- Encourage new uses for manure
- Install cropland terraces and diversions to control water runoff
- Apply contour strip cropping and proper crop rotation to naturally increase soil fertility

Erosion and Sedimentation Program

The E&S department has the DEP delegated responsibility to:

- Review Erosion and Sediment Pollution Control Plans
- Conduct site inspections of earthmoving projects
- Investigate complaints related to accelerated soil erosion, waterway and wetland encroachments
- Issue certain NPDES and Chapter 105 permits
- Initiate compliance actions

Controlling Soil Erosion in Pennsylvania

What is soil?

Soil is an essential natural resource. Soil is generally considered to be the top layer of the earth's surface. Soil particles are classified into three sizes: sand, silt, and clay. Topsoil is the uppermost layer of soil. Beneath the topsoil layer are layers of soil called subsoil. Bedrock is found beneath the subsoil layers.

Topsoil is essential to plant growth. The topsoil layer contains air, water, minerals, living organisms and decomposing plant material. A healthy topsoil will contain about 50% pore space. Pore space generally contains equal amounts of air and water. The topsoil layer in Pennsylvania is only a few inches thick. Plant roots obtain most of the water and nutrients from the topsoil layer.

Subsoil serves a major supporting role. In the case of plants, subsoil stores water and provides the mass needed for roots to support the above ground parts of a plant. Can you imagine the support needed to stabilize a large tree during a heavy windstorm? A tab root can reach 40 feet deep into the subsoil layer. Subsoil also supports buildings, sidewalks, and roadways. Imagine how different civilization would be if the earth's entire surface was water!

What is soil erosion?

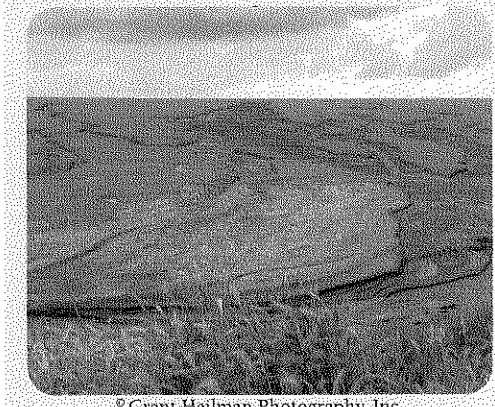
Soil erosion is a natural process whereby the forces exerted by wind and rainfall cause soil to be moved around. In Pennsylvania, water-caused erosion is the most common form of soil erosion. In a healthy soil, individual soil particles are held together in aggregates. Erosion occurs when the energy of raindrops falling on bare soil is great enough to break apart soil aggregates, separating sand, silt, clay and organic matter into individual particles. The individual particles are then carried downhill as sediment in the stormwater runoff.

What is pollution?

Occasionally, a substance, when discharged into waters of this Commonwealth, will alter the character of the water. Pollution occurs when the alteration renders the water unusable or offensive. Sediment produced by soil erosion is the largest pollutant by volume in Pennsylvania. +

Erosion control regulations

Recognizing the widespread problem of soil erosion and sediment pollution, Pennsylvania adopted erosion control regulations in 1972. The regulations are currently administered by the PA DEP and are commonly called Chapter 102. The Chapter 102 regulations are intended to protect water resources from pollution by sediment. The regulations protect surface water by requiring that soil conservation measures be used wherever soil is disturbed. Road construction, farming, and homebuilding are typical earth disturbing activities that are required to implement soil conservation measures.



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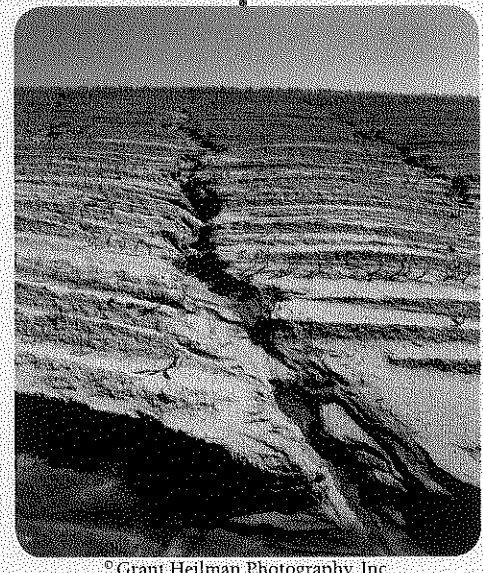

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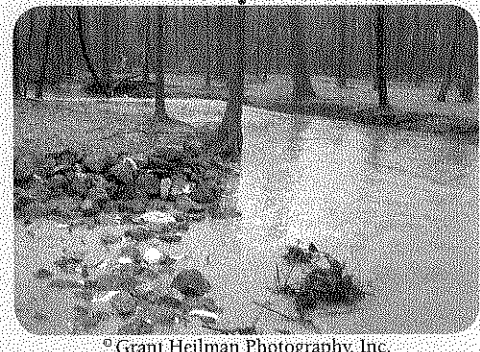

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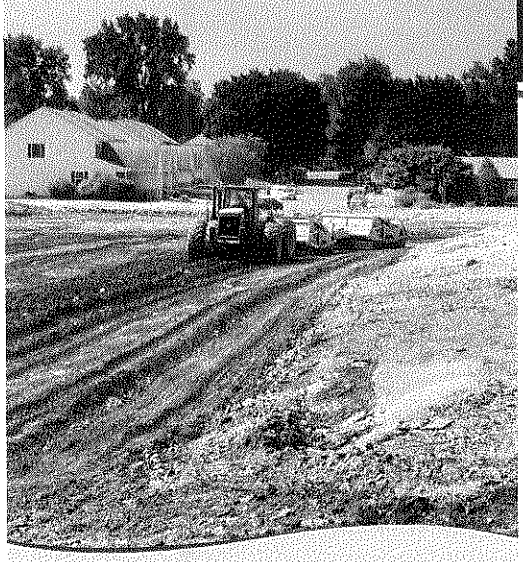

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Permits for Earthmoving in Pennsylvania:

A Historical Overview

Information for Excavation Contractors

It is important for all involved in the business of earthmoving to be familiar with Chapter 102 and the NPDES permit previously discussed. Regardless of the project size, attention should be given to the matter of controlling erosion and removing sediment from runoff. Chapter 102 requires a written plan for any earth disturbance of 5,000 sq. ft. or more. Most times, a plan has been professionally prepared before the project begins. If you are not provided with a plan, you are not ready to start.

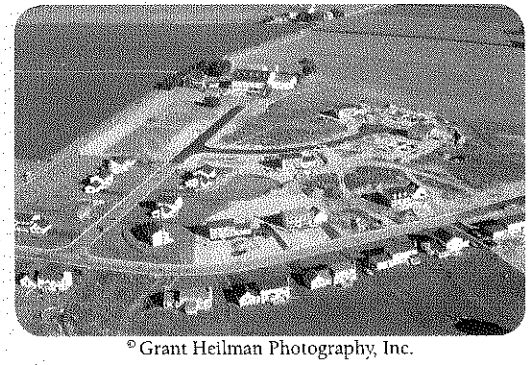
Similarly, if you know that a project will disturb one or more acres, an NPDES permit has likely been issued for the activity. It is the responsibility of all parties responsible for earthmoving to obtain NPDES permit coverage at the site. The EPA considers the performance of the operator to be as important as that of the owner and requires that all parties having operational control be permitted. Permit coverage is normally obtained by the filing of a Copermittee application with the county conservation district.

Questions concerning Chapter 102 or NPDES should be directed to the conservation district in the county where the activity will occur.

NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) program of 1972 is a federal program that was created within Section 402 of the federal Clean Water Act. NPDES prohibits the discharge of pollutants from any point source into the nation's surface waters except as allowed under an NPDES permit. Effluent is a term that is used to describe the solid or liquid substances that enter the environment as a result of human activity. The NPDES program gives the Environmental Protection Agency (EPA) the authority to regulate discharges into the nations waters by setting limits on the effluent that can be introduced from point sources into surface waters. It is important to note that non-point sources of discharge are not regulated by NPDES.

What about stormwater discharges? Until the early 1990's, EPA avoided the problem of stormwater discharge and excluded it from NPDES. In the late 1980's, environmental groups successfully argued that construction activity involving earth disturbance creates a point source discharge of stormwater, and that stormwater from a disturbed construction site carries with it sediment. Hence, sediment discharge from construction was brought under regulation of NPDES. Today, sediment from regulated construction sites can no longer be discharged into the nation's surface waters except as allowed under an NPDES permit. At the same time, EPA began to require highly populated municipalities to obtain NPDES coverage for stormwater discharges into surface waters.



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The NPDES stormwater program was implemented in two phases. **Phase I** was established in 1990. Phase I covered construction activities that disturbed five or more acres, and municipalities with populations of 100,000 or more that owned or operated a municipal separate storm sewer system (MS-4). **Phase II** of the program began in 1999 and expanded permit requirements to construction disturbing one acre or more and smaller communities (< 100,000 population) and public entities that own or operate an MS-4.

The EPA needed help from the states to manage the workload from the expanded NPDES program. Here in Pennsylvania, the EPA delegated to the Commonwealth of Pennsylvania the responsibility for the NPDES permit program. The Commonwealth, in turn, has delegated to most county conservation districts the very specific NPDES permit program responsibility for stormwater discharges from construction activity. There are many other situations where NPDES permits are required, and those permits are issued by the PA DEP.

Pennsylvania has a comprehensive program for controlling sediment pollution. It begins with the basic Chapter 102 program requirement for an erosion control plan where earth disturbance exceeds 5,000 sq. feet, and extends to the federal NPDES program. Conservation district offices are located throughout the Commonwealth. If you ever have questions about your responsibilities, you are encouraged to contact your local county conservation district. Similarly, if you observe sediment pollution from earth disturbance, the county conservation district office should be contacted.

As a Newly Elected Municipal Official:

What Must I Know About Stormwater?

All levels of government, from federal to municipal, have a part to play in the arena of erosion control and stormwater management. As mentioned earlier, the federal Clean Water Act has created the NPDES program. NPDES requires certain earth disturbance activities that will result in stormwater discharges from construction activities to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) Permit.

Pennsylvania's Department of Environmental Protection (DEP) has two types of NPDES Permits, a General NPDES Permit (general used in non-Special Protection watersheds and referred to as the PAG-02 permit) and an Individual NPDES Permit (generally used in Special Protection watersheds and containing a PAI number). NPDES permits are required when earth disturbance activities reach one (1) acre or more of disturbance over the life of the entire project. Types of activities that require an NPDES permit include, but are not limited to, home construction, commercial or industrial construction, agricultural construction, roadway construction, and utility construction. Activities that are exempt from needing NPDES coverage include, but are not limited to, agricultural plowing and tilling activities, timber harvesting, road maintenance, and stream restoration projects.

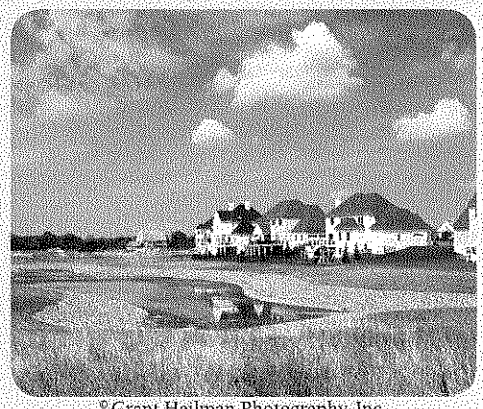
The NPDES Permits for construction activities incorporates effluent discharge limitations, monitoring and reporting requirements, stormwater management criteria for rate control, volume control, and water quality criteria, and requirements for erosion and sediment controls. Additional requirements may be necessary for projects located in Special Protection (high quality or exceptional value) watersheds.

Two primary purposes of NPDES permits are to provide environmental protection during construction and *after* construction. The "during" is provided by the way of Erosion and Sediment Control Plans (E&S Plans) and implementation of various elements of Pennsylvania's Chapter 102 (Erosion and Sediment Control regulations.) E&S Plans address a variety of site conditions, including erosion, sediment loss during construction, sediment loss management, containment and water quality. The primary purpose of an E&S plan is to *minimize* erosion and sediment loss during construction. E&S plans are required for all projects that disturb 5000 square feet or more over the life of the project.

The second purpose is to control stormwater runoff *after* construction via a Post Construction Stormwater Management Plan (PCSM Plan). The PCSM plan addresses rate, volume and water quality issues that will be part of the project long after the last bulldozer leaves the site. The PCSM plan addresses how water is treated from parking lots, roofs, and other impervious surfaces. Pennsylvania's stormwater requirements and standards may differ from local county or municipal ordinances. DEP and the local Conservation Districts are committed to working *together* to reach a beneficial plan with all of those involved in the project.

In 1972, the Pennsylvania legislature adopted the Chapter 102 Erosion Control regulations. Within Chapter 102, municipalities and local governing bodies are mentioned specifically, as to what roles they have in the regulations. Section 102.41 states that the local governing body shall approve the conservation district as an acceptable entity and program to facilitate the E&S (Chapter 102) program and regulations. Section 102.42 outlines coordination requirements between conservation districts and municipalities/ county governments for projects that may require NPDES permits. Section 102.43, perhaps the most important section, outlines the requirements for municipalities/ counties as to what local approvals may or may not be issued until an NPDES permit is authorized by DEP or the conservation district. Basically, a building, grading or other applicable permit cannot be issued by a local authority until proof of NPDES permit issuance has been obtained. Failure to comply with 102.43 can have repercussions for the municipality/county, as well as the responsible party for the project.

Many municipalities are now adopting Memorandums of Understanding (MOUs) with the conservation districts to solidify delegated responsibilities for construction permit oversight, E&S plan review and other services the conservation districts can offer. The MOUs also establish key components of the Minimum Control Measures (MCM) required under the MS-4 (PAG-13) permit that districts can help MS4s meet.



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Stormwater best management practices (BMPs) like this bioretention basin, are becoming more and more prevalent on the landscape. New and better BMPs, like this one, are designed to do more than just handle rate of water release. They now treat stormwater contaminants and decrease the volume of stormwater leaving a site.

Chapter 102 Requirements for

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Earth Disturbance Activities for Construction Activities

The following chart provides guidance for varying sizes of earth disturbance activities associated with construction projects. This chart is in reference to Chapter 102 which is typically enforced by the Department of Environmental Protection or the local County Conservation District (Varies from county to county). Additional regulations enforced by the local municipality and/or the county may also apply to the listed types of construction. Definitions of some of the terms in the chart can be found below the chart.

Requirements	Earth Disturbance Less Than 5000 Sq.Ft.	Earth Disturbance More Than 5000 Sq.Ft. but Less Than 1 Acre	Earth Disturbance 1 Acre or More
Installation of E&S BMPs	YES	YES	YES
Required written E&S plan on site	Required in certain circumstances, contact Conservation District	YES	YES
Required E&S plan approval from Conservation District	If required by municipality or other regulations	If required by municipality or other regulations	YES
Required NPDES permit coverage	NO	NO	YES
Required written PCSM plan	NO	NO	YES

Definitions:

1. **Earth disturbance** - A construction or other human activity which disturbs the surface of the land, including clearing and grubbing, grading, excavations, embankments, land development, timber harvesting, well drilling, and the moving of, depositing, stockpiling, or storing of soil, rock, or earth materials.
2. **Written Erosion and Sedimentation Plan (E&S 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.
3. **Written Post Construction Stormwater Management Plan (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.
4. **E&S Best Management Practices (BMP)** - Silt barriers (silt fence, staked straw bales, wood chip berm, filter sock), rock filters, mulches (straw, wood chips, erosion control blankets), rock construction entrance, etc.
5. **Nation Pollutant Discharge Elimination System (NPDES)** - The National system for the issuance of permits under section 402 of the Federal Clean Water Act including a state or interstate program which has been approved in whole or in part by the EPA.

Ponds

Ponds can be considered an asset that enriches the surrounding landscape. Whether a new pond is of interest, an existing pond is in need of maintenance, or that old farm pond needs to go, many regulations intersect on the discussion of earth moving and ponds.

When planning to construct a new pond there are a few things to keep in mind. First, construction of a new pond in a wetland is strongly discouraged. Find an upland area where wetlands will not be impacted. Second, placing a berm in an existing stream channel is also strongly discouraged. A third item that is also discouraged is placing the pond within the floodway of a stream (The floodway is typically defined as 50 feet from the stream bank on both sides of the stream).Water can be directed from a nearby stream to the pond if ground water or well water are not options of filling the pond. Chapter 105 authorization (Through a General Permit 4 issued form the DEP or local Conservation District) for a structure that will direct water from a stream into the pond. If water from the pond will be discharged to a stream via an outlet structure in the floodway, a General Permit 4 may also cover the required Chapter 105 authorization.

A pond will often function as a sediment trap settling out soil particles that become suspended in streams during storm events. This accumulated sediment can be removed from the pond to restore the pond to its original depth and foot print. A note of caution: as sediment settles out, the pond depth may be reduced enough to allow wetlands plants to thrive. These areas that were once considered part of the pond may be considered wetlands and will fall under all regulations governing wetlands. Thought must be given to the location of the stockpiles generated by the "mucking out" process. An upland area away from streams and wetlands is the best location for depositing the accumulated soil.

When removing a pond it is necessary to determine if the pond will revert to a wetland when the pond has been drawn down. If the area does revert to a wetland, regulations that govern wetlands will apply.

In all of the above cases regarding ponds, communication with the environmental agencies is the best way to ensure the proposed pond project will be in compliance with the various regulations surrounding ponds. The following chart provides what agency should be contacted for various pond projects.

Proposed Pond Work	New Pond Construction	Pond Maintenance *(removal of accumulated sediment)*	Pond Removal
Contact DEP	YES	YES	YES
Contact Army Corps of Engineers	YES	YES	YES
Develop a written Erosion and Sediment Control Plan w/ Local Conservation District	YES	YES	YES
Contact PA Fish & Boat Commission	YES	YES	YES
Contact the Local Municipality	YES	YES	YES

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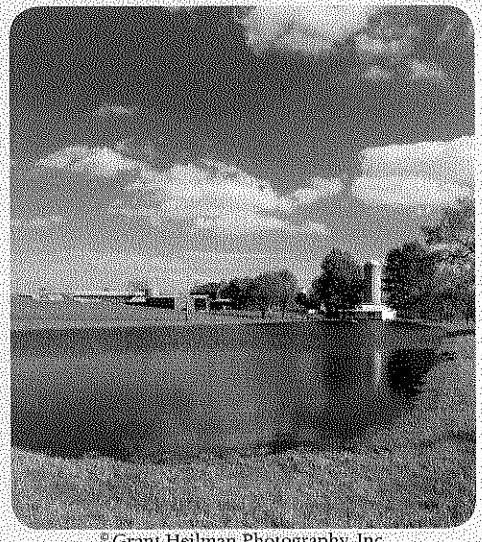

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Timber Harvest Regulations in Pennsylvania

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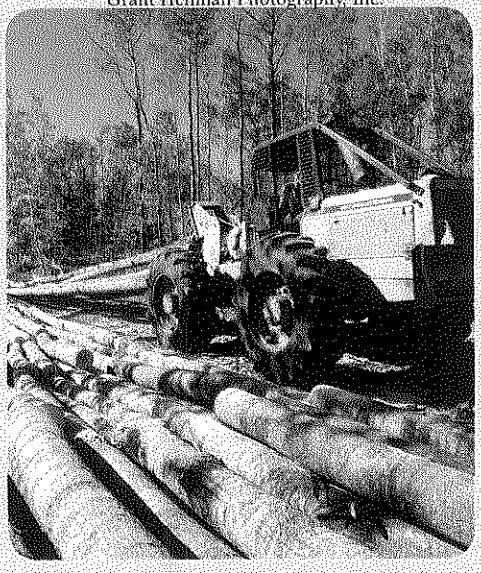

Whether timber harvesting or "land clearing" is occurring for commercial harvesting or to increase the amount of farmable land on a piece of property, the activity requires an erosion and sediment control plan and best management practices.

Timber Harvesting for Sale (Commercial)

Timber harvest operations in Pennsylvania are regulated under the Chapter 102 program, otherwise known as the Commonwealth's Erosion and Sediment Control (E&S) regulations. All earth disturbance activities that disturb 5000 square feet or more of area are required to have an Erosion and Sediment Control Plan. If the timber harvest operation disturbs 25 acres or more of area, an Erosion and Sediment Control Permit is also required.

Often, the timber harvesting by itself is not the part of the activity that requires the erosion and sedimentation management. The most intrusive activities can be the construction of access road, haul roads, landing areas and skid trails. Some typical timber harvesting erosion and sediment controls include, water bars or broad based dips on equipment travel areas, stabilized access points, and permanent stabilization methods (seeding and mulching).

On some timber harvest sites, streams or wetlands may be encountered that require additional planning and permitting. Pennsylvania's Chapter 105 (Dam Safety and Waterway Management) regulations seek to minimize impacts on water flows and water quality. Any type of wetland impact or stream crossings over 100 acres in drainage require permit authorization. Your regional DEP or local conservation district office can help you obtain the appropriate permit for the activity.

Timber Harvesting for Conversion to Agricultural Lands

Timber harvesting with the intent of converting the land into agriculture farm land is covered under the same regulations as timber harvesting for commercial sale, Chapter 102. The difference is the type of plan needed to cover the activity. An Erosion and Sediment Control Plan is still required for timber harvesting associated with conversion to crop fields but that plan will usually differ from a traditional timber harvest plan in that the agricultural plan will incorporate E&S measures for the short term (conversion/timbering process) and long term (agricultural activities such as plowing and tilling). Typically, everything can be incorporated into a farm conversion plan or agricultural E&S plan. Your local conservation district is well versed in the E&S requirements for agricultural activities.

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College of Agricultural Sciences

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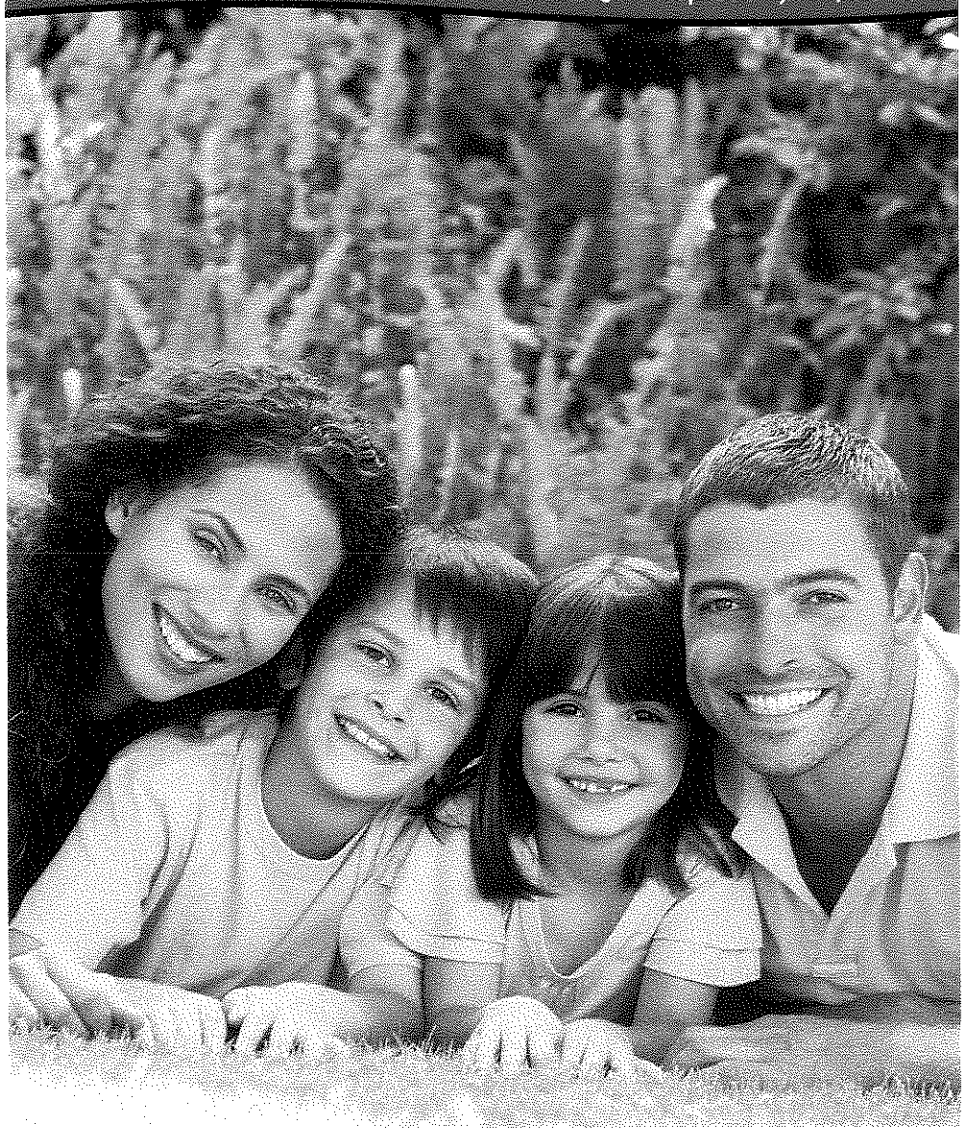
The Homeowner's Guide to Stormwater

How to develop and implement a stormwater management plan for your property



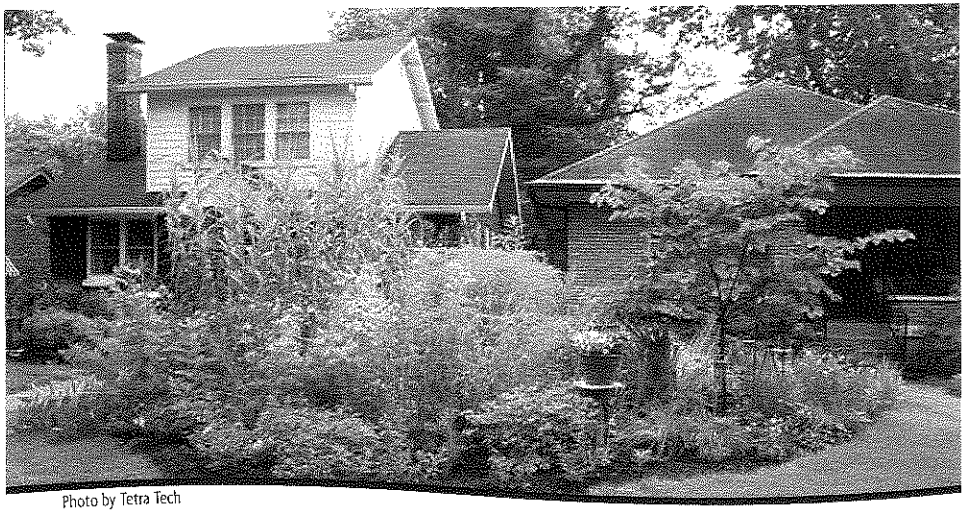


Photo by Tetra Tech

Purpose of this Guide

If you are simply looking for a way to help protect or improve your watershed or you are doing a small home improvement project that creates new impervious area and you need to manage the stormwater that is generated*, this guide is for you. It will help you better understand:

- what is stormwater, why stormwater runoff can be a problem, and what you can do about it;
- how much stormwater runoff is generated by impervious areas on your property;
- how stormwater flows across and leaves your property; and
- how you can reduce the amount of stormwater runoff leaving your property.

This guide will help you create your own stormwater management plan and select simple stormwater solutions to be implemented on your property.

** Check with your local municipality to find out more about what permits may be required for any building projects.*

Disclaimer

The practices described in the guide are provided exclusively for general educational and informational purposes. The guide is intended to help property owners evaluate and assess current runoff pathways on their properties and identify practices to better manage stormwater. The guide outlines several practices to choose from that are fairly simple to plan and construct.

All efforts have been made to ensure the material in this guide is accurate and up to date. However, the Little Conestoga Partnership and its partner organizations cannot be held responsible for any circumstances resulting from its use, unavailability, or possible inaccuracy.

This guide is not intended to be a substitute for professional design and implementation services. This guide provides you with general information on an "as is" basis. You acknowledge that you assume the entire risk of loss in using this guide and the information provided herein, including without limitation any loss incurred by any end user. You further acknowledge that the management of stormwater is a complex and site specific issue and that the general information contained in this guide may not be sufficient to assess any and all particular site conditions. Any stormwater management practice should be installed with the consultation of an experienced professional who can address specific site conditions.

The Little Conestoga Partnership and its partner organizations make no representations and specifically disclaim all liabilities and warranties, express, implied, or statutory, regarding the accuracy, timeliness, or completeness for any particular purpose of any material contained on this site.

The information presented in this guide does not in any way replace or supersede any municipal, county, state, or federal requirements or regulations related to stormwater management. You should check with all appropriate regulatory authorities before relying upon this guide to plan or implement any and all stormwater management practices on your property.

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Section 1: Introduction

What is Stormwater Runoff?

Stormwater runoff is precipitation (rain or snowmelt) that flows across the land. Stormwater may infiltrate into soil, discharge directly into streams, water bodies, or drain inlets, or evaporate back into the atmosphere.

In the natural environment, most precipitation is absorbed by trees and plants or permeates into the ground, which results in stable stream flows and good water quality.

Photo by Matt Royer, Penn State

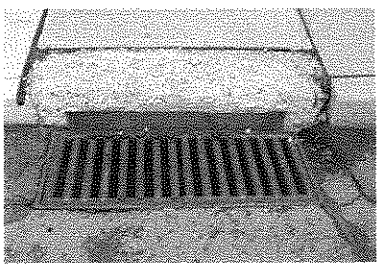


Photo by Matt Kofroth, LCCD

Things are different in the built environment. Rain that falls on a roof, driveway, patio or lawn runs off the surface more rapidly, picking up pollutants as it goes. This stormwater runoff flows into streams or storm drains that discharge into waterways like the Little Conestoga Creek, the Susquehanna River and eventually the Chesapeake Bay.

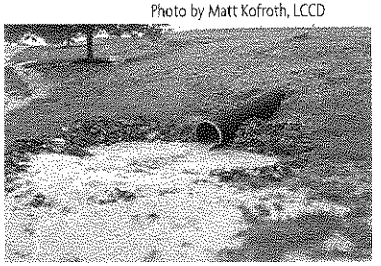
Photo by Kristen Kyler, Penn State

Why Can Stormwater Runoff Be a Problem?

Poorly managed stormwater runoff can cause a host of problems. These include:

- **Flooding.** As stormwater runs off roofs, driveways and lawns, large volumes quickly reach streams, causing them to rise quickly and flood, instead of a natural slow and steady water rise. When more impervious surfaces exist, flooding occurs more rapidly and can be more severe, resulting in damage to property and people.
- **Pollution.** Stormwater running over roofs, driveways, roads and lawns will pick up pollutants such as oil, fertilizers, pesticides, dirt/sediment, trash, and animal waste. These pollutants "hitch a ride" with the stormwater and flow untreated into local streams, polluting our waters.
- **Stream Bank Erosion.** When stormwater flows into streams at unnaturally high volumes and speeds, the power of these flows can cause severe stream bank erosion. Eroding banks can eat away at streamside property, create dangerous situations, and damage natural habitat for fish and other aquatic life. This erosion is another source of sediment pollution in streams.

Photo by Matt Kofroth, LCCD

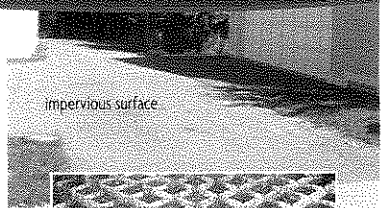


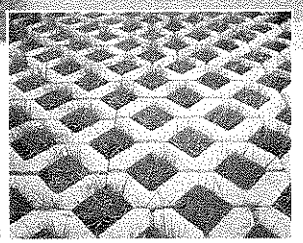
- **Threats to Human Health.** Stormwater runoff can carry many toxic pollutants, such as toxic metals, organic compounds, bacteria, and viruses. Polluted stormwater can contaminate drinking water supplies and hamper recreational opportunities as well as threaten fish and other aquatic life.

What Can I Do to Help?

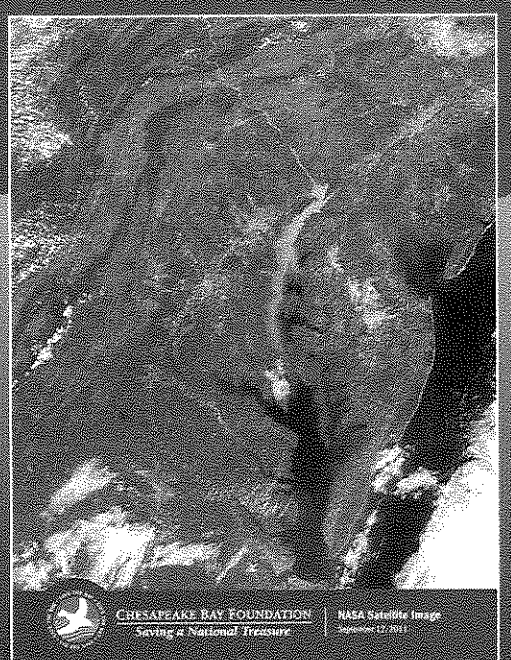
As a homeowner, you can help avoid the problems associated with stormwater runoff by:

- reducing impervious areas so that the rain soaks into the ground
- planting native trees and plants which help infiltrate stormwater and increase evaporation and transpiration
- following the lawn care practices described in this guide
- managing stormwater on-site with rain gardens, rain barrels and similar practices
- doing many small things, you have a big impact on improving stormwater management


impervious surface


permeable pavers

Photos by Matt Kofroth, LCCD



Managing stormwater on your property will not only help protect local streams, but will also help clean up downstream waterways including the Chesapeake Bay.

"As of 2011, 17.5 million people were estimated to live in the Bay watershed, up from 17.4 million in 2010. Experts predict the watershed's population will increase to more than 20 million by 2030." *(Chesapeake Bay Program)*

Section 2: Assessing Stormwater on Your Property

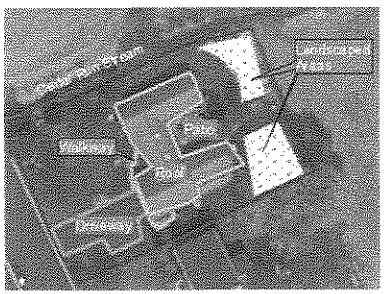
In order to better manage stormwater on your property you should first understand how stormwater is generated and flows on your property. Follow these simple steps to figure out where stormwater is generated, how it flows, and approximately how much stormwater comes from your property.

1. Walk your property and map your boundaries and basic features.

Step 1: Draw your property boundaries. Draw the boundaries of your lot. If you are not sure of your boundaries, you may be able to look this up on your property tax assessment, deed to your house, or at your county's tax office.

Map created by Kara Kalupson, LCCD

Step 2: Draw buildings and other features of your property. Draw and label the buildings and other features of your property. These include:



Map created by Kara Kalupson, LCCD

- **Impervious areas.** These are hard surfaces on your property that prevent stormwater from soaking into the ground. They include buildings, driveways, parking areas, walkways, decks, patios, or other hard surfaces.
- **Lawn and landscaped areas.** These include any areas with grass or landscaping that you regularly maintain.
- **Natural vegetation.** These are areas of woods, meadow, or other naturally vegetated areas that are allowed to grow natural on your property.
- **Water features.** These could be streams, wetlands, ponds or swimming pools.

You can determine the approximate size of each area by using a tape measure and calculating the square footage of each. Depending on the overall size of your property, you may want to calculate these areas in square feet or convert to acres (1 acre = 43,560 square feet). If your property has no natural vegetation, such as woods or meadows, or water features on it, you can simply subtract the impervious areas from your total lot size to get your total lawn and landscaped area.

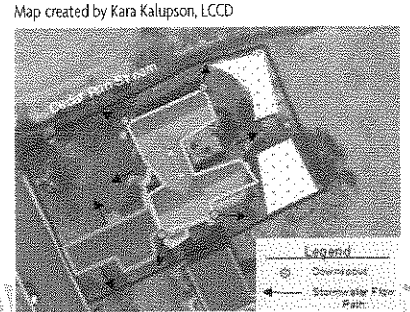
Photo by Matt Royer, Penn State

2. Assess and map your stormwater flow.

The next step is to show how and where runoff flows on your property and identify any problems it may be causing. Common stormwater problems may include large puddles ("ponding"), damp basements, soil erosion, and collapsing stream banks. The ideal time to assess stormwater flow would be during or immediately after a rain storm. Look for and map the following:

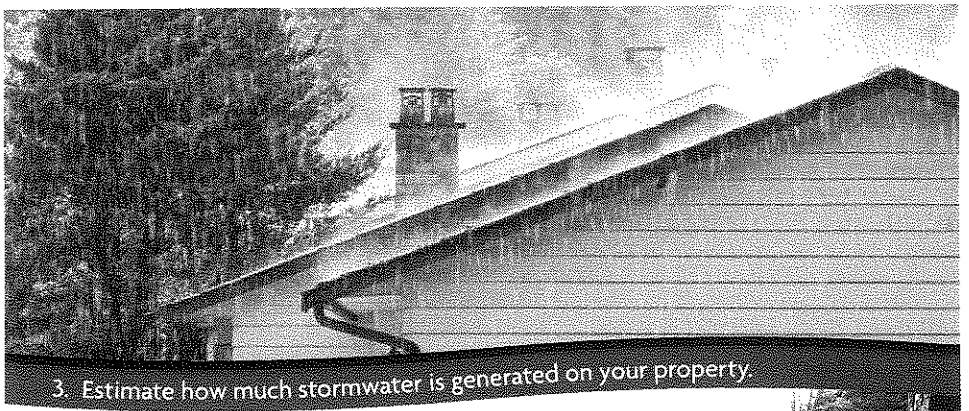
- Roof downspouts. Indicate the location of roof downspouts and the direction stormwater flows from the downspouts.
- Stormwater flow paths. Using arrows, show the direction of stormwater flow off of impervious surfaces. If you have any areas where stormwater collects, such as drainage swales or ditches, show this and label them as such.
- Areas of ponding. Indicate locations of standing water or ponding on the map.
- Gullies or ditches from soil erosion. Indicate any areas of soil erosion which have resulted in gullies or ditches. This may appear within existing drainage swales or channels, and would be good to note on your assessment.

Map created by Kara Kalupson, LCCD



If you have multiple downspouts, drainage channels, ponding areas etc., organize your map and assessment plan by numbering them.

Photo by Matt Kofroth, LCCD



3. Estimate how much stormwater is generated on your property.

The amount of stormwater runoff generated from your property depends on how long and how hard it rains, the slope of your property, the type and quality of the soils, the amount of impervious surface on your property, and other factors. Nevertheless, there is a simple calculation you can use to estimate how much stormwater runoff your property generates during a typical rainstorm.

The majority of annual rainfall in south-central Pennsylvania comes in the form of small storms of one inch or less. These small storms carry most of the pollutants that impact water quality, and thus the stormwater generated by your property for the one inch storm is a good measure of typical stormwater runoff. Use the following chart to determine how much stormwater is generated by the impervious area on your property:

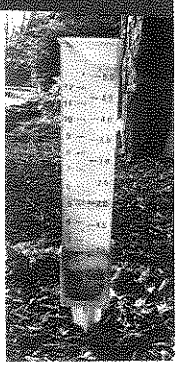


Photo by Margaret Kyler

Square Feet of Impervious Area	Gallons of Runoff to be Managed
500 or less	less than 312
501 – 1,000	312 – 624
1,001 – 2,000	624 – 1,246
2,001 – 3,000	1,246 – 1,869
3,001 – 4,000	1,869 – 2,492
4,001 – 5,000	2,492 – 3,115
5,001 – 10,000	3,115 – 6,231
10,001 – 20,000	6,231 – 12,462
20,001 – 43,000	12,462 – 26,793

The above numbers were calculated using the following formula:

(Total square feet of impervious area) x 0.0833 x 7.48 = _____ gallons of runoff

Use this formula if you want a more accurate calculation of the runoff generated from your impervious area.

0.0833 is to covert feet to inches • 7.48 = number of gallons per cubic foot

Section 3: Developing Your Stormwater Management Plan

Now that you know what areas of your property generate stormwater when it rains, how the runoff flows, and what areas generate the most amount of runoff, you can start thinking about adding stormwater management practices to your property to better manage runoff.

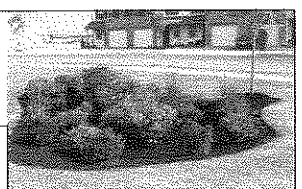
1. Types of stormwater best management practices.

Many management practices exist for handling stormwater runoff. This guide suggests six of the simpler, easier to implement practices. Each practice is introduced briefly in this section so you can consider which ones are right for you.

Rain Garden

A depressed garden that uses mulch, soil, and deep-rooted native plants to capture, absorb, and infiltrate stormwater.

Photo by Matt Kofroth, LCCD



Benefits
- Manages stormwater and filters pollutants
- Wildlife habitat
- Little maintenance
- Adds beauty

Negatives
- Plants can take 2-3 years to establish
- More maintenance required in first few years

Cost
$$

Maintenance
- Low once plants established
- Weeding and watering in first two years.
- Some thinning in later years

Aesthetic appeal
- Ranges from medium to high
- Can customize based on plant selection.

Implementation Considerations
- Construct downslope of runoff to be captured
- Plant in spring or fall
- Locate at least 10 feet from building foundations

Riparian Buffer

Planting native trees and shrubs along streams and wetlands to restore the streamside area to forested conditions. These "riparian buffers" filter runoff and have numerous water quality benefits.

Photo by Matt Kofroth, LCCD

Benefits
- Increases infiltration and groundwater recharge
- Improves water quality
- Controls erosion & sedimentation
- Provides wildlife habitat

Negatives
- Not as effective on steep slopes
- More difficult to implement than some other practices

Cost
$

Maintenance
- Low once native plants are established
- Weeding and watering in first two years
- Some plant thinning in later years
- Regularly remove debris and excessive sediment accumulation

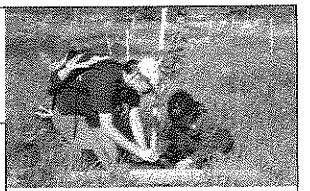
Aesthetic appeal
- Ranges from medium to high
- Higher aesthetic appeal than conventional stormwater conveyances

Implementation Considerations
- Plant in spring or fall
- Locate at least 10 feet from building foundations

Tree Planting

Planting native trees and shrubs to restore a portion of your property to forested conditions.

Photo by Matt Royer, Penn State



Benefits
- Increases infiltration and evapotranspiration of storm-water
- Filters pollutants
- Requires little maintenance
- Provides wildlife habitat
- Large canopy of native trees maximizes benefits

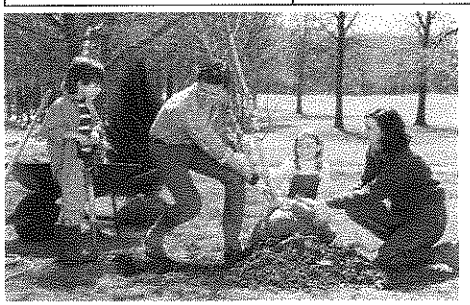
Negatives
- Takes many years before trees grow to provide maximum benefit
- Regular maintenance is required where invasive plant species exist
- Must guard against deer browsing and vole damage

Cost
$/$$
- Varies, depending on species, size, and type of tree planted

Maintenance
- Maintain tree tube/stakes or cages
- Spray and mow between trees at least twice a year during first 4 to 5 years

Aesthetic appeal
- High aesthetic appeal, as trees add interest, structure, color, and wildlife to property

Implementation Considerations
- Plant in spring or fall
- Watering may be necessary after planting during dry weather (25 gallons/week)

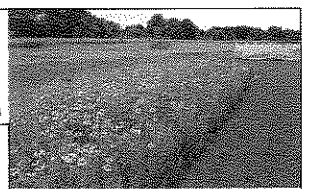


"A Wharton School of Business study found that new tree plantings in a Philadelphia neighborhood increased surrounding property values by approximately 10%."
(Wachter 2004)

Native Meadow

An area planted with native grasses and wildflowers and maintained as a natural area. "No mow" areas can also develop into meadow areas.

Photo by Dick Brown



Benefits
- Increases infiltration and evapotranspiration of stormwater
- Filters pollutants
- Requires little maintenance
- Provides wildlife habitat

Negatives
- Site preparation (including turf grass removal) is required before planting
- Meadows may conflict with local weed ordinances

Cost
$
- Native seed mixes vary depending on type of species and amount of variety desired

Maintenance
- Mow twice a year for first two years
- Mow annually
- Control invasive plant species

Aesthetic appeal
- High aesthetic appeal, as tall grasses and wildflowers add interest, structure, color and wildlife to property

Implementation Considerations
- Plant in spring
- Monitor and control invasive species

Appendix A: Stormwater Management Plan Template

You can use this template to create your stormwater management plan.

Map

First, use the grid paper provided to hand draw your stormwater management plan map. Or, follow the tutorial provided in **Appendix B** to create a computer generated aerial map.

If you hand draw your map, it is suggested you use one ink color to draw existing conditions and a different color to draw your proposed stormwater management practices.

Plan Details

Second, fill in the template to create the details of your plan. For both existing conditions and proposed stormwater management practices, be sure to label all features on your map with numbers that correspond to the plan template.

Stormwater Management Plan

Property Owners Name: _____

Property Address: _____

Municipality: _____ County: _____

Watershed: _____ (example: Little Conestoga)

Name of stream into which stormwater flows: _____ (example: Swarr Run)

EXISTING CONDITIONS

IMPERVIOUS AREAS

Buildings

Number	Description (house, shed, etc)	Square Feet

Driveways and Walkways

Number	Description (driveway, back walkway, front walkway, etc)	Square Feet

Other Hard Surfaces

Number	Description (patio, deck, etc)	Square Feet
Total Impervious Area:		

LAWN AND LANDSCAPED AREAS

Number	Description (front yard, back yard, flowerbed, etc)	Square Feet
Total Lawn and Landscape Area:		

NATURAL AREAS

Woods

Number	Description (back woodlot, side woods, etc)	Square Feet

Meadow

Number	Description (back meadow, front meadow, etc)	Square Feet
Total Natural Area:		

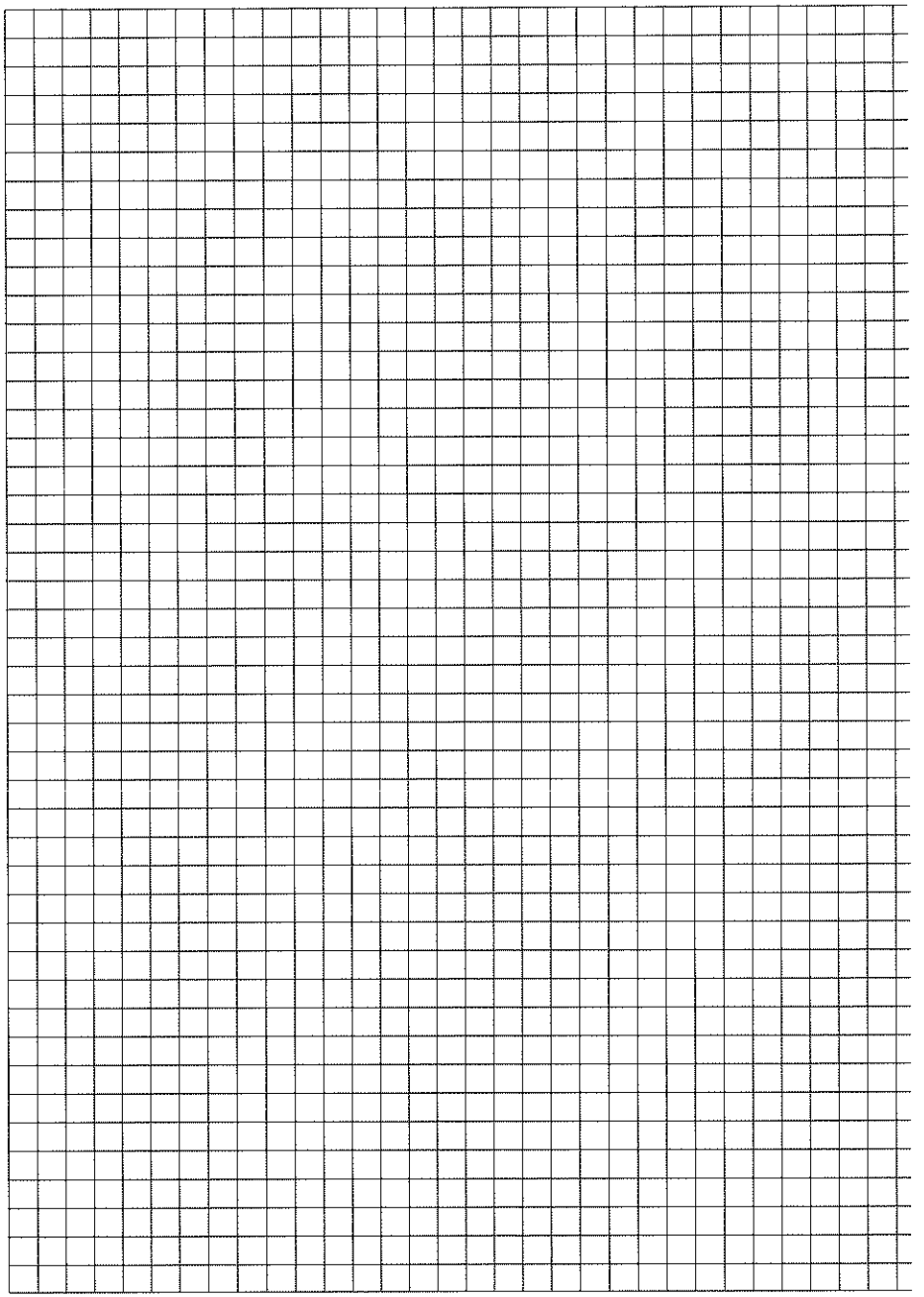
Note any water features (streams, wetlands, ponds, etc) on your property:

Total Stormwater Generated in a 1 inch rainstorm:
(Total Impervious Areas x 0.0833 x 7.48)

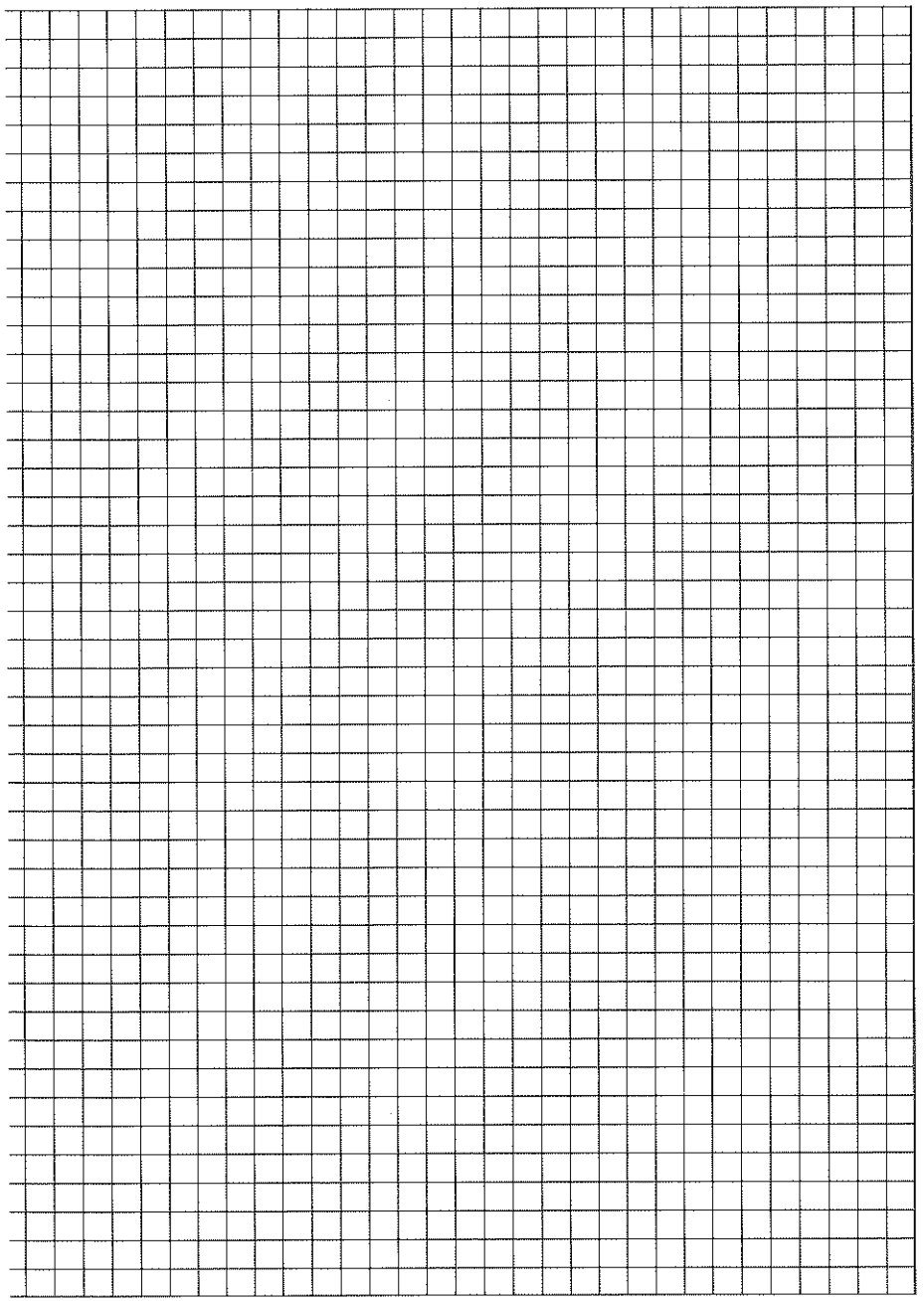
_____ ft^2 x 0.0833 ft x 7.48gal./ft^3 = _____ gallons

STORMWATER FLOW	
Downspouts	
Number	Description (front house, back house, shed, etc)
Drainage Swales	
Number	Description (side yard swale, back yard swale, etc)
Areas of Ponding	
Number	Description (side yard ponding, back yard ponding, etc)

Note any areas of gullying or erosion or any other areas of concern:



gement Plan Map



Proposed Stormwater Best Management Practices

Rain Garden		
Number	Description (front yard, back yard, etc)	Square Feet

Riparian Buffer		
Number	Description (tributary, main stem of creek, wetland, etc)	Linear Feet

Tree Planting		
Number	Description (backyard woods, side woods, etc)	Square Feet

Native Meadow		
Number	Description (side yard meadow, back yard meadow, etc)	Square Feet

Pervious Pavers		
Number	Description (front walkway; back patio etc)	Square Feet

Rain Barrel		
Number	Description (side house barrel, shed barrel, etc)	Gallons

Appendix B: Computer Mapping Tutorial

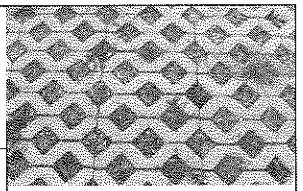
1. Open Internet Explorer.
   Go to Google maps (www.google.com/maps) or Bing maps (www.bing.com/maps) to access an aerial map of your property.
2. Type in your property address.
   Use the zoom functions to zoom in as close as you can to your property, making sure your entire lot is shown on the map. Make sure the "Satellite" or "Aerial" function is turned on so that the map is shown in aerial photography format.
3. Press "Print Screen", Paste.
   In the upper right corner of your keyboard press "Print Screen." Paste the screen shot in the program of your choice to crop and edit. We recommend Power Point, Microsoft Word or Paint.
4. Use drawing tools to add your different elements.
   Using the "shapes" or other drawing tools available you can add your areas affected by stormwater and your new BMPs. The arrows and freeform tools are particularly useful. Be sure to use different colors for different elements of your map. Text boxes can be used to add labels or a legend.
5. Save and print your map.
   When you are done, you can save your map as a .pdf or print it to go with your written stormwater management plan.

Notes:

Pervious Pavers

Impervious building materials, such as stone, concrete or brick, laid with space in between to allow for pervious areas (gravel, sand or vegetation) in driveways, parking areas, or walkways.

Photo by Matt Kofroth, LCCD



Benefits

- Increases infiltration and groundwater recharge
- Reduces volume and rate of runoff

Negatives

- More labor intensive to install than other practices
- Nonconventional option to pavement

Cost

$$

- Can save by installing permeable pavers
- May need to excavate and install sub base, increasing costs

Maintenance

- Moderate to high maintenance
- Grass between pavers may have to be mowed
- Inspect for signs of clogging
- Pressure wash and replace pea stone as needed

Aesthetic appeal

- Ranges from low to medium
- Artistic designs with layout can increase aesthetic appeal

Implementation Considerations

- Need to install permeable sub base
- Locate at least 10 feet from building foundations

Rain Barrel/Cistern

A barrel that captures rainwater from a roof and stores it for later use, such as watering plants or gardens. A cistern is a larger container that does the same thing.

Photo by Fritz Schroeder, Live Green

Benefits

- Conserves water
- Captures and reuses stormwater

Negatives

- Minimal volume captured
- Poor construction or maintenance can result in mosquitoes

Cost

$

- Very minimal cost as DIY project
- Can save dollars because of reduced potable water usage

Maintenance

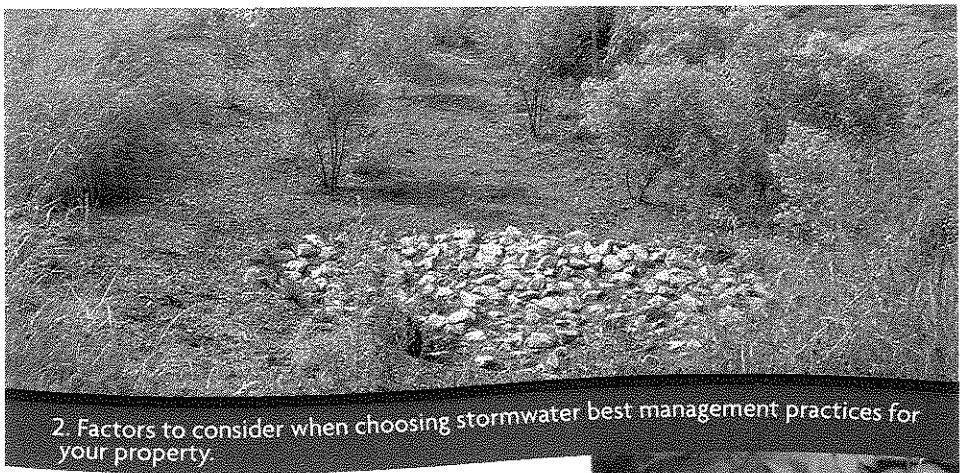
- Clean screen/filter regularly
- Clean gutters twice annually
- Monitor during severe storms to avoid overflow
- Empty before winter months

Aesthetic appeal

- Ranges from low to medium depending on type of barrel used

Implementation Considerations

- Place on level surface
- Full rain barrel weighs 400 lbs



2. Factors to consider when choosing stormwater best management practices for your property.

Here are some considerations that might help you decide which practices you would like to install on your property.

- If you would like to enhance your landscaping with flowers and other attractive plants consider a rain garden or a native meadow.
- If you want to reduce the amount of time it takes to mow the lawn, a rain garden or native meadow would help accomplish this goal.

Photo by Dick Brown

Photo by Matt Kofroth, LCCD

- If you would like to see more butterflies, a rain garden or native meadow can provide excellent butterfly habitat.
- If you have outdoor water needs (water for a vegetable garden, to water your lawn, or to wash your car) consider a rain barrel.
- If you don't have very much yard to work with, a rain barrel is probably the best choice.
- If your driveway needs repaved, consider using pervious pavers instead of traditional pavement.
- If you would like to give your patio a new look, consider pervious pavers.

Photo by Andrew Gavin, SRBC 1

- If you would like to restore forested conditions on a portion of your property, consider tree planting (or forested riparian buffer if the area to be reforested is along a stream).
- If a stream is running through your property, installing a riparian buffer would be very beneficial.
- If you want to cut down on air conditioning costs during the summer, consider planting some trees on your property.

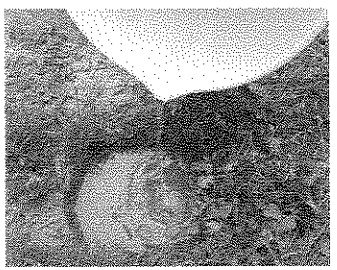
3. Choose where to locate the stormwater best management practices on your property.

Now that you know about your property and the type of practices you would like to install, it's time to choose the right location for the practices. Some considerations in your planning are:

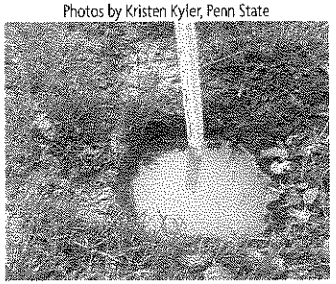
- **Ponding Water.** Many stormwater practices encourage water to infiltrate into the soil (such as rain gardens and pervious pavers). Where water ponds on your property, water is unable to infiltrate. Areas that are often saturated are not appropriate places to put these practices.

(Note- if you have an on-lot sanitary septic disposal system and an area is permanently wet near this system, the septic system may be failing. The disposal system should be evaluated and fixed before any other practices are installed.)

- **Depth to bedrock.** You do not want to construct infiltration practices where bedrock is visible or is close to the surface.
- **Proximity to foundations.** You should also avoid constructing infiltration practices within 10 feet of building foundations.
- **Location of underground utilities.** Do not construct infiltration practices near septic systems or drinking water wells. Also avoid any utilities like electric, cable, water, sewer, and gas lines. (make sure to use the PAONE-CALL system to locate underground utilities)
- **Slope.** Depending on the practice, a steeper slope may prohibit siting, or it may be something that needs to be taken into account during the design stage. Consult the chart on the next page for guidance.
- **Soil percolation.** Since rain gardens and pervious pavers are designed to infiltrate stormwater into the ground, the soil in the location of the rain garden or pervious pavers must be able to drain. When considering these practices, you should conduct a simple percolation test where you would like to locate them:
  - Dig a 1 foot deep hole and fill with water.
  - Allow the water to moisten soil and drain completely. If water is still in the hole after 24 hours, choose a different location.
  - Fill the hole with water a second time and place a ruler in the hole. Note the water level and time.
  - After 15 minutes, re-measure the water level. Multiply the change in water level by 4 to get the number of inches of infiltration per hour.



Photos by Kristen Kyler, Penn State



Use this summary chart to help you select one or more stormwater practices that are right for your property.

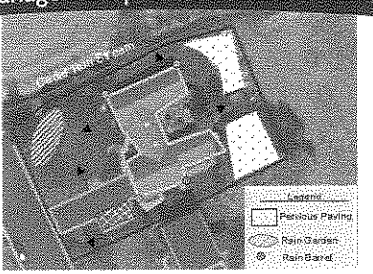
	Rain Garden	Riparian Buffer	Tree Planting	Native Meadow	Pervious Pavers	Rain Barrel/ Cistern
Space Required	Minimum Size: 50 – 200 ft² surface area 5 – 10 ft wide 10 – 20 ft long 3 – 8 inches deep	The wider the better for water quality benefits. Lot size and configuration will impact buffer width	Consider space needed for canopy spread	Not a factor	As needed to accommodate walkway, patio, or driveway	Not a factor
Slopes	Not usually a limitation, but a design consideration. Locate down slope of building foundations	Not usually a limitation, but a design consideration	Not usually a limitation, but a design consideration	5% or less	Not a factor	Not a factor
Depth to Water Table	1 – 4 ft clearance	Not a factor if correct species are planted			1 – 4 ft clearance	Not a factor
Depth to Bedrock	1 – 4 ft clearance	1 – 4 ft clearance	1 – 4 ft clearance	Not a factor	1 – 4 ft clearance	Not a factor
Building Foundations	Minimum 10 ft down slope from building foundations				Not a factor	Not a factor
Maintenance All practices should be inspected seasonally and after major storm events.	Low: Weeding and watering in first 2 years. Some thinning in later years.	Low to Moderate: Maintain tree tubes or cages. Spray and mow between trees for first 4-5 years. Control invasive plants. Water as needed.	Low to Moderate: Maintain tree tubes or cages. Spray and mow between trees for first 4-5 years. Control invasive plants. Water as needed.	Low to Moderate: Mow twice annually for first two years. Control invasive plants.	Moderate to High: Grass between pavers may have to be mowed. Inspect for signs of clogging. Pressure wash and replace pea stone as needed.	Low: Clean screen/ filter regularly. Clean gutters twice annually. Monitor during severe storms for overflow. Empty before winter months.

Chart adapted from the New Hampshire Homeowner's Guide to Stormwater Management Do-It-Yourself Stormwater Solutions. NH Department of Environmental Services (March 2011, revised February 2012).

Please remember to call PA ONE CALL before digging underground so you know where your underground utilities are located (ie electrical, sanitary sewer, water, etc.)

4. List and map your chosen stormwater best management practices.

Now that you've chosen stormwater management practices for your property, list them on the stormwater management plan template provided in Appendix A. Draw them on your property map. Again, you can either hand draw them on the graph paper provided in Appendix A, or continue to follow the Computer Mapping Tutorial in Appendix B to map your chosen stormwater practices on your computer generated property map.



Map created by Kara Kalupson, LCCD

Section 4: Implementing Your Stormwater Plan

Congratulations! Your stormwater management plan is complete! You have taken an important step in managing stormwater on your property to help clean up your local stream and the Chesapeake Bay.

Now you are ready to start implementing your plan. If you are a do-it-yourselfer, there are several online resources that provide detailed design and implementation guidance for the six practices discussed in this guide. *Note: Please refer to the disclaimer at the beginning of this guide.*

The Chesapeake Stormwater Network (www.chesapeakestormwater.net) is in the process of developing a homeowner rain garden guide that will provide excellent step-by-step guidance on designing, constructing and maintaining rain gardens and other practices. Refer to the Chesapeake Stormwater Network's website often for updates as this guide is finalized.

In the meantime, here are some other online guides you can reference:

RAIN GARDENS

Rain Gardens: A How-To Manual for Homeowners (University of Wisconsin Extension)
http://learningstore.uwex.edu/assets/pdfs/GWQ037.pdf
Rain Gardens in Connecticut: A Design Guide for Homeowners (UConn Cooperative Extension System)
http://nemo.uconn.edu/publications/rain_garden_broch.pdf
Rain Garden Templates for the Chesapeake Bay Watershed (Low Impact Development Center)
http://www.lowimpactdevelopment.org/raingarden_design/templates.htm

RIPARIAN BUFFERS

Riparian Forest Buffer Guidance (PA Department of Environmental Protection)
http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-82308/394-5600-001.pdf

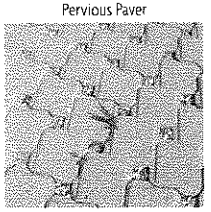
TREE PLANTING

Planting and After Care of Community Trees (Penn State Extension)
http://pubs.cas.psu.edu/freepubs/pdfs/uh143.pdf
PATrees.org: The Free Resource Guide
http://www.patrees.org

NATIVE MEADOWS

Meadows and Prairies: Wildlife-Friendly Alternatives to Lawn (Penn State Extension)
http://pubs.cas.psu.edu/FreePubs/pdfs/uh117.pdf

Pervious Paver



PERVIOUS PAVERS

New Hampshire Homeowner's Guide to Stormwater Management Do-It-Yourself
Stormwater Solutions: Pervious Walkways & Patios (NH Department of Environmental Sciences)
http://des.nh.gov/organization/divisions/water/stormwater/documents/perv-walkw-patios-fs.pdf

RAIN BARRELS AND CISTERNS

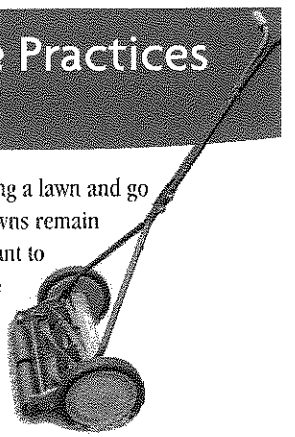
Rain Barrel Installation Instructions (Rutgers Cooperative Extension)
http://water.rutgers.edu/Stormwater_Management/rainbarrelbrochure.pdf
Build Your Own Rain Barrel (Chesapeake Bay Foundation) http://www.cbf.org/Document.Doc?id=30
Rainwater Harvesting: Guidance for Homeowners (North Carolina Cooperative Extension)
http://www.ces.ncsu.edu/depts/agecon/WECO/documents/WaterHarvestHome2008.pdf

If installing these stormwater practices is not something you want to tackle, you can take your plan to a landscape professional with experience in designing and implementing these types of stormwater practices. You may want to do some of the work yourself and enlist the help of a professional to do the other part. The choice is up to you.

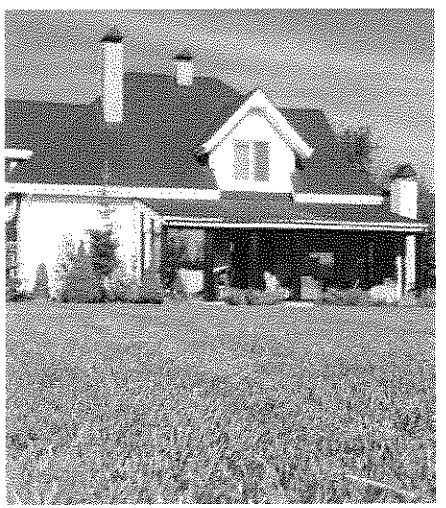
Please note that this guide focuses on six practices that are fairly simple to plan and construct. There are many other, more complex stormwater best management practices that may be applicable to your property and that you may want to consider. These include bioswales, underground cisterns, drywells, pervious pavement, infiltration trenches and many more. If you are interested in seeing if any of these types of practices are a good fit for your property, you should consult an experienced professional to plan, design and implement them.

Section 5: Healthy Lawn Care Practices

The practices described in this guide are alternatives to maintaining a lawn and go a long way to protecting our streams and the Chesapeake Bay. Yet lawns remain a significant component of the residential landscape, and are important to homeowners for many uses. By properly managing this resource, we can significantly improve water quality in the Bay.



A recent report by the Chesapeake Bay Program of EPA compiled much of the research about lawns and their contribution to pollution in stormwater runoff. Their overall conclusion is that maintaining a dense, vegetative cover of turf grass reduces runoff, prevents erosion and retains nutrients in the turf grass (see "Expert Panel Report").
http://chesapeakestormwater.net/wp-content/plugins/download-monitor/download.php?id=279.



In fact, recent estimates indicate that lawns and turf grass are now the largest "crop" in the Chesapeake Bay watershed, covering more than 3.8 million acres and eclipsing pasture, hay/alfalfa and row crops like corn, soybean and wheat. See Chesapeake Stormwater Network, Technical Bulletin No. 8: The Clipping Point.

Here are the EPA Expert Panel's recommendations for growing and maintaining a Bay-friendly lawn:

Lawn Care Practice 1. Consult with the local extension service office, certified plan writer or applicator to get technical assistance to develop an effective urban nutrient management plan for the property, based on a soil test analysis.

The precise lawn care prescription should be based on site-specific recommendations that take into account soil properties, the type of grass species, the age of the lawn, and other factors. Professional expertise is essential to develop an effective plan. Look for professionals who are Pennsylvania Certified Horticulturists or Landscape Industry Certified.

Lawn Care Practice 2. Maintain a dense vegetative cover of turf grass to reduce runoff, prevent erosion, and retain nutrients.

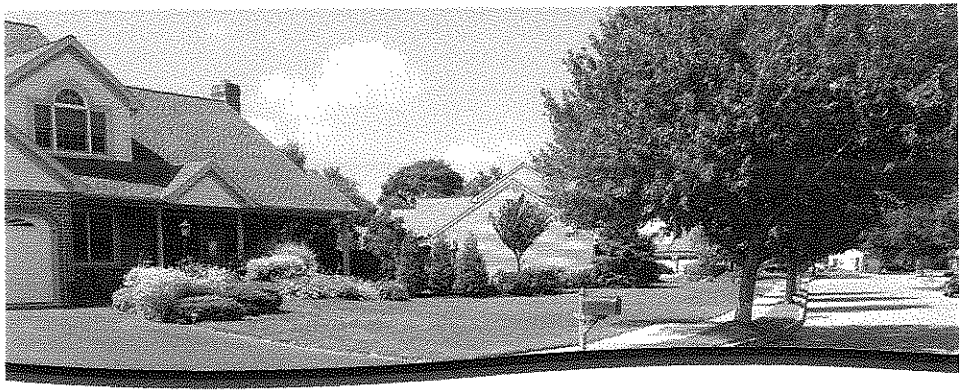
Dense vegetative cover helps to reduce surface runoff which can be responsible for significant pollution from the lawn, regardless of whether it is fertilized or not.

If your lawn does not have a dense turf grass cover, identify the factors responsible for the poor turf cover, and implement practices to improve it (e.g., tilling, soil amendments, fertilization or conservation landscaping).

Lawn Care Practice 3. Per the plan developed by your local extension agent or your lawn care professional, follow one of three fertilizer application strategies: (1) choose not to fertilize; (2) reduce rate and monitor; or (3) apply less than a pound of nitrogen per 1000 square feet per each individual application.

In order to reduce nutrient runoff from fertilizing your lawn, employ one of three fertilizer application strategies, depending upon the condition of your lawn and your needs and preferences.

First, elect not to fertilize at all. Some lawns, due to their age or natural soil fertility may be able to maintain a healthy, dense cover without additional fertilization. (However, if your lawn is thin, is weed infested or has bare spots, you should consider fertilizing to restore a thick turf grass cover, using one of the other two strategies.)



Second, take a "reduced rate and monitor" approach. For this approach, follow the nitrogen application rates on the fertilizer bag label and reduce them by one-third to a half, and monitor the results. If lawn quality starts to fall below acceptable levels, re-apply at the reduced rates.

Third, fertilize as the Penn State Extension recommended rate (3.0 to 3.5 pounds per 1,000 square feet of nitrogen per season), but split into 3 or 4 small doses during the growing season (for example, early spring, late spring, late summer and mid-fall). This will get you to an accepted application rate of less than a pound of nitrogen per 1000 square feet for each individual application.

Most bagged fertilizers in Pennsylvania have already removed phosphorus from their products, except for "starter fertilizers" used to establish grass seed in new lawns. If your soil tests show a phosphorus deficiency, ask your lawn care professional for recommendations on how to provide the phosphorus your lawn needs.

Lawn Care Practice 4. Retain clippings and mulched leaves on the lawn and keep them out of streets and storm drains.

Use a mulching mower to return grass clippings and leaves to your lawn. Lawn clippings are an important nutrient source for lawns, as well as an important source of organic matter which enhances stormwater infiltration, soil health and water retention. Nitrogen fertilization can be reduced without decreasing turf grass quality when clippings are left to decompose and return to the lawn.

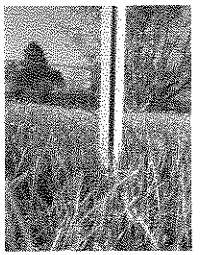
Lawn clippings are high in nutrients and should be treated as if they were a fertilizer. You should keep lawn clippings and leaves on your lawn, and out of the gutter, street or storm drain system, regardless of whether you fertilize or not. In addition, the amount of nutrients supplied by lawn clippings and mulched leaves should be accounted for when assessing fertilizer needs.

Lawn Care Practice 5. Do not apply fertilizers before spring green up or after the grass becomes dormant.

The risk of pollution by leaching or surface runoff is greatest during the seasons of the year when the grass is dormant. Avoid applying fertilizer in the late fall or winter. In spring, wait until the grass begins to green.

Lawn Care Practice 6. Maximize use of slow release N fertilizer.

Less nutrient loss occurs when slow release fertilizer products are used during the growing season, compared to water soluble formulations. Slow release fertilizer is typically shown on fertilizer products as water insoluble nitrogen (WIN), and can range from 20 to 50% of the total nitrogen product. You can shop for the fertilizer product with the greatest percentage of WIN. Avoid using in late fall as they may release nitrogen when the grass is dormant or frozen.



Lawn Care Practice 7. Set Mower height at 3 inches or taller.

Maintaining taller grass produces a deeper and more extensive root system, increasing nutrient uptake and reducing runoff. The deeper roots also capture moisture during times of drought, suppress weeds and increase turf density.

Lawn Care Practice 8. Immediately sweep off any fertilizer that lands on a paved surface.

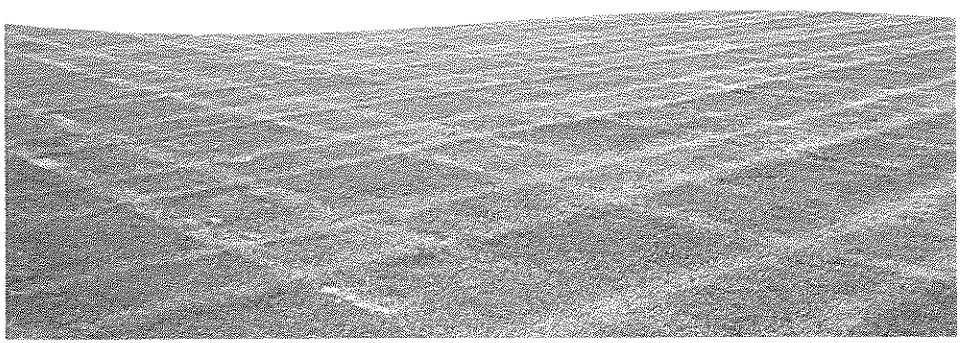
Rotary spreaders are the most common method to apply fertilizers and can broadcast fertilizer granules near the edge of the lawn, street or driveway, where they can be subsequently washed off in a rain storm. Sweep up wayward granules before they have a chance to get into gutters and storm sewers. If you use a rotary spreader, purchase one with a deflector shield to prevent spraying fertilizer on the street, driveway or sidewalks.

Lawn Care Practice 9. Do not apply fertilizer within 15 to 20 feet of a stream, pond or other water body and consider managing this zone as a perennial planting, meadow, grass buffer or forest buffer.

The risk of runoff is greatest from lawn areas adjacent to water features such as streams, shorelines, sinkholes and drainage ditches. Consider establishing a riparian buffer of shrubs, trees or perennials along streams and other water courses.

Lawn Care Practice 10. Employ stormwater practices to increase soil porosity and infiltration capability, especially along portions of the lawn that are used to convey or treat stormwater runoff.

A well maintained lawn, with a dense healthy cover of turf grass significantly slows and absorbs stormwater runoff. However, you should consider installing stormwater best management practices where runoff is causing problems. Rain gardens, rain barrels, and bioswales help lawns infiltrate excess stormwater.



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NFWF

Partners involved in this publication and the Little Conestoga Watershed Partnership include:

Alliance for the Chesapeake Bay

Brandywine Conservancy

Pennsylvania Landscape & Nursery Association

Habitat MT

Lancaster County Conservancy

Chesapeake Bay Foundation – Save the Bay

Penn State College of Agricultural Sciences

Little Conestoga Watershed Alliance

pennsylvania Department of Conservation and Natural Resources

pennsylvania Department of Environmental Protection

- Lancaster County Planning Commission
- Lancaster County Clean Water Consortium

Produced by: Lancaster County Conservation District

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1383 Arcadia Rd., Room 200
Lancaster, PA 17601
Phone: 717-299-5361 ext. 5
Fax: 717-299-9459
www.lancasterconservation.org

Attachment 2 – MCM #2 Documentation

Proof of Newspaper Publication

Invoice No. 3231451

PROOF OF PUBLICATION NOTICE IN

State of Pennsylvania}
} ss:
County of Lancaster}

Penny L. Stauffer of the County and State aforesaid, being duly sworn, deposes and says that the Intelligencer Journal-New Era a daily newspaper of general circulation published at Lancaster, County and State aforesaid, was established 1794-1877 since which date said daily newspaper has been regularly issued in said county, and that a copy of the printed notice or publication is attached hereto exactly the same as was printed and published in the regular editions and issues of said daily newspaper on the following dates:

17TH DAY OF MAY 2014

Affiant further deposes that she is the Billing Clerk duly authorized by the Lancaster Newspapers, Inc., a corporation, publisher of said Intelligencer Journal-Lancaster New Era-Sunday News a newspaper of general circulation, to verify the foregoing statement under oath, and also declares that affiant is not interested in the subject matter of the aforesaid notice or advertisement and that all allegations in the foregoing statement as to time, place and character of publication are true.

Notice is hereby given that Millersville Borough Council at its meeting on Tuesday, May 27, 2014, at 7:00 p.m., at the Millersville Borough Municipal Building, 100 Municipal Drive, Millersville, Pennsylvania, shall consider, and, if appropriate, at that meeting or at a subsequent meeting held within 60 days of the date of publication of this advertisement, shall enact an ordinance, the caption of which is as follows:

THE MILLERSVILLE BOROUGH STORMWATER MANAGEMENT ORDINANCE; TO RESTATE AND ESTABLISH STORMWATER MANAGEMENT REGULATIONS WITHIN MILLERSVILLE BOROUGH, LANCASTER COUNTY, PENNSYLVANIA, INCLUDING, BUT NOT LIMITED TO, REGULATIONS FOR STORMWATER MANAGEMENT STANDARDS, INFORMATION TO BE INCLUDED ON OR WITH STORMWATER MANAGEMENT SITE PLANS, APPLICATION/PLAN PROCESSING PROCEDURES, OPERATION AND MAINTENANCE, AND ENFORCEMENT PROVISIONS.

The proposed ordinance may be summarized as follows. Section 1 amends Chapter 315, Storm Water Management, of the Code of Ordinances to insert a new Chapter 315, Storm Water Management, which shall contain Articles I, General Provisions; II, Definitions of Terms; III, Stormwater Management Standards; IV, Stormwater Management Site Plans; V, Plan Processing Procedures; VI, Operation and Maintenance (O&M); VII, Fees and Expenses; VIII, Prohibitions; IX, Enforcement and Penalties; and X, References. Chapter 315 will also contain appendices including certificates, forms, worksheets, charts, and agreements. The proposed ordinance contains comprehensive storm water management regulations for Millersville Borough. A copy of the proposed ordinance may be examined without charge at the offices of this newspaper and at the Millersville Borough Municipal Building, 100 Municipal Drive, Millersville, Pennsylvania, Mondays through Fridays from 8:00 a.m. until 5:00 p.m. A copy of the proposed ordinance may be obtained for the cost of reproduction at the Millersville Borough Municipal Building during the above hours.

MORGAN, HALLGREN, CROSSWELL & KANE, P.C.
Borough Solicitor

(Signature)

COPY OF NOTICE OF PUBLICATION

Sworn and subscribed to before me this
19TH DAY OF MAY 2014

Carole A Good
Notary Public

My commission expires

Commonwealth of Pennsylvania
NOTARIAL SEAL
CAROLE A. GOOD, Notary Public
Lancaster City, Lancaster County, PA
My Commission Expires Feb. 25, 2018

March 25, 2014 Borough Council Meeting – Agenda, Sign-In Sheet, Minutes

Mar

MILLERSVILLE BOROUGH OFFICES
100 MUNICIPAL DRIVE
MILLERSVILLE, PA 17551-1424

MAYOR RICHARD M. MORIARTY
COUNCIL PRESIDENT MICHAEL C. KIRKHAM
BOROUGH MANAGER EDWARD J. ARNOLD

www.millersvilleborough.org

Preliminary Agenda
Millersville Borough Council Meeting
Tuesday, March 25, 2014 7:00 PM

1. Call to Order
2. Pledge to the Flag
3. Moment of Silence
4. Approval of Minutes
   a. February 25, 2014 Council Meeting Minutes
5. Citizens Requests or Concerns - (5 Minute Limit)
6. Reports of Committees or Boards
   a. Blue Rock Fire District Report
7. Mayor's Report
   a. Certificate of Appreciation
8. Millersville University Report
9. Penn Manor School Report
10. Finance Committee
    a. Presentation of 2013 Audit by Borough Auditors Representing Trout, Ebersole & Groff
    b. Consider Acceptance of Borough 2013 Audit Report
    c. Consider 2014 General Fund Transfer to General Capital Reserve Fund
    d. Consider 2014 Sewer Capital Reserve Budgetary Adjustment
    e. Consider Credit Card Application
    f. Consider Acceptance of January 2014 Monthly Financial Reports
    g. Consider Acceptance of February 2014 Monthly Financial Reports
    h. Consider Resolution to Trade-in Vehicle for New Police Vehicle
11. Wastewater Committee
    a. Consider New Residential Sewer Service Connection (Manor Township Parcel)
    b. Consider Advertisement for Sludge Hauling Contract
12. Planning and Betterment Committee
13. Street Committee
    a. Consider Advertisement of Stormwater Ordinance
    b. Consider Use of Public Streets
    c. Annual Report and Educational Outreach for Borough's MS4 Stormwater Permit
14. Safety Committee
    a. Consider Change to Police Standard Operating Policy Manual
15. Personnel Committee
    a. Consider Annual Management Review Compensation Rate
    b. Consider Appointment to Blue Rock Regional Fire District Board
16. President's Report
17. Executive Session (if needed)
18. Borough Manager
    a. Mention of Zoning Ordinance Amendment (Historic Overlay)
    b. Consider Voting Delegate to PA Sate Association of Boroughs
19. Adjournment

MILLERSVILLE BOROUGH OFFICES
100 MUNICIPAL DRIVE
MILLERSVILLE, PA 17551-1424

MAYOR RICHARD M. MORIARTY
COUNCIL PRESIDENT MICHAEL C. KIRKHAM
BOROUGH MANAGER EDWARD J. ARNOLD

www.millersvilleborough.org

MEETING: **Borough Council**

PLEASE PRINT

DATE: **March 25, 2014**

TIME: **7:00pm**

NAME	ADDRESS	REPRESENTING
Steve DiGiuseppe		MU
Duane Hagerman		BRFR
Sam Bigler	17 UA Park	Self
Ed Saylor		Self
Nate Rosenberg	134 Scarborough Ln	PM
Andy Boxleitner		Boro
Elaine Jones		LNP
Joh Johns		Self
Tom Duke	123 Manor	Self

March 25, 2014
MILLERSVILLE BOROUGH COUNCIL MEETING MINUTES

The MILLERSVILLE BOROUGH COUNCIL MEETING was held on Tuesday, March 25, 2014 in the Millersville Borough Public Meeting Room located at 100 Municipal Drive, Millersville, Pennsylvania.

The meeting was called to order at 7:03 p.m. by Council President, Michael C. Kirkham followed by the pledge to the flag. A moment of silence was then observed.

COUNCIL MEMBERS

Michael C. Kirkham
Philip A. Lastowski
Lynn M. Miller
David T. Aichele
Richard M. Moriarty, Mayor
Linda J. Deal (absent)
James A. Stager (absent)
Daniel P. Ostrowski

OTHERS PRESENT

Edward J. Arnold, Millersville Borough Manager
John D. Rochat, Millersville Borough Chief of Police
Andrew M. Boxleitner, Street Superintendent
Jessie L. Ebersole, Millersville Borough Staff
Edward R. Saylor, Planning Commission Vice President
Steven A. DiGuiseppe, Millersville University
Nathan Rosenberg, Penn Manor Student Advisor
Duane E. Hagelgans, Blue Rock Regional Fire Commissioner
Jill Gilbert, Trout, Ebersole & Groff, LLP, Borough Auditor
Kristy Beckman, Trout, Ebersole & Groff, LLP, Borough Auditor
Elaine J. Jones, Lancaster Intelligencer Journal / New Era
Sam Bigler, 17 Wabank Rd., Millersville
Tom Dukes, 123 Manor Ave., Millersville
John Folker, 115 West Charlotte St., Millersville

MINUTES

None

CITIZEN'S REQUESTS OR CONCERNS

Mr. Saylor of 532 Thorngate Place had a few items of concern. He first asked if the Borough would consider having a collection site here for the National Prescription Drug Take-Back program. This program aims to provide a safe, convenient, and responsible means of disposing medications and prescription drugs. The Safety Committee will look into this request. Second, Mr. Saylor asked about the replacement of the damaged stop sign at the intersection of West Frederick Street and North Duke Street. Mr. Boxleitner, Street Superintendent responded that PennDOT has it ordered and it should be here soon. Next, he finds Millersville University's 'Snapper' magazine interesting and would like to be able to pick up copies here at the Borough

office. Mr. DiGuiseppe will see that copies are provided. Finally, with the Spring weather approaching he would like to see the sidewalk completed on West Frederick Street where they had removed the telephone poles during the West Frederick Street Phase 1 project. Mr. Arnold will follow up with the Contractor.

REPORTS OF COMMITTEES OR BOARDS

Mr. Hagelgans, Fire Commissioner reported on the Blue Rock Regional Fire District's 2013 Year End Report. Summarizing, the operating expenses came in at about 82% of budget, all the buildings' expenses at about 81% of budget and the total expenses came in at 68% of total budgeted expense. This low overall percentage (68%) is due to having no Capital expenditures reported this year. Mr. Hagelgans stated that in negotiations of the cell tower communications service lease, the County will be purchasing the radios that were budgeted as a Capital expense. He noted that the total net income for the year ended at $355,744. He also mentioned that with a positive year-end close for the late two years; they are aggressively reducing a $600,000 debt with a high interest rate. They anticipate saving approximately $100,000 in interest by paying off this debt early. Mr. Hagelgans went on to announce that volunteers are up. One of their main initiatives is to actively recruit and retain membership. Most of this increase in volunteers is from the University. Mr. Lastowski, Vice-Chair of the Blue Rock Regional Fire Commission stated it is an honor to serve with the dedicated people that we have providing fire service to the community and thanked Mr. Hagelgans for his part in being fiscally responsible.

FINANCE COMMITTEE – 2013 FINANCIAL STATEMENTS AUDITOR'S REPORT

Mr. Lastowski announced the Finance Committee met on March 19th and previewed the Borough's 2013 Financial Statements with supplementary information provided by the Auditors. Mr. Lastowski introduced Mrs. Jill Gilbert and Mrs. Kristy Beckman from Trout, Ebersole & Groff, LLP, the Borough's financial auditors. Mrs. Gilbert explained that they did an audit of the Borough's financial statements as they have for many years. She mentioned these are the Borough's financial statements and that in their auditing Trout, Ebersole & Groff gives an opinion of the Financials. The opinion that the Borough received this year is an 'unmodified' opinion; meaning there were no issues that arose that would have caused them to modify the financial statements. She advised Council, especially the new members to read the Management's Discussion and Analysis, pages 3 through 10, as it gives a good description of what has happened during the year and anticipates what will happen next year. She then proceeded to go through various pages of explanation. The first section reviewed was the Government Wide financial statements. These are statements that bring all the borough's funds together. She noted the borough's ending net position at December 31, 2013 is $14,218,767; this amount takes into consideration the borough's assets and liabilities. The next financial statements Mrs. Gilbert explained were the borough's major funds; the General fund, General Capital Reserve fund, and the Highway Aid fund. These funds showed a net increase of $295,859 and a net ending fund balance of $3,700,192. The other financial statements reviewed were the borough's proprietary funds, otherwise known as the business funds, where you charge a fee for service; the Sewer and Sewer Capital Reserve funds, Solid Waste fund and the Educational Service Agency fund. These funds showed a net increase of $639,527 and a net ending fund balance of $9,080,524. She continued to explain the borough's fiduciary funds.

These are funds that the borough maintains; the employee's Pension funds, Deferred Compensation fund, and the Park fund. She noted the investment income of these funds did well this past year, with an increase of $1,269,427 in the Pension funds and $52,711 in the Park fund. The pages following the financial statements are the relative notes to the financial statements. Mrs. Gilbert gave reference to Note 6, the Borough's changes in Capital Assets and Note 8, the Borough's Long Term Debt. The last statement highlighted was the budget versus actual figures in revenues, expenditures and transfers. The Borough's revenues came in $292,681 more than budget mostly due to the earned income tax collected and the building permit fees received from the University's new dormitory construction project. Expenditures were $138,390 less than budgeted mostly due to staffing positions that were not filled before yearend. President Kirkham thanked Mrs. Gilbert and Mrs. Beckman for their excellent presentation and all their efforts during the audit and for putting together the final version of the Borough's Financial Statements. He also thanked Mr. Arnold, Mrs. Ebersole and all the Staff, as well as the Finance Committee for another good job.

MAYOR'S REPORT

Mayor Moriarty asked President Kirkham to present the certificate of recognition to the Street, Wastewater Treatment Plant and Borough's departmental personnel for their outstanding service during the wintery storms. President Kirkham read the certificate and Mr. Arnold accepted on behalf of the staff.

Mayor Moriarty reported on the monthly police report stating February would have seemed to be a quiet month due to all the snow but in looking at the Calls for Service it is the third highest month of February in the past ten years. He also noted the list of Detective's investigations, commenting on the continuance of high activity. Chief Rochat commented on the continuation of the return of merchandise from the large burglary case and stated that they will have some unclaimed items at the end of this returning process. He also mentioned Officer Turner is still in field training and that the new officer, Alan Anderson is starting tomorrow.

MILLERSVILLE UNIVERSITY REPORT

Mr. DiGuiseppe announced various upcoming events. The honors and awards convocation is scheduled to be held April 26th starting at 10:30 a.m. at the Student Memorial Center. He announced Commencement for graduates will be May 9th in Pucillo Gym and Commencement for undergraduates will be on May 10th starting at 10 a.m., weather permitting at Biemesderfer Stadium. Mr. DiGuiseppe reported that electrical utilities upgrades will begin this month on campus. He anticipates there will be numerous planned power outages, of varying durations, as approximately fifty miles of underground cable is scheduled to be replaced. The project may take as long as two years to complete. All major buildings on campus, including residence halls will be affected by the power outages at some point during construction.

Ms. William was unable to attend but asked Mr. DiGuiseppe to read her topics to report. Some items read were that students have returned to campus from having a week off for Spring Break, the annual Super Fest is scheduled for the weekend of May 2nd and 3rd and that Mr. DiGuiseppe has been appointed as one of the new advisors to the Student Senate.

Mr. DiGuiseppe reported that the last Veterans Memorial Committee meeting was held today. It was decided that as of May 1st the operating procedures will be presumed by the borough staff. Brick orders and donations are still being accepted. He announced that as of today they have sold 720 bricks. Mr. Arnold recognized Mr. DiGuiseppe for a terrific job directing us through this lengthy project. He also added that on the transition date of May 1st the cost of the bricks will be increasing to $50 for a brick with two-lines and $75 for a brick with three-lines.

PENN MANOR SCHOOL REPORT

Mr. Rosenberg reported that as of now the Penn Manor High School Commencement will remain as scheduled on June 3rd at the F&M College Alumni Sports Complex Center. He also announced longtime Penn Manor High School social studies teacher and coach Joe Herman has been honored with a 2014 Teacher Impact Award. Herman has spent his entire 39½-year career at Penn Manor, teaching European, Asian, U.S. and Pennsylvania History, Field Geography, Psychology and Economics. He also has coached track and field for his entire career and was a boys' soccer coach for 32 years and a field hockey coach for 3 years. He also announced the Penn Manor Education Foundation recently awarded more than $16,000 in Venture Grants for 18 projects designed to enhance learning for students at all levels in district's schools. Martieville Middle School will get a new kiln to replace a 25-year-old machine and Central Manor Elementary School used its grant to buy a set of Whisper Phones that enable students to practice their oral reading skills without disrupting their classmates.

FINANCE COMMITTEE – (CONTINUED)

Mr. Lastowski made a motion to accept the 2013 Audit Report of the Borough's Financial Statements as presented by Trout, Ebersole and Groff. Mr. Ostrowski seconded the motion. With no further discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion out of committee to approve the 2014 budget adjustment and transfer of $500,000 from the General fund to the General Capital Reserve fund as a result of the 2013 Audit report. Mrs. Miller asked for an explanation on this transfer. Mr. Arnold explained that the Borough maintains separate operating and capital funds. The operating funds are used for what is needed to "operate" during the Borough's calendar year. The capital funds are the result of money being moved out of the operating fund and "reserved" for capital purchases. For example, the borough's transportation improvement project is estimated at $2.5 to $3 million dollars. That $500,000 transfer can be used toward that multi-million dollar project. Mr. Arnold also noted that the borough maintains both a General Capital Reserve fund and a Sewer Capital Reserve fund. With no further discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion out of committee to approve a Sewer Capital Reserve budget adjustment in the amount of $10,500 for the purchase of an automatic chlorine shut off valve at the Wastewater Treatment Plant and the offsetting budget adjustment to the replacement of the Digester Blowers project. It was noted that the Digester Blowers project's bid was awarded less than budgeted. With no further discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion out of committee to approve the application for a credit card with a $3,000 limit to be used for purchasing items for the Borough. With no discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion, seconded by Mr. Ostrowski to accept the January, 2014 Financial Reports as presented to the committee by Borough Manager, Edward Arnold. With no discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion, seconded by Mr. Ostrowski to accept the February, 2014 Financial Reports as presented to the committee by Borough Manager, Edward Arnold. With no discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion out of committee to approve the Resolution authorizing the trade in of the Borough's 2007 Ford Crown Victoria police cruiser for a new 2014 Ford Utility Police Interceptor. With no discussions the motion passed by a unanimous voice vote.

RESOLUTION BOOK
RESOLUTION NO. 2014-10

Mr. Lastowski mentioned receiving the January 2011 to December 2012 Liquid Fuels Tax Fund audit report from the State's Auditor General's Office. The report states that no instances of non-compliance, no significant deficiencies and no material weaknesses were found.

WASTE WATER COMMITTEE REPORT

Mr. Ostrowski made a motion out of committee to allow a new residential sewer service connection for Mr. John Folker's home located at 115 West Charlotte Street, Manor Township for one (1) EDU (equivalent dwelling unit) and one (1) tapping fee. Mr. Arnold explained that the owner has received clearance from the Pennsylvania PUC (Public Utility Commission). As a further explanation, the Pennsylvania PUC governs any rate you impose outside your jurisdiction. With no further discussions the motion passed by a unanimous voice vote.

Mr. Ostrowski made a motion out of committee to advertise the Borough's sludge hauling contract. He noted the Biosolids Management Service agreement would be for another two year term with a one year extension option. The current contract expires May 31, 2014. With no further discussions the motion passed by a unanimous voice vote.

PLANNING AND BETTERMENT COMMITTEE

None

STREET COMMITTEE

Mr. Aichele made a motion out of committee to advertise the Stormwater Management Ordinance. This ordinance is to restate and establish stormwater management regulations within the Borough in accordance to Act 167, the Pennsylvania Storm Water Management Act, and the Storm Water Management Plan. Mr. Arnold commented that this ordinance is being reviewed by the Borough's Solicitor and Engineer and he anticipates seeing revisions to the draft version distributed. He also mentioned our Engineer will attend the Council meeting where we consider adoption, to provide further clarification of the final ordinance. With no further discussions the motion passed by a unanimous voice vote.

Mr. Aichele made a motion out of committee to approve the use of public streets for the 5th Annual Recreation Alliance Bike Ride on Sunday, June 22, 2014. It was noted that a small portion of the route will come through the Borough; North Duke Street, West Frederick Street and South Duke Street. With no discussions the motion passed by a unanimous voice vote.

Mr. Aichele introduced Street Department Superintendent, Mr. Andy Boxleitner to present his annual MS4 stormwater permitting report for DEP's requirement for the year 2013. Mr. Boxleitner stated each year they inspect 25% of the outfalls for elicit discharge, both public and private. They are also required to educate the public and staff on DEP's good housing keeping and record keeping. This is partially done by a pamphlet entitled "When it Rains, It Drains" being distributed through the Penn Manor High School, on the Borough's website, and in the Borough's lobby. He discussed liability issues and his concerns with having volunteers participate in the Borough and noted there were no volunteer programs performed in 2013. He stated for 2013 there was one storm water complaint received that was thoroughly investigated and that no enforcement action was necessary. He also stated there were two complaints to the Lancaster County Conservation District that were investigated and again no action taken.

SAFETY COMMITTEE REPORT

Mrs. Miller made a motion out of committee to adopt the revised Rules and Regulations of the Police Standard Operating Procedures specifically regarding Body Art and Grooming Standards. She noted a letter was received from the Millersville Borough Police Association stating they have been advised of the proposed changes and that they understand there has been a change in the regulations for the display of tattoos and that the Association has no concerns or objections. With no discussions the motion passed by a unanimous voice vote.

Mrs. Miller mentioned that the Mayor and Chief Rochat gave a presentation on the 2013 Annual Police Report.

Mrs. Miller also mentioned they have been taking action to get a Spring Landlord meeting organized. They are working with the University on setting a date for this Spring and a Fall date as well.

PERSONNEL COMMITTEE

Mr. Lastowski made a motion out of committee to approve a 2.1% increase to the Managerial Staff retroactive to January 1, 2014. Mr. Lastowski noted that after much discussion, consideration and analysis by the Personnel Committee a compromise was reached for the management pay increases for 2014. Mayor Moriarty asked Council to consider in future years to "piggy back" on the union contract and give Management personnel, at minimum the same amount. In his opinion giving the Managers less creates all sorts of problems with morale and with the salary scale. He further voiced that this lesser salary increase impact to the people that run our Borough is significant and demoralizing and that from a policy perspective you could simply follow the practice already put in place with the Unions. With no further discussions the motion passed by a unanimous voice vote.

Mr. Lastowski made a motion out of committee to approve the Resolution to appoint Mrs. Lucie M. Lehr to the Blue Rock Regional Fire Commission to serve the remainder of the two year term which ends December 31, 2014. With no discussion the motion passed by a unanimous voice vote.

RESOLUTION BOOK
RESOLUTION NO. 2014-11

PRESIDENT'S REPORT

President Kirkham congratulated Chief John Rochat; as today is his 16th year anniversary working for the Borough.

EXECUTIVE SESSION

None

BOROUGH MANAGER REPORT

Mr. Arnold mentioned the Zoning Ordinance amendment will be advertised next month for a public hearing to be held at the April Council meeting. He noted there are a few changes proposed to the Historic District inventory; the most notable is the removal of the property that is in conflict with the connection of North and South Duke Street in the upcoming transportation project.

Mr. Arnold asked Council to consider making a motion to appoint the Borough Manager to serve as the voting delegate for the purpose of electing officers of the PSAB and voting on proposed resolutions and policies at the annual meeting. Mr. Lastowski made such a motion, seconded by Mrs. Miller. With no further discussions the motion passed by a unanimous voice vote.

ADJOURNMENT

There being no further business to discuss, Mr. Ostrowski made a motion, seconded by Mr. Lastowski to adjourn the meeting at 8:50 p.m. The motion passed by unanimous voice vote.

Respectfully submitted,

Edward J Arnold

Edward J. Arnold
Borough Manager

EJA/jle

Attachment 3 – MCM #3 Documentation

Storm Sewer System Map

IDDE Quarterly Reports

Illicit Discharge Inspection Quarterly Summary Report

Municipality: MILLERSVILLE BOROUGH

Contact Name: ANDREW M. BALLENTINE

Reporting Period: January – March (April – June) July – September October – December

Year: 2013

I. Field Activities

1. *Describe field surveys.*	Industrial Areas	Commercial Areas	Residential Areas	Other (describe)
Number of screening points			28	
Channel Miles				

2. *List how many discharges were identified by the following methods.* Include only discharges that could have been prevented by BMPs. Do not include fluid releases associated with minor traffic accidents.

a. During field surveys at defined screening points:
- 0 identified by maintenance crews
- 0 identified by illicit discharge inspectors

b. Calls from:
- _____ maintenance crews
- _____ other agencies
- _____ public

3. *List the number of times the following materials were identified.*
- 0 Paint
- 0 Concrete
- 0 Construction Debris
- 0 Medical Wastes
- 0 Food Wastes
- 0 Industrial Wastes (solvents, metals, corrosives, cooling tower blowdown, etc.)
- 0 Concrete Cutting Slurry/Washwaters
- 0 Vehicle Cleaning Washwaters
- 0 Building/Sidewalk Washwaters
- 0 Other Washwaters
- 0 Sewage
- 0 Automotive Fluids (antifreeze, used motor oil, fuels, etc.)
- 0 Other (describe): _____

II. Follow-up Activities

1. *Describe whether sources of discharges were identified.*
- _____ Number of sources that were identified
- _____ Number of incidents when source of discharge was not identified

2. *Describe whether discharges were abated.*
- _____ Number of discharge incidents that were abated.
- _____ Number of new discharge incidents where discharge is continuing, as of the end of the reporting period. (ATTACH INSPECTION REPORT)
- _____ Number of continuing discharges that have already been reported in previous quarter(s).

3. *Describe enforcement activities conducted.*
- _____ Verbal Notice
- _____ Warning Notice
- _____ Administrative Action
- _____ Administrative Action w/ Penalty and/or Fine
- _____ Legal Notice

This form was modified from *Municipal Urban Runoff Program: A How-To Guide For Developing Urban Runoff Programs for Small Municipalities*, by the

Illicit Discharge Inspection Quarterly Summary Report

Municipality: MILLERSVILLE BOROUGH

Contact Name: ANDREW BAKEWELL

Reporting Period: January – March April – June July – September October – December

Year: 20 13

I. Field Activities

1. *Describe field surveys.*	Industrial Areas	Commercial Areas	Residential Areas	Other (describe)
Number of screening points			12	
Channel Miles				

2. *List how many discharges were identified by the following methods.* Include only discharges that could have been prevented by BMPs. Do not include fluid releases associated with minor traffic accidents.

a. During field surveys at defined screening points:
- 0 identified by maintenance crews
- 0 identified by illicit discharge inspectors

b. Calls from:
- _____ maintenance crews
- _____ other agencies
- _____ public

3. *List he number of times the following materials were identified*

- 0 Paint
- 0 Concrete
- 0 Construction Debris
- 0 Medical Wastes
- 0 Food Wastes
- 0 Industrial Wastes (solvents, metals, corrosives, cooling tower blowdown, etc.)
- 0 Other (describe): _____
- 0 Concrete Cutting Slurry/Washwaters
- 0 Vehicle Cleaning Washwaters
- 0 Building/Sidewalk Washwaters
- 0 Other Washwaters
- 0 Sewage
- 0 Automotive Fluids (antifreeze, used motor oil, fuels, etc.)

II. Follow-up Activities

1. *Describe whether sources of discharges were identified.*
- _____ Number of sources that were identified
- _____ Number of incidents when source of discharge was not identified

2. *Describe whether discharges were abated.*
- _____ Number of discharge incidents that were abated.
- _____ Number of new discharge incidents where discharge is continuing, as of the end of the reporting period. (ATTACH INSPECTION REPORT)
- _____ Number of continuing discharges that have already been reported in previous quarter(s).

3. *Describe enforcement activities conducted.*
- _____ Verbal Notice
- _____ Warning Notice
- _____ Administrative Action
- _____ Administrative Action w/ Penalty and/or Fine
- _____ Legal Notice

This form was modified from *Municipal Urban Runoff Program: A How-To Guide For Developing Urban Runoff Programs for Small Municipalities*, by the

Inlet Maintenance Summary

	Date	Employee Name	Maintenance Summary
1	11 MAR 13	RAF / J D	CLEAN INLETS
2	12 MAR 13	RAF / JD	CLEAN PIPE
3	13 MAR 13	RAF / CK / KM	CLEAN UP ALONG CURBS
4	08 APR 13		STREET SWEEPING
5	11 APR 13		STREET SWEEPING
6	15 APR 13		STREET SWEEPING
7	16 APR 13	RAF / KM / CK	CLEAN INLETS
8	18 APR 13	RAF / KM / CK	CLEAN, NLET BOXES
9	22 APR 13	KM / CK	CLEAN INLETS
10	22 APR 13	RF / CK / KM	CLEAN INLET BOXES
11	23 APR 13	RF / KM / CK	CLEAN INLETS
12	13 MAY 13	RF / CK	CLEAN INLETS
13	23 MAY 13	RF / KM	CLEAN INLETS
14	24 MAY 13	KM / CK	CLEAN INLETS
15	07 JUN 13	KM / CK	CLEAN INLETS
16	13 JUN 13	RF / AB / KM / CK	CLEAN INLETS
17	18 JUN 13	RF / KM / CK	CLEAN INLETS
18	27 JUN 13	KM / CK	CLEAN INLETS
19	28 JUN 13	KM / CK	CLEAN INLETS
20	01 JUN 13	AB / CK / KM / RF	CLEAN INLETS
21	24 JUN 13	CK / KM	CLEAN INLETS
22	08 AUG 13	CK / KM / RC	CLEAN INLETS
23	13 AUG 13	RF / CK	CLEAN INLETS
24	12 SEP 13	KM / AB / CK / RF	CLEAN INLETS
25	13 SEP 13	KM / AB / CK / RF	CLEAN INLETS
26	30 SEP 13		STREET SWEEPING
27	07 OCT 13	KM / AB / RF / CK	CLEAN INLETS
28	10 OCT 13	RF / CK / AB	CLEAN INLETS
29	11 OCT 13	RF / AB / BB / CK / KM	CLEAN INLETS
30	01 NOV 13	AB / CK / RF / KM	CLEAN INLETS
31	07 NOV 13	AB / KM	CLEAN INLETS
32	18 NOV 13	RF / CK / KM	CLEAN INLETS
33	26 NOV 13	AB / CK / KM	CLEAN INLETS
34	27 NOV 13	AB / CK / KM / BB	CLEAN INLETS
35	06 DEC 13	KM / AB	CLEAN INLETS
36	23 DEC 13	AB / BB / SB	CLEAN INLETS
37	30 DEC 13	AB / BB / CK	CLEAN INLETS

Inlet Maintenance Summary

	Date	Employee Name	Maintenance Summary
38	04FEB14	AB/KM/RF/CK/C	CLEAN INLETS
39	19FEB14	AB/CK/RF/KM	CLEAN INLETS
40	31MAR14	AB/CK/RF/KM	CLEAN INLET BOX/FLUSH LINE
41	11 JUN 14	CK/KM/RF	CLEAN INLETS
42	17JUN 14	AB/CK/RF/KYLE	REPAIR/RAISE INLET
43	14JUL 14	KM/CK/RF/AB	CLEAN INLETS
44	15JUL14	AB/RF/KM/CK	CLEAN INLETS
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May 27, 2014 Stormwater Ordinance

MILLERSVILLE BOROUGH

STORM WATER MANAGEMENT ORDINANCE

ADOPTED May 27, 2014

BOROUGH OF MILLERSVILLE

Lancaster County, Pennsylvania

ORDINANCE NO. 2014-02

THE MILLERSVILLE BOROUGH STORMWATER MANAGEMENT ORDINANCE; TO RESTATE AND ESTABLISH STORMWATER MANAGEMENT REGULATIONS WITHIN MILLERSVILLE BOROUGH, LANCASTER COUNTY, PENNSYLVANIA, INCLUDING, BUT NOT LIMITED TO, REGULATIONS FOR STORMWATER MANAGEMENT STANDARDS, INFORMATION TO BE INCLUDED ON OR WITH STORMWATER MANAGEMENT SITE PLANS, APPLICATION/PLAN PROCESSING PROCEDURES, OPERATION AND MAINTENANCE, AND ENFORCEMENT PROVISIONS.

BE AND IT IS HEREBY ORDAINED AND ENACTED by Borough Council of the Borough of Millersville, Lancaster County, Pennsylvania, as follows:

Section 1. The Code of Ordinances of the Borough of Millersville, Chapter 315, Stormwater Management, shall be deleted in its entirety and a new Chapter 315, Stormwater Management, shall be inserted which shall provide as follows:

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ARTICLE I. GENERAL PROVISIONS

§315-01 SHORT TITLE

This Ordinance shall be known and may be cited as the "Millersville Borough Stormwater Management Ordinance."

§315-02 STATEMENT OF FINDINGS

Millersville Borough Council finds that:

A. Inadequate management of accelerated stormwater runoff resulting from development throughout a watershed increases flood flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of existing streams and storm sewers, greatly increases the cost of public facilities to convey and manage stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases nonpoint source pollution of water resources.

B. A comprehensive program of SWM, including reasonable regulation of development and activities causing accelerated runoff is fundamental to the public health, safety, welfare, and the protection of the people of the Borough and all the people of the Commonwealth, their resources, and the environment.

C. Stormwater is an important water resource, which provides 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 Municipal Separate Storm Sewer Systems (MS4) under the National Pollutant Discharge Elimination System (NPDES).

E. Riparian forest buffers enhance water quality by filtering pollutants in runoff, providing light control and temperature moderation, processing pollutants, increasing infiltration and providing channel and shoreline stability thus decreasing erosion (DEP Riparian Forest Buffer Guidance, November 27, 2010).

§315-03 PURPOSE

The purpose of this Chapter is to promote health, safety, and welfare by minimizing the harms and maximizing the benefits described in §315-02 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. Preserve the natural drainage systems as much as practicable.

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 Operation and Maintenance of all Stormwater Management Best Management Practices (SWM BMPs) that are implemented within the Borough.

H. Provide standards to meet NPDES permit requirements.

I. Promote stormwater runoff prevention through the use of nonstructural Best Management Practices (BMPs).

J. Provide a regulatory environment that supports the proportion, density and intensity of development called for in the comprehensive plan; allow for creative methods of improving water quality and managing stormwater runoff; and promote a regional approach to water resource management.

K. Help preserve and protect exceptional natural resources and conserve and restore natural resource systems.

L. Promote stormwater management practices that emphasize infiltration, evaporation, and transpiration.

§315-04 STATUTORY AUTHORITY

A. Primary Authority: The Borough is empowered to regulate these activities by the authority of the Act of October 4, 1978, 32 P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Stormwater Management Act" and Act 394 of 1937, as amended, 35 P.S. Section 691.1 et seq. the Pennsylvania Clean Streams Law. The Borough also is empowered to regulate land use activities that affect stormwater impacts by the authority of the Borough Code, Act of February 1, 1966, P.L. (1965) 1656, No. 581, as reenacted and amended by the Act of May 17, 2012, P.L. 262, No. 43, as amended, and as reenacted, amended and codified by Act 37 of 2014, 8 Pa. C.S. §101 et seq

B. Secondary Authority: The Borough 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.

§315-05 APPLICABILITY

The provisions, regulations, limitations, and restrictions of this Chapter shall apply to regulated activities as defined in this Chapter.

A. This chapter applies to any regulated earth disturbance activities within the Borough and all stormwater runoff entering into the Borough's separate storm sewer system from lands within the boundaries of the Borough.

B. Earth disturbance activities and associated stormwater management controls are also regulated under existing state law and implementing regulations. This chapter shall operate in coordination with those parallel requirements; the requirements of this chapter shall be no less restrictive in meeting the purposes of this chapter than state law.

C. The provisions, regulations, limitations, and restrictions of this chapter governing maintenance of SWM Facilities shall apply to all SWM Facilities existing on the date of this chapter or installed after the date of this chapter and shall apply to all persons responsible for maintenance of such SWM Facilities and all persons who own or occupy the land upon which such SWM Facilities are located.

D. The provisions, regulations, limitations and restrictions of this chapter governing grading, erosion and sedimentation control, excavation and other earth disturbance activities shall apply to all persons performing any such activities within the Borough and to all landowners of lots upon which such activities are performed.

E. No person shall use or modify any land or watercourse, and no person shall disturb, move, strip or modify the earth, and no person shall build, install or extend any structure or other impervious surface or semi-impervious surface without full compliance with the terms of this chapter and other applicable regulations.

F. It shall be the responsibility of the developer and, if different, the landowner, to ensure that all contractors, agents or other persons comply with all requirements of the chapter and with any approved SWM Site Plan or stormwater management permit.

§315-06 REPEALS AND CONTINUATION OF PRIOR REGULATIONS

A. Except as otherwise required by law, this Chapter is intended as a continuation of, and not a repeal of, existing regulations governing the subject matter. To the extent that this Chapter restates regulations contained in ordinances previously enacted by Borough Council of Millersville Borough, this Chapter shall be considered a restatement and not a repeal of such regulations. It is the specific intent of Borough Council of Millersville Borough that all provisions of this Chapter shall be considered in full force and effect as of the date such regulations were initially enacted. All ordinances or parts of ordinances inconsistent with the provisions of this Chapter are hereby repealed. It is expressly provided that the provisions of this Chapter shall not affect any act done, contract executed or liability incurred prior to its effective date, or affect any suit or prosecution pending or to be instituted to enforce any rights, rule, regulation or ordinance, or part thereof, or to punish any violation which occurred under any prior storm water regulation or ordinance. In the event any violation has occurred under any prior storm water regulation or ordinance of Millersville Borough, prosecution may be initiated against the alleged offender pursuant to the provisions of said prior storm water regulation or ordinance, and the provisions and penalties provided in said prior stormwater regulation or ordinance shall remain effective as to said violation.

B. Any Plan (hereinafter defined) pending at the time of the effective date of this Chapter shall be allowed to proceed with revisions, finalization and implementation in accordance with any ordinance in effect prior hereto.

§315-07 SEVERABILITY

Should any section, provision or part thereof of this Chapter be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of any of the remaining provisions of this Chapter.

§315-08 COMPATIBILITY WITH OTHER ORDINANCE REQUIREMENTS

Approvals issued pursuant to this Chapter do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or ordinance.

§315-09 ERRONEOUS PERMIT

Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of the Borough purporting to validate such a violation.

§315-10 MUNICIPAL LIABILITY

Except as specifically provided by the Pennsylvania Storm Water Management Act, Act of October 4, 1978, P.L. 864, No. 167, as amended, 32 P.S. §680.1 et seq., the making of any administrative decision by the Borough or any of its officials or employees shall not constitute a representation, guarantee or warranty of any kind by the Borough of the practicability or safety of any proposed structure or use with respect to damage from erosion, sedimentation, storm water runoff, flood, or any other matter, and shall create no liability upon or give rise to any cause of action against the Borough and its officials and employees. Millersville Borough, by enacting and amending this Chapter, does not waive or limit any immunity granted to the Borough and its officials and employees by the Governmental Immunity Act, 42 Pa. C.S. §8541 et seq., and does not assume any liabilities or obligations.

§315-11 DUTY OF PERSONS ENGAGED IN THE DEVELOPMENT OF LAND

Notwithstanding any provision(s) of this Chapter, including exemptions, any landowner or any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety, or other property. Such measures also shall include actions as are required to manage the rate, volume, direction, and quality of resulting stormwater runoff in a manner which otherwise adequately protects health, property, and water quality.

§315-12 RESERVED.

§315-13 RESERVED.

§315-14 RESERVED.

§315-15 RESERVED.

§315-16 RESERVED.

§315-17 RESERVED.

§315-18 RESERVED.

§315-19 RESERVED.

§315-20 RESERVED.

ARTICLE II. DEFINITIONS OF TERMS

§315-21 INTERPRETATION AND WORD USAGE

The language set forth in the text of this Chapter shall be interpreted in accordance with the following rules of construction:

A. Words used or defined in one tense or form shall include other tenses or derivative forms.

B. Words in the singular number shall include the plural number, and words in the plural number shall include the singular number.

C. The masculine gender shall include the feminine and neuter. The feminine gender shall include the masculine and neuter. The neuter gender shall include the masculine and feminine.

D. The word "person" includes individuals, firms, partnerships, joint ventures, trusts, trustees, estates, corporations, associations, and any other similar entities.

E. The word "Lot" includes the words "plot", "Tract", and "Parcel".

F. The words "shall," "must" and "will" are mandatory in nature and establish an obligation or duty to comply with the particular provision. The words "may" and "should" are permissive.

G. The time, within which any act required by this Chapter is to be performed, shall be computed by excluding the first day and including the last day. However, if the last day is a Saturday or Sunday or a holiday declared by the United States Congress or the Pennsylvania General Assembly, it shall also be excluded. The word "day" shall mean a calendar day, unless otherwise indicated.

H. Any words not defined in this Chapter or in Section 107 of the MPC shall be construed as defined in standard dictionary usage.

I. References to officially adopted regulations, standards, or publications of DEP or other governmental agencies shall include the regulation, publication, or standard in effect on the date when a SWM Site Plan is first filed. It is the intent of the Borough Council in enacting this Section to incorporate such changes to statutes, regulations, and publications to the extent authorized by 1 Pa. C.S. § 1937.

§315-22 DEFINITIONS OF TERMS

Accelerated Erosion – The removal of the surface of the land through the combined action of man's activity and the natural processes at a rate greater than would occur because of the natural process alone.

Access Easement – A right granted by a landowner to a grantee, allowing entry for the purpose of inspecting, maintaining and repairing SWM Facilities.

Act 167 Plan – A plan prepared under the authority of The Stormwater Management Act.

Agricultural Activity – Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops and raising livestock including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of Conservation Practices. Construction of new buildings or impervious areas is not considered an agricultural activity.

Alteration – As applied to land, a change in topography as a result of the moving of soil and rock from one location or position to another; also the changing of surface conditions by causing the surface to be more or less impervious; earth disturbance activity.

Animal Heavy Use Areas – A 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. The term does not include entrances, pathways and walkways between areas where animals are housed or kept in concentration.

Applicant – A Landowner and/or Developer, as hereinafter defined, including his heirs, successors and assigns, who has filed an application to the Borough for approval to engage in any regulated activity at a Development Site located within the Borough.

BMP (Best Management Practice) – Activities, facilities, control 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[1]. See also Non-structural BMP and Structural BMP.

BMP Manual – The Pennsylvania Stormwater Best Management Practices Manual of December 2006, or most recent version thereof.

Borough - The Borough of Millersville, Lancaster County, Pennsylvania.

Borough Council – The governing body of the Borough.

Building – Any enclosed or open structure, other than a boundary wall or fence, occupying more than four (4) square feet of area and/or having a roof supported by columns, piers, or walls.

Carbonate Geology – Limestone or dolomite bedrock. Carbonate geology is often associated with karst topography.

Certificate of Completion – Documentation verifying that all permanent SWM Facilities have been constructed according to the plans and specifications and approved revisions thereto.

Chapter 102 – 25 Pa. Code Chapter 102, Erosion and Sediment Control.

Chapter 105 – 25 Pa. Code, Chapter 105, Dam Safety and Waterway Management.

Chapter 106 – 25 Pa. Code, Chapter 106, Floodplain Management.

Cistern – A reservoir or tank for storing rainwater.

Clean Water Act – the 1972 Amendments to the Federal Water Pollution Control Act, P.L. 92-500 of 1972, 33 U.S.C. §1251 et seq.

Conservation District - The Lancaster County Conservation District or any agency successor thereto.

Conservation Plan – A plan written by an NRCS certified planner that identifies Conservation Practices and includes site-specific BMPs for agricultural plowing or tilling activities and Animal Heavy Use Areas.

Conservation Practices – Practices installed on agricultural lands to improve farmland, soil and/or water quality which have been identified in a current Conservation Plan.

Conveyance – (n) Any structure that carries a flow. (v) The ability of a pipe, culvert, swale or similar facility to carry the peak flow from the design storm.

Culvert – A structure with appurtenant works which can convey a stream under or through an embankment or fill.

Dam – An artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semifluid, or a refuse bank, fill or structure for highway, railroad or other purposes which does or may impound water or another fluid or semifluid.

DCNR – the Pennsylvania Department of Conservation and Natural Resources or any agency successor thereto.

DEP also PA DEP or PADEP – The Pennsylvania Department of Environmental Protection or any agency successor to the Pennsylvania Department of Environmental Protection.

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 SWM systems.

Designee – The agent of Millersville Borough involved with the administration, review or enforcement of any provisions by Borough Council action.

Detention Basin – An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a controlled rate.

Developer – A person who undertakes any Regulated Activity of this Chapter.

Development Site (Site) – The specific area of land where regulated activities in the Borough are planned, conducted or maintained.

Disappearing Stream – A stream in an area underlain by limestone or dolomite that flows underground for a portion of its length.

Disturbed Area – A land area where an earth disturbance activity is occurring or has occurred.

Drainage Conveyance Facility - A SWM Facility designed to transmit stormwater runoff, including streams, channels, swales, pipes, conduits, storm sewers, etc.

Drainage Easement – Rights to occupy and use another person's real property for the installation and operation of SWM Facilities, or for the maintenance of natural drainageways to preserve and maintain a channel for the flow of stormwater therein, or to safeguard health, safety, property, and facilities

E&S – Erosion and Sediment.

E&S Plan (also 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.

E & S Manual – The Erosion and Sediment Pollution Control Program Manual, Number 363-2134-008, prepared by DEP.

Earth Disturbance Activity – A construction or other human activity which disturbs the surface of the land, including, but not limited to: 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; building construction; and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials[1].

Environmentally Sensitive Area – slopes greater than 15% percent, shallow bedrock (located within 6 feet of ground surface[2]), wetlands, Natural Heritage Areas and other areas designated as Conservation or Preservation in ***Greenscapes***, the Green Infrastructure Element of the County

Comprehensive Plan, where encroachment by land development or land disturbance results in degradation of the natural resource.

Erosion – The natural process by which the surface of the land is worn away by water, wind, or chemical action. See also, "Accelerated Erosion" as defined above.

Existing Conditions – The dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

FEMA - The Federal Emergency Management Agency and any agency successor thereto.

Flood – A general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers, and other waters of this Commonwealth.

Flood Fringe – That portion of the floodplain outside of the floodway[3].

Floodplain – As defined in Chapter 380, Zoning.

Floodplain Management Act - Act of October 4, 1978, P.L. 851, No. 166, as amended, 32 P.S. Section 679.101 et seq.

Floodway –As defined in Chapter 380, Zoning.

Forest Management/Timber Operations – Planning and activities necessary for the management of forest land. These include conducting a timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

Freeboard – A vertical distance between the elevation of the design high water and the top of a dam, levee, tank, basin or diversion ridge. The vertical distance is required as a safety margin in a pond or basin.

Frequency – The probability or chance that a given storm event/flood will be equaled or exceeded in a given year.

Grade – (n) A slope, usually of a road, channel or natural ground specified in percent and shown on plans as specified herein. (v) To finish the surface of a roadbed, top of embankment or bottom of excavation.

Groundwater Recharge – The process by which water from above the ground surface is added to the saturated zone of an aquifer, either directly or indirectly.

Hydrologic Soil Group (HSG) – Refers to soils grouped according to their runoff-producing characteristics by NRCS. There are four (4) runoff potential groups ranging from A to D.

A. (Low runoff potential) Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep-, well- to excessively-drained sands or gravels. These soils have a high rate of water transmission (greater than 0.30 inches/hour).

B. Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep- to deep-, moderately well- to well-drained soils with moderately fine- to moderately-coarse textures. These soils have a moderate rate of water transmission (from 0.15 to 0.30 inches/hour).

C. Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission (from 0.05 to 0.15 inches/hour).

D. (High runoff potential) Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission (from 0 to 0.05 inches/hour).

Impervious Surface (Impervious Area) – Surfaces which prevent the infiltration of water into the ground. All structures, buildings, parking areas, driveways, roads, streets, sidewalks, decks, and any areas of concrete, asphalt, stone, and compacted soil shall be considered impervious surface if they prevent infiltration.

Impoundment – A retention or detention facility designed to retain stormwater runoff and infiltrate it into the ground (in the case of a retention basin) or release it at a controlled rate (in the case of a detention basin).

Infiltration Structures – A structure designed to direct runoff into the ground (e.g. french drains, seepage pits, seepage trench, rain gardens, vegetated swales, pervious paving, infiltration basins, etc.).

Inlet – A surface connection to a closed drain. The upstream end of any structure through which water may flow.

Intermittent – A natural, transient body or conveyance of water that exists for a relatively long time, but for weeks or months of the year is below the local water table and obtains its flow from both surface runoff and groundwater discharges.

Invasive Vegetation (Invasives) – Plants which grow quickly and aggressively, spreading, and displacing other plants. Invasives typically are introduced into a region far from their native habitat. See Invasive Plants in Pennsylvania by the DCNR.

Karst – A type of topography or landscape characterized by features including but not limited to 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 – Any activity meeting the definition of Land Development in in Chapter 325, Subdivision and Land Development Ordinance.

Land Disturbance – Any activity involving grading, tilling, digging or filling of ground or stripping of vegetation or any other activity that causes an alteration to the natural condition of the land.

Landowner – The legal or beneficial owner or owners of land including: the holder of an option or contract to purchase (whether or not such option or contract is subject to any condition), a lessee if he is authorized under the lease to exercise the rights of the landowner, or other person having a proprietary interest in land.

Limiting Zone – A rock formation, other stratum, or soil condition which is so slowly permeable that it effectively limits downward passage of effluent[12]. Seasonal high water tables, whether perched or regional, also constitute a limiting zone.

Lineament – A linear feature in a landscape which is an expression of an underlying geological structure such as a fault.

Manning's Equation – An equation for calculation of velocity of flow (e.g. feet per second) and flow rate (e.g. cubic feet per second) in open channels based upon channel shape, roughness, depth of flow and slope. Manning's Equation assumes steady, gradually varied flow.

Maximum Extent Practicable (MEP) – Applies when the applicant demonstrates to the Borough's satisfaction that the performance standard is not achievable. The applicant shall take into account the best available technology, cost effectiveness, geographic features, and other competing interests such as protection of human safety and welfare, protection of endangered and threatened resources, and preservation of historic properties in making the assertion that the performance standard cannot be met and that a different means of control is appropriate.[5]

MPC – The Pennsylvania Municipalities Planning Code, Act of 1968, P.L. 805, No. 247, as reenacted and amended, 53 P.S. Section 10101 et seq.

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 – The Borough of Millersville, Lancaster County, Pennsylvania.

NRCS - Natural Resources Conservation Service (previously Soil Conservation Service, or SCS).

National Pollution 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.

Native Vegetation – Plant species that have evolved or are indigenous to a specific geographical area. These plants are adapted to local soil and weather conditions as well as pests and diseases.

Natural Drainageway – An existing channel for water runoff that was formed by natural processes.

Natural Ground Cover – Ground cover which mimics the infiltration characteristics of predominant hydrologic soil group found at the site.

Nonpoint Source Pollution – Any source of water pollution that does not meet the legal definition of "point source" in section 502(14) of the Clean Water Act.

Non-structural BMPs – Planning and design approaches, operational and/or behavior-related practices which minimize stormwater runoff generation resulting from an alteration of the land surface or limit contact of pollutants with stormwater runoff.

Open Channel – A drainage element in which stormwater flows with an open surface. Open channels include, but shall not be limited to, natural and man-made drainage ways, swales, streams, ditches, canals, and pipes flowing partly full. Open channels may include closed conduits so long as the flow is not under pressure.

Outfall – Point where water flows from a conduit, stream, pipe, or drain.

Peak Discharge – The maximum rate of stormwater runoff from a specific storm event.

PennDOT – The Pennsylvania Department of Transportation or any agency successor thereto.

Person – An individual, partnership, public or private association or corporation, or a governmental unit, public utility or any other legal entity whatsoever which is recognized by law as the subject of rights and duties.

Pervious Area – Any material / surface that allows water to pass through at a rate equal to or greater than natural ground cover.

Pipe – A culvert, closed conduit, or similar structure (including appurtenances) that conveys stormwater.

Plans – The SWM and erosion and sediment control plans and narratives.

Planning Commission – The Planning Commission of Millersville Borough, Lancaster County, Pennsylvania.

PMF (Probable Maximum Flood) – The flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in any area. The PMF is derived from the probable maximum precipitation (PMP) as determined on the basis of data obtained from the National Oceanographic and Atmospheric Administration (NOAA).

Process Wastewater – Water that comes in contact with any raw material, product, by-product, or waste during any production or industrial process.

Qualified Person – Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Chapter.

Rate Control – SWM controls used to manage the peak flows for the purposes of channel protection and flood mitigation.

Rational Formula (Rational Method) – A rainfall-runoff relation used to estimate peak flow.

Redevelopment – Any physical improvement to a previously developed lot that involves earthmoving, removal, or addition of impervious surfaces.

Regional Stormwater Management Plan – A plan to manage stormwater runoff from an area larger than a single Development Site. A Regional Stormwater Management Plan could include two adjacent parcels, an entire watershed, or some defined area in between. Regional Stormwater

Management Plans can be prepared for new development, or as a retrofit to manage runoff from already developed areas.

Regulated Activities – Activities, including Earth Disturbance Activities that involve the alteration or development of land in a manner that may affect stormwater runoff. Regulated activities shall include, but not be limited to:

A. Land Development subject to the requirements of the Chapter 325 Subdivision and Land Development Ordinance;

B. Removal of ground cover, grading, filling or excavation;

C. Construction of new or additional impervious or semi-impervious surfaces (driveways, parking lots, etc.), and associated improvements;

D. Construction of new buildings or additions to existing buildings;

E. Installation or alteration of SWM Facilities and appurtenances thereto;

F. Diversion or piping of any watercourse; and,

G. Any other regulated activities where the Borough determines that said activities may affect any existing watercourse's SWM Facilities, or stormwater drainage patterns.

Release Rate – For a specific design storm or list of design storms, the percentage of peak flow rate for existing conditions which may not be exceeded for the proposed conditions.

Release Rate Map – A graphical representation of the release rates for a specific area.

Retention Basin – A SWM Facility that includes a permanent pool for water quality treatment and additional capacity above the permanent pool for temporary runoff storage.

Riser – A vertical pipe extending from the bottom of a pond that is used to control the discharge rate from the pond for a specified design storm.

Riparian – Pertaining to a stream, river or other watercourse. Also, plant communities occurring in association with any spring, lake, river, stream or creek through which waters flow at least periodically.

Riparian Buffer – A BMP that is an area of permanent vegetation along a watercourse.

Riparian Corridor – A narrow strip of land, centered on a stream or river that includes the floodplain as well as related riparian habitats adjacent to the floodplain[6].

Riparian Corridor Easement – An easement created for the purpose of protecting and preserving a Riparian Corridor.

Riparian Forest Buffer – A type of Riparian Buffer that consists of permanent vegetation that is predominantly native trees, shrubs and forbs along a watercourse 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 – Earth disturbance activities within the existing road cross section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches and other similar activities.

Rooftop Detention – Temporary ponding and gradual release of stormwater falling directly onto roof surfaces by incorporating controlled-flow roof drains into building designs.

Runoff – Any part of precipitation that flows over the land surface.

SCS - U.S. Department of Agriculture, Soil Conservation Service (now known as NRCS).

Sediment – Soils or other materials transported by stormwater as a product of erosion[1].

Sediment Basin – A barrier, dam, retention or detention basin located and designed to retain rock, sand, gravel, silt, or other material transported by water.

Sediment Pollution – The placement, discharge or any other introduction of sediment into the waters of the Commonwealth occurring from the failure to design, construct, implement or maintain control measures and control facilities in accordance with the requirements of this Chapter.

Sedimentation – The action or process of forming or depositing sediment in Waters of this Commonwealth[1].

Seepage Pit/Seepage Trench – An area of excavated earth filled with loose stone or similar coarse material, into which surface water is directed for infiltration into the ground.

Semi-impervious / Semi-pervious surface – A surface which prevents some infiltration of water into the ground.

Sheet Flow – Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.

Small Project – Regulated Activities that do not create more than 2,000 square feet of impervious area or involve the removal of ground cover, grading, filling, or excavation of more than 1 acre, and do not require the submission of a subdivision or land development plan.

Small Storm Event – A storm having a frequency of recurrence of once every two (2) years or smaller.

Soil-Cover Complex Method – A method of runoff computation developed by the SCS (now NRCS) that is based on relating soil type and land use/cover to a runoff parameter called Curve Number (CN). For more information, see "Urban Hydrology for Small Watersheds," Second edition, Technical Release No. 55, SCS, June 1986 (or most current edition).

Soil Group, Hydrologic – See "Hydrologic Soil Group".

State Water Quality Requirements – The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code, the Clean Streams Law and the Clean Water Act.

Storage – A volume above or below ground that is available to hold stormwater.

Storm Event – A storm of a specific duration, intensity, and frequency.[7]

Storm Sewer – A system of pipes and/or open channels designed to convey stormwater.

Stormwater – Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

Stormwater Management Act – Act of October 4, 1978, P.L. 864, No. 167, as amended, 32 P.S. Section 680.1 et seq.

Stormwater Management Best Management Practices (SWM BMP) – See **BMPs.**

Stormwater Management Facility (SWM Facility) – Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, infiltrates/evaporates/transpires, cleans or otherwise affects stormwater runoff. Typical SWM Facilities include, but are not limited to, detention and retention basins, open channels, watercourses, road gutters, swales, storm sewers, pipes, BMPs, and infiltration structures.

Stormwater Management Operation and Maintenance Plan (O & M Plan) – A plan, including a narrative, to ensure proper functioning of the SWM Facilities in accordance with Article VI of this Chapter.

Stormwater Management Site Plan (SWM Site Plan) – The Plan prepared by the Developer or his representative indicating how stormwater runoff will be managed at a particular development site according to this Chapter.

Stream – A watercourse.

Structural BMPs – Physical devices and practices that capture and treat stormwater runoff. Structural stormwater BMPs are permanent appurtenances to the Development Site.

Structure – Any man-made object having an ascertainable stationary location on or in land or water, whether or not affixed to the land.[8]

Subdivision – A subdivision as defined in the MPC.

Swale – A low lying stretch of land which gathers or carries surface water runoff.

SWM – Stormwater Management.

SWM Site Plan – A Stormwater Management Site Plan.

Timber Operations – See Forest Management.

Time of Concentration (Tc) – The time for surface runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

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.

Treatment Train – The sequencing of structural Best Management Practices to achieve optimal flow management and pollutant removal from urban stormwater.

USDA – United States Department of Agriculture or any agency successor thereto.

Volume Control – SWM controls, or BMPs, used to remove a predetermined amount of runoff or the increase in volume between the pre- and post-development design storm.

Watercourse – A channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

Watershed – The entire region or area drained by a watercourse.

Waters of this Commonwealth – Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, 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 Pennsylvania.

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, ferns, and similar areas.

Woodland – Land predominantly covered with trees and shrubs. Without limiting the foregoing, Woodlands include all land areas of 10,000 square feet or greater, supporting at least 100 trees per acre, so that either (i) at least 50 trees are two inches or greater in [diameter at breast height] [(DBH)], or (ii) 50 trees are at least 12 feet in height.

§315-23 RESERVED.

§315-24 RESERVED.

§315-25 RESERVED.

§315-26 RESERVED.

§315-27 RESERVED.

§315-28 RESERVED.

§315-29 RESERVED.

§315-30 RESERVED.

ARTICLE III. STORMWATER MANAGEMENT STANDARDS

§315-31 GENERAL REQUIREMENTS

A. Preparation of a SWM Site Plan is required for all regulated activities, unless preparation and submission of the SWM Site Plan is specifically exempted according to §315-51 or the activity qualifies as a Small Project.

B. No regulated activities shall commence until the Borough issues unconditional written approval of a SWM Site Plan.

C. The Borough may, after consultation with DEP, approve measures for meeting the state water quality requirements other than those in this Chapter, provided that they meet the minimum requirements of, and do not conflict with, state law including, but not limited to, the Clean Streams Law. The Borough shall maintain a record of consultations with DEP pursuant to this paragraph. Where an NPDES permit for stormwater discharges associated with construction activities is required, issuance of an NPDES permit shall constitute satisfaction of consultation with DEP.

D. For all regulated activities, erosion and sediment control and stormwater management BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Chapter and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the E&S Manual and the BMP Manual.

E. Developers have the option to propose a Regional Stormwater Management Plan or participate in a Regional Stormwater Management Plan developed by others. A Regional Stormwater Management Plan may include offsite volume and rate control, as appropriate and supported by a detailed design approved by the Borough in accordance with §315-31. A Regional Stormwater Management Plan must meet all of the volume and rate control standards required by this Chapter for the area defined by the Regional Stormwater Management Plan, but not necessarily for each individual Development Site. Appropriate agreements must be established to ensure the requirements of this Chapter and the requirements of the Regional Stormwater Management Plan are met.

F. Impervious areas:

(1) The measurement of impervious area shall include all of the impervious areas in the total proposed development even if development is to take place in stages or phases.

(2) For development taking place in stages or phases, the entire development plan must be used in determining conformance with this Chapter.

(3) Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious.

G. All regulated activities shall include such measures as necessary to:

(1) Protect health, safety, and property;

(2) Meet the water quality goals of this Chapter by implementing measures to:

(a) Protect and/or improve the function of floodplains, wetlands, and wooded areas.

(b) Protect and/or improve native plant communities including those within the riparian corridor.

(c) Protect and/or improve natural drainageways from erosion.

(d) Minimize thermal impacts to waters of this Commonwealth.

(e) Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.

(3) To the maximum extent practicable, the techniques for Low Impact Development (LID) Practices described in the BMP Manual shall be incorporated. The proposed LID Practices shall be noted on the Storm Water Management Site Plan.

H. The design of all SWM Facilities over karst shall include an evaluation of measures to minimize adverse effects.

I. Infiltration BMPs shall 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 Chapter. Infiltration BMPs shall include pretreatment BMPs unless shown to be unnecessary.

J. Infiltration BMPs intended to receive runoff from developed areas shall be selected based on suitability of soils and Development Site conditions and shall be constructed on soils that have the following characteristics:

(1) A minimum depth of 24 inches between the bottom of the facility and the limiting zone, unless it is demonstrated to the satisfaction of the Borough that the selected BMP has design criteria which allow for a smaller separation.

(2) A stabilized infiltration rate sufficient to accept the additional stormwater load and drain completely as determined by field tests conducted by the Applicant's professional designer.

(a) The stabilized infiltration rate is to be determined in the same location and within the same soil horizon as the bottom of the infiltration facility.

(b) The stabilized infiltration rate is to be determined as specified in the BMP Manual.

K. The calculation methodology to be used in the analysis of volume and peak rates of discharge shall be as required in §315-35 (Calculation Methodology).

L. A planting plan is required for all vegetated stormwater BMPs.

(1) Native or Naturalized/Non-invasive Vegetation suitable to the soil and hydrologic conditions of the Development Site shall be used unless otherwise specified in the BMP Manual.

(2) Invasive Vegetation may not be included in any planting schedule.

(3) The limit of existing, native vegetation to remain shall be delineated on the plan along with proposed construction protection measures.

(4) All planting shall be performed in conformance with good nursery and landscape practice. Plant materials shall conform to the standards recommended by the American Association of Nurseryman, Inc. in the American Standard of Nursery Stock.

M. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity. Staging of earthmoving activities and selection of construction equipment should consider this protection.

N. Infiltration BMPs shall not be constructed nor receive runoff from disturbed areas until the entire contributory drainage area to the infiltration BMP has achieved final stabilization.

O. Stormwater Easements.

(1) A minimum ten (10) foot wide access easement shall be provided for all stormwater serving multiple properties and not located within a public right-of-way. Easements shall provide for ingress and egress to a public right-of-way.

(2) Drainage easements shall be provided where the conveyance, treatment, or storage of stormwater, either existing or proposed, is identified on the SWM Site Plan. Drainage easements shall be provided to contain and convey the 100-year frequency flood.

(3) SWM Facilities not located within a public right of way shall be contained in and centered within a minimum 20 foot wide stormwater management easement. All easements shall have adequate information to be located in the field.

(4) Stormwater management easements are required for all on-site areas used to convey stormwater of 2cfs or greater for a 100 year storm. Roof drains do not require stormwater management easements.

(5) Unless a concentrated discharge of stormwater to an adjacent property is within an existing watercourse, an easement burdening the adjacent property shall be required.

(6) Where a Development Site is traversed by watercourses other than permanent streams, a drainage easement shall be provided conforming substantially 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 affect adversely the flow of stormwater within any portion of the easement.

(7) Nothing shall be placed, planted, set, or put within the area of an easement that would adversely affect the function of the easement or conflict with the easement agreement.

P. The Borough may require additional stormwater control measures for stormwater discharges to special management areas including but not limited to:

(1) Water bodies listed as "impaired" on Pennsylvania's Clean Water Act 303(d/305(b) Integrated List.

(2) Any water body or watershed with an approved Total Maximum Daily Load (TMDL).

(3) Critical areas with sensitive resources (e.g., state-designated special protection waters, cold water fisheries, carbonate or other groundwater recharge areas highly vulnerable to contamination, drainage areas to water supply reservoirs, source water protection zones, etc.)

Q. Non-Roof drains and sump pumps shall be tributary to infiltration or vegetative BMPs. Use of catchment facilities for the purpose of reuse is also permitted.

R. Unless specifically approved by the Borough in light of circumstances unique to the site, roof drains shall not be connected to streets, sanitary or storm sewers or to roadside ditches and instead shall discharge to infiltration areas or vegetative BMPs.

§315-32 VOLUME CONTROLS

Volume control BMPs are intended to maintain existing hydrologic conditions for small storm events by promoting groundwater recharge and/or evapotranspiration as described in this section. Runoff volume controls shall be implemented using the *Design Storm Method* described in §315-32Abelow, or through continuous modeling approaches or other means as described in the BMP Manual. Small Projects may use the method described in §315-32B to design volume control BMPs.

A. The *Design Storm Method* 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 storm event.

(2) For modeling purposes:

(a) Existing (pre-development) non-forested pervious areas must be considered meadow in good condition.

(b) When the existing Development site contains impervious area, twenty percent (20%) of existing impervious area to be disturbed shall be considered meadow in good condition in the model for existing conditions.

(c) The maximum loading ratio for volume control facilities in Karst areas shall be 3:1 impervious drainage area to infiltration area and 5:1 total drainage area to infiltration area. The maximum loading ratio for volume control facilities in non-Karst areas shall be 5:1 impervious drainage area to infiltration area and 8:1 total drainage area to infiltration area. A higher ratio may be approved by the Borough if justification is provided. Hydraulic depth may be used as an alternative to an area-based loading ratio if the design hydraulic depth is shown to be less than the depth that could result from the maximum area loading ratio.

B. Volume Control for Small Projects.

(1) At least the first one inch (1") of runoff from new impervious surfaces or an equivalent volume 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.

C. A detailed geologic evaluation of the Development Site shall be performed in areas of carbonate geology to determine the design parameters of recharge facilities. A report shall be prepared in accordance with §315-45A of this Chapter.

(1) If the developer can prove through analysis that the development site is in an area underlain by carbonate geology, and such geologic conditions may result in sinkhole formations, then the development site is exempt from volume control requirements as described in this chapter. However, the development site shall still be subject to NPDES and E&S requirements.

D. Storage facilities, including normally dry, open top facilities, shall completely drain the volume control storage over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm. Any designed infiltration at such facilities is exempt from the minimum 24 hour standard, i.e. may infiltrate in a shorter period of time, provided that none of this water will be discharged into Waters of this Commonwealth.

E. Any portion of the volume control storage that meets the following criteria may also be used as rate control storage:

(1) Volume control storage that depends on infiltration is designed according to the infiltration standards in §315-31.

(2) The volume control storage which will be used for rate control is that storage which is available within 24 hours from the end of the design storm based on the stabilized infiltration rate and/or the evapotranspiration rate.

F. Applicable worksheets from of the BMP Manual shall be used when establishing Volume Controls.

§315-33 RATE CONTROLS

Rate control for large storms, up to the 100-year event, is essential to protect against immediate downstream erosion and flooding.

A. Match Pre-development Hydrograph.

(1) Applicants shall provide infiltration facilities or utilize other techniques which will allow the post-development 100 year hydrograph to match the pre-development 100 year hydrograph, along all parts of the hydrograph, for the Development Site. To match the pre-development hydrograph, the post-development peak rate must be less than or equal to the pre-development peak

rate, and the post-development runoff volume must be less than or equal to the pre-development volume for the same storm event. A shift in hydrograph peak time of up to five minutes and a rate variation of up to 5% at a given time may be allowable to account for the timing effect of BMPs used to manage the peak rate and runoff volume. "Volume Control" volumes as given in §315-32 above may be used as part of this option.

B. Where the pre-development hydrograph cannot be matched, one of the following shall apply:

(1) Within the Little Conestoga Creek watershed, post-development rates of runoff from any regulated activity shall not exceed 50% of the peak rates of runoff prior to the development for all design storms (two-, five-, ten-, twenty-five-, fifty-, and one-hundred-year 24-hour storms*). See the Release Rate Map in Appendix L for additional information.

(2) Within all remaining watersheds of Millersville Borough, the calculated post-development peak rate of storm water runoff from any regulated activity shall not exceed the calculated pre-development peak rate of runoff for all design storms (two-, five-, ten-, twenty-five-, fifty-, and one-hundred-year 24-hour storms*). See the Release Rate Map in Appendix L for additional information.

* A 24 hour SCS type II storm or an IDF Curve Rational Method storm. See Table 2 in §315-35or (NOAA) Atlas 14 data for the specific project site.

C. All basins not including groundwater recharge and/or water quality storage shall include an outlet structure to allow for draining the basin to a completely dry position within 24 hours following the end of the design rainfall. All basins that include groundwater recharge and/or water quality storage shall include an outlet structure to allow draining the basin to the level of the groundwater recharge and/or water quality storage within 24 hours following the end of the design rainfall.

D. A variety of BMPs should be employed and tailored to suit the Development Site. The following is a partial listing of BMPs which can be utilized in SWM systems for rate control where appropriate:

(1) Decreased impervious surface coverage.

(2) Routed flow over grass.

(3) Grassed channels and vegetated strips.

(4) Bio-retention areas (rain gardens).

(5) Concrete lattice block or permeable surfaces.

(6) Seepage pits, seepage trenches or other infiltration structures.

(7) Rooftop detention.

(8) Parking lot detention.

(9) Cisterns and underground reservoirs.

(10) Amended soils.

(11) Retention basins.

(12) Detention basins.

(13) Other methods as may be found in the BMP Manual.

E. Small Projects are not required to provide for Rate Control.

§315-34 STORMWATER MANAGEMENT PERFORMANCE STANDARDS

A. Runoff from impervious areas shall be drained to pervious areas within the Development Site to the maximum extent practicable.

B. Stormwater runoff from a Development Site to an adjacent property shall flow directly into a natural drainageway, watercourse, or into an existing storm sewer system, or onto adjacent properties in a manner similar to the runoff characteristics of the pre-development flow.

C. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without written notification of the adjacent property owner(s) by the developer. Such stormwater flows shall be subject to the requirements of

this Chapter, including the establishment of a drainage easement. Copies of all such notifications shall be included in SWM Site Plan submissions.

D. Existing on-site natural and man-made SWM Facilities shall be used to the maximum extent practicable.

E. Stormwater runoff shall not be transferred from one sub-watershed to another unless they are sub-watersheds of a common watershed that join together within the perimeter of the Development Site and the effect of the transfer does not alter the peak discharge onto adjacent lands.

F. Minimum floor elevations for all structures that would be affected by a basin, other temporary impoundments, or open conveyance systems where ponding may occur shall be two (2) feet above the 100-year water surface elevation. If basement or underground facilities are proposed, detailed calculations addressing the effects of stormwater ponding on the structure and water-proofing and/or flood-proofing design information shall be submitted for approval.

G. All stormwater conveyance facilities (excluding detention, retention, and wetland basin outfall structures) shall be designed to convey a 25-year storm event*. All stormwater conveyance facilities (excluding detention, retention, and wetland basin outfall structures) conveying water originating from offsite shall be designed to convey a 50-year storm event*. Safe conveyance of the 100-year runoff event* to appropriate peak rate control BMPs and throughout the Development Site must be demonstrated in the design.

* A 24 hour SCS Type II storm or an IDF Curve Rational Method storm.

H. Erosion protection shall be provided along all open channels, and at all points of discharge. Flow velocities from any storm sewer may not result in erosion of the receiving channel.

§315-35 CALCULATION METHODOLOGY

A. Any stormwater runoff calculations involving drainage areas greater than 200 acres and time of concentration (Tc) greater than 60 minutes, including on- and off-site areas, shall use generally accepted calculation techniques based on the NRCS soil-cover complex method with the rainfall depths provided in Table 2, or other method acceptable to the Borough Engineer.

B. Stormwater runoff from all Development Sites shall be calculated using either the modified rational method, a soil-cover-complex methodology, or other method acceptable to the Borough. Table 1 summarizes acceptable computation methods. It is assumed that all methods will be selected by the design professional based on the individual limitations and suitability of each method for a particular Development Site.

Table 1

ACCEPTABLE COMPUTATION METHODOLOGIES FOR STORMWATER MANAGEMENT PLANS		
METHOD	METHOD DEVELOPED BY	APPLICABILITY
TR-20 (or commercial computer package based on TR-20)	USDA NRCS	Applicable where use of full hydrology computer model is desirable or necessary.
WinTR-55 (or commercial computer package based on TR-55)	USDA NRCS	Applicable for land development plans within limitations described in TR-55.
HEC-1 / HEC-HMS	US Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.
Rational Method (or commercial computer package based on Rational Method)	Emil Kuichling (1889)	For development sites less than 200 acres, Tc<60 min. or as approved by the Borough.
EFH2	USDA NRCS	Applicable in rural and undeveloped areas subject to the Program Limits.
Other Methods	Varies	Other methodologies approved by the Borough.

C. If the SCS method is used, Antecedent Moisture Condition 1 is to be used in areas of carbonate geology, and Antecedent Moisture Condition 2 is to be used in all other areas. A type II distribution shall be used in all areas.

Table 2

Storm Event (years)	Rainfall (inches)
2	3.1
5	4.1
10	5.0
25	5.5
50	6.2
100	7.0

D. If the Rational Method is used, the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 data (see §315-44B) or PennDOT Publication 584, "PennDOT Drainage Manual," 2010 Edition, or latest, or the PDT-IDF chart included in

E. APPENDIX B shall be used to determine the rainfall intensity in inches per hour based on the information for the 5 through 60 minute duration storm events.

F. Hydrographs may be obtained from NRCS methods such as TR-55, TR20, or from use of the "modified" or "unit hydrograph" rational methods. If "modified" or "unit hydrograph" rational methods are used, the ascending leg of the hydrograph shall have a length equal to three times the time of concentration (3xTc) and the descending leg shall have a length equal to 7 times the time of concentration (7xTc) to approximate an SCS Type II hydrograph.[11]

G. Runoff calculations shall include a hydrologic and hydraulic analysis indicating volume and velocities of flow and the grades, sizes, and capacities of water carrying structures, sediment basins, retention and detention structures and sufficient design information to construct such facilities. Runoff calculations shall also indicate both pre-development and post-development rates for peak discharge of stormwater runoff from all discharge points.

H. For the purpose of calculating pre-development peak discharges, all runoff coefficients, both on-site and off-site, shall be based on actual land use assuming summer or good land conditions. Post-development runoff coefficients for off-site discharges used to design conveyance facilities shall be based on actual land use assuming winter or poor land conditions.

I. Criteria and assumptions to be used in the determination of stormwater runoff and design of management facilities are as follows:

(1) Runoff coefficients shall be based on the information contained in APPENDIX C and APPENDIX D if the actual land use is listed in those Appendices. If the actual land use is not listed in these Appendices, runoff coefficients shall be chosen from other published documentation, and a copy of said documentation shall be submitted with the SWM Site Plan.

(2) A sample worksheet for calculating Tc is provided in APPENDIX H. Times of concentration (Tc) shall be based on the following design parameters:

(a) Sheet flow: The maximum length for each reach of sheet or overland flow before shallow concentrated or open channel flow develops is one hundred fifty (150) feet. Flow lengths greater than one hundred (100) feet shall be justified based on the actual conditions at each Development Site. Sheet flow may be determined using the nomograph in APPENDIX F, or the Manning's kinematic solution shown in the Sheet Flow section of Worksheet No. 1 in APPENDIX H.

(b) Shallow concentrated flow: Travel time for shallow concentrated flow shall be determined using Figure 3-1 from TR-55, Urban Hydrology for small watersheds, as shown in APPENDIX G.

(c) Open Channel flows: At points where sheet and shallow concentrated flows concentrate in field depressions, swales, gutters, curbs, or pipe collection systems, the travel times to downstream end of the Development Site between these design points shall be based upon Manning's Equation and/or acceptable engineering design standards as determined by the Borough Engineer.

(3) The developer may use stormwater credits for Non-Structural BMPs in accordance with the BMP Manual. The allowable reduction will be determined by the Borough Engineer.

(4) Peak rate control is not required for off-site runoff. Off-site runoff may be by-passed around the site provided all other discharge requirements are met. If offsite runoff is routed through rate control facilities, runoff coefficients for off-site discharges used to design those rate control facilities shall be based on actual land use assuming winter or poor land conditions.

J. Times of Concentration shall be calculated based on the methodology recommended in the respective model used. Times of Concentration for channel and pipe flow shall be computed using Manning's equation. Supporting documentation and calculations must be submitted for review and approval

§315-36 RIPARIAN CORRIDORS

A. In order to protect and improve water quality, a Riparian Corridor Easement is encouraged to be created and recorded as part of any subdivision or Land Development that encompasses a Riparian Corridor.

B. Except as otherwise required by Chapter 102, the Riparian Corridor Easement shall be measured to be 35 feet from the top of streambank (on each side).

C. Minimum Management Requirements for Riparian Corridors.

(1) Existing native vegetation shall be protected and maintained within the Riparian Corridor Easement.

(2) Whenever practicable, invasive vegetation shall be actively removed and the Riparian Corridor Easement shall be planted with native trees, shrubs and other vegetation to create a diverse native plant community appropriate to the intended ecological context of the site.

(3) Any un-vegetated areas within the corridor shall be established with permanent vegetation.

D. The Riparian Corridor Easement shall be enforceable by the Borough and shall be recorded in the Lancaster County Recorder of Deeds Office, so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for continued private ownership and shall not be deemed a public right-of-way nor imply public rights of access.

E. Any permitted use within the Riparian Corridor Easement shall be conducted in a manner that will improve or maintain the stream stability, and preserve and protect the ecological function of the floodplain.

F. The following conditions shall apply when public and/or private recreation trails are permitted within Riparian Corridors:

(1) Trails shall be designed to have the least impact on native plant species and other sensitive environmental features.

§315-37 ABOVE-GROUND STORAGE FACILITY DESIGN CRITERIA

Above-ground storage facilities consist of all stormwater facilities which store, infiltrate/evaporate/transpire, clean or otherwise affect stormwater runoff, and the top of which is exposed to the natural environment. Above-ground storage facilities are located above the finished ground elevation. Above-ground storage facilities do not include SWM Facilities designed for conveyance or cisterns.

A. All basins shall be structurally sound and shall be constructed of sound and durable materials. The completed structure and the foundation of all basins shall be stable under all probable conditions of operation.

B. Design criteria. Above-ground storage facilities shall comply with the design criteria in the following table:

Above-ground Storage Facility Design Criteria			
	Facility Depth		
	Less than 2 feet	2 feet to 6 feet	Greater than 6 feet
(a) Embankment Geometry			
[1] Top width (minimum)	2 feet	5 feet	8 feet
[2] Interior side slope (maximum)	2 : 1	5 : 1	5 : 1
[3] Exterior side slope (maximum)	2 : 1	3 : 1	3 : 1
(b) Embankment construction			
[1] Key trench	Not required	Required	Required
[2] Pipe collar	Not required	Required	Required
[3] Compaction density	Not required	Required	Required
(c) Internal Construction			
[1] Dewatering feature	N/A	Required	Required
[2] Pretreatment elements	Not required*	Required	Required
(d) Outlet Structure			
[1] Pipe size (minimum)	6 inches	12 inches	15 inches
[2] Pipe material	SLHDPE, PVC, RCP	RCP	RCP
[3] Anticlogging devices	Required	Required	Required

Above-ground Storage Facility Design Criteria			
	Facility Depth		
	Less than 2 feet	2 feet to 6 feet	Greater than 6 feet
[4] Antivortex design	Not required	Required	Required
[5] Watertight joints in piping?	No	Yes	Yes
(e) Spillway Requirements			
[1] Spillway freeboard (minimum)	Not required	6 inches	12 inches
[2] Width (minimum)	Not required	10 feet	20 feet
[3] Width (maximum)	Not required	50 feet	50 feet
[4] Spillway channel design	Not required	Required	Required
[5] Routing of 100 year storm	Permitted	Permitted	Permitted

*Pretreatment required for infiltration BMPs unless shown to be unnecessary.

N/A = Not applicable

SLHDPE = Smooth lined high density polyethylene pipe; PVC = Polyvinyl chloride;

RCP = Reinforced concrete pipe

C. Facility depth.

(1) For the purposes of the design criteria, the facility depth is defined to be the depth between the bottom invert of the lowest orifice and the invert of the spillway. If there is no spillway, the top of the berm shall be used. For basins with no orifices or outlet structure at the bottom of the basin, the bottom elevation of the basin shall be used.

(2) Facilities with a facility depth greater than six (6) feet shall not be permitted in residential areas.

(3) Facilities with a facility depth greater than 15 feet require a dam permit from DEP.

(4) The maximum depth of water for above ground storage facilities without restricted access shall not exceed six (6) feet unless approved by modification or

waiver by The Borough Council or its Designee. Access to basins with a maximum depth of water greater than six (6) feet shall be restricted by fencing that will discourage access.

D. Embankment construction.

(1) Impervious core/key trench. An impervious core/key trench, when required, shall consist of a cutoff trench (below existing grade) and a core trench (above existing grade). A key trench may not be required wherever it can be shown that another design feature, such as the use of an impermeable liner, accomplishes the same purpose.

(a) Materials used for the core shall conform to the Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the No. 200 sieve.

(b) The dimensions of the core shall provide a minimum trench depth of two (2) feet below existing grade, minimum width of four (4) feet and side slope of 1H:1V or flatter.

(c) The core should extend up both abutments to the 10-year water surface elevation or six (6) inches below the emergency spillway elevation, whichever is lower.

(d) The core shall extend four (4) feet below any pipe penetrations through the impervious core. The core shall be installed along or parallel to the centerline of the embankment.

(e) The area under the embankment shall be cleared, grubbed and stripped of topsoil to a depth of two (2) feet prior to any placement and compaction of earth fill.

(2) Compaction.

(a) Compaction requirements shall be the same as those for the embankment to assure maximum density and minimum permeability.

(b) The core shall be constructed concurrently with the outer shell of the embankment. Core and key trench shall be constructed to a minimum of 95 % Standard Proctor Density.

(c) The trench shall be dewatered during backfilling and compaction operations.

(3) Pipe collars. All pipe collars, when required, shall be designed in accordance with Chapter 7 of the E&S Manual. The material shall consist of concrete or otherwise non-degradable material around the outfall barrel and shall be watertight.

(4) Embankment fill material. The embankment fill material shall be taken from an appropriate borrow area which shall be free of roots, stumps, wood, rubbish, stones greater than 6 inches, frozen or other objectionable materials.

(5) Embankment compaction. When required, embankments shall be compacted by sheepsfoot or pad roller. The loose lift thickness shall be nine (9) inches or less, depending on roller size, and the maximum particle size is six (6) inches or less (two-thirds of the lift thickness). Five passes of the compaction equipment over the entire surface of each lift is required. Embankment compaction to visible non-movement is also required.

E. Internal construction.

(1) Bottom slope. The minimum bottom slope of facilities not designed for infiltration shall be one percent (1%). A flatter slope may be used if an equivalent dewatering mechanism is provided.

(2) Dewatering features. When required, dewatering shall be provided through the use of underdrain, surface device, or alternate approved by the Borough Engineer. If the facility is to be used for infiltration, the dewatering device should be capable of being disconnected and only be made operational if the basin is not dewatering within the required timeframe.

(3) Pretreatment elements. When required, pretreatment elements shall consist of forebays, or alternate approved by the Borough Engineer, to keep silt to a smaller portion of the facility for ease of maintenance.

(4) Infiltration basins. Within basins designed for infiltration, existing native vegetation shall be preserved, if possible. For existing unvegetated areas or for infiltration basins that require excavation, a planting plan shall be prepared in accordance with §315-31L and the BMP Manual which is designed to promote infiltration.

F. Outlet configuration.

(1) For facilities with a depth of two (2) feet or greater, a type D-W endwall or riser box outlet structure shall be provided.

(2) For facilities with a depth less than two (2) feet, the designer must specify a suitable outlet structure.

(3) All discharge control devices with appurtenances shall be made of reinforced concrete and stainless steel. Bolts/fasteners shall be stainless steel.

G. Spillway.

(1) Material. The spillway shall be designed to provide a non-erosive, stable condition when the project is completed.

(2) Non-emergency use. Use of the spillway to convey flows greater than the 50-year design storm is permitted.

(3) Emergency use. The spillway shall be designed to convey the 100-year peak rate of runoff which enters the basin after development in a manner which will not damage the integrity of the facility and will not create a downstream hazard.

(4) When required, freeboard shall be measured from the top of the water surface elevation for emergency use.

H. Breach analysis. The Borough may require a breach analysis based on site-specific conditions and concern of threat for downstream property. When required, the breach analysis shall be conducted in accordance with the NRCS methodology, the US Army Corps of Engineers methodology (HEC-1) or other methodologies as approved by the Borough.

I. SWM Facilities which qualify as a dam under DEP regulations or facilities deemed a potential threat to the life, safety or welfare of the general public shall be subject to the following requirements:

(1) Facilities which qualify as a dam under DEP regulation shall obtain the required permit through DEP and design the facility in accordance with DEP standards.

(2) Additional requirements and analysis may be required by the Borough to prove that the proposed facility has been designed to limit the potential risk to the life, safety or welfare of the general public.

§315-38 SUBSURFACE STORAGE FACILITY DESIGN CRITERIA

Subsurface storage facilities consist of all stormwater facilities which store, infiltrate/evaporate/transpire, clean or otherwise affect stormwater runoff and the top of which is not exposed to the natural environment. Subsurface facilities are located below the finished ground elevation. Subsurface facilities do not include SWM Facilities designed for conveyance.

A. Subsurface storage facilities shall comply with the design criteria in the following table:

Subsurface storage facility design criteria		
	Facility Type	
	Infiltration and Storage	**Storage without Infiltration**
(a) Facility Geometry		
[1] Depth from surface (maximum)	2 feet less than limiting zone	N/A
[2] Loading ratio (maximum)	Per BMP Manual*	N/A
(b) Distribution System Requirements		
[1] Pipe size (minimum)	4 inches	4 inches
[2] Pretreatment	Required	Required
[3] Loading/balancing	Required	Not required
[4] Observation/access ports	Required	Required

*Unless otherwise determined by professional geologic evaluation.

B. Distribution system requirements.

(1) Pretreatment requirements. The facility shall be designed to provide a method to eliminate solids, sediment, and other debris from entering the subsurface facility.

(2) Loading/balancing. The facility shall be designed to provide a means of evenly balancing the flow across the surface of the facility to be used for infiltration.

(3) Observation/access ports.

(a) For facilities with the bottom less than five (5) feet below the average grade of the ground surface, a clean-out shall be an acceptable observation port.

(b) For facilities with the bottom five (5) feet or more below the average grade of the ground surface, a manhole or other means acceptable to the Borough shall be provided for access to and monitoring of the facility.

(c) The number of access points shall be sufficient to flush or otherwise clean out the system.

C. Materials.

(1) Pipe material. Distribution system piping may be PVC, SLHDPE, or RCP.

(2) Stone for infiltration beds. The stone used for infiltration beds shall be clean washed, uniformly graded coarse aggregate. The void ratio for design shall be assumed to be 40 percent.

(3) Backfill material. Material consistency and placement depths for backfill shall be (at a minimum) per all applicable pipe manufacturer's recommendations, further providing it should be free of large (not exceeding 6 inches in any dimension) objectionable or detritus material. Select non-aggregate material should be indigenous to the surrounding soil material for non-vehicular areas. Backfill within vehicular areas shall comply with this section unless otherwise specified in the Borough Street or Subdivision and Land Development Ordinance or by the Borough Engineer. Furthermore, if the design concept includes the migration of runoff through the backfill to reach the infiltration facility, the material shall be well drained, free of excess clay or clay-like materials and generally uniform in gradation.

(4) Lining material. Non-woven geotextiles shall be placed on the sides and top of subsurface infiltration facilities. No geotextiles shall be placed on the bottom of subsurface infiltration facilities.

D. Cover.

(1) When located under pavement, the top of the subsurface facility shall be a minimum of three (3) inches below the bottom of pavement subbase.

(2) Where located under vegetative cover, the top of the subsurface facility shall be a minimum of 12 inches below the surface elevation or as required to establish vegetation.

E. Subsurface facilities shall be designed to safely convey and/or bypass flows from storms exceeding the design storm.

F. Infiltration facilities shall be designed with measures to protect infiltration facilities from compaction and sedimentation during and after construction.

§315-39 CONVEYANCE FACILITY DESIGN CRITERIA

Conveyance facilities consist of all stormwater facilities which carry flow, which may be located either above or below the finished grade. Conveyance facilities do not include SWM Facilities which store, infiltrate/evaporate/transpire, or clean stormwater runoff.

A. Design criteria. Conveyance facilities shall comply with the design criteria in the following table:

Conveyance facility design criteria			
Location	Within public street right-of-way	Outside public street right-of-way	
Loading	All	Vehicular loading	Non-vehicular loading
(a) Pipe design			
[1] Material	RCP	PVC, SLHDPE, RCP	PVC, SLHDPE, RCP
[2] Slope (minimum)	0.5%	0.5%	0.5%
[3] Cover	1 foot to stone subgrade	1 foot to stone subgrade	1 foot to surface
[4] Diameter (minimum)	15 inches	12 inches	8 inches
[5] Street crossing angle	75° to 90°	N/A	N/A
[6] Access/maintenance port frequency (maximum)	400 feet	400 feet	600 feet
(b) Inlet design			
[1] Material	Concrete	Concrete	N/A
[2] Grate depression	¼- inch or less	2 inches	1 inch minimum
(c) Manhole design			
[1] Material	Concrete	Concrete	Concrete

Conveyance facility design criteria			
Location	Within public street right-of-way	Outside public street right-of-way	
Loading	All	Vehicular loading	Non-vehicular loading
(d) Swale design			
[1] Freeboard (minimum)	6 inches	N/A	6 inches
[2] Velocity (maximum)	Stability check	N/A	Stability check
[3] Slope (minimum)	1%	N/A	1%
[4] Side slopes (residential area)	4 : 1 max	N/A	4 : 1 max
[5] Side slopes (non-residential area)	4 : 1 max	N/A	3 : 1 max
[6] Bottom width to flow depth ratio	12 : 1	N/A	12 : 1
(e) Outlet design			
[1] End treatment	Headwall/endwall	N/A	Headwall/ endwall or flared end section
[2] Energy dissipater	Required	N/A	Required

N/A = Not applicable or no criteria specified

SLHDPE = Smooth lined high density polyethylene pipe; PVC = Polyvinyl chloride;

RCP = Reinforced concrete pipe

B. Conveyance pipes, culverts, manholes, inlets and endwalls within the public street right-of-way or proposed for dedication shall conform to the requirements of PennDOT Standards for Roadway Construction, Publication No. 72M as directed by the Borough Engineer.

C. Conveyance pipes, culverts, manholes, inlets and endwalls outside the public street right-of-way which are subject to vehicular loading shall be designed for the HS-25 loading condition.

D. All material and workmanship for conveyance facilities shall conform to current PennDOT Publication 408 specifications.

E. Conveyance pipes.

(1) Backfill requirements. Backfill material. Material consistency and placement depths for backfill shall be (at a minimum) per all applicable pipe manufacturer's recommendations, further providing it should be free of large (not exceeding 6 inches in any dimension) objectionable or detritus material. Select non-aggregate material should be indigenous to the surrounding soil material for non-vehicular areas. Backfill within vehicular areas shall comply with this section unless otherwise specified in the Borough Street or Subdivision and Land Development Ordinance or by the Borough Engineer.

(2) Inlets or manholes shall be placed at all points of changes in the horizontal or vertical directions of conveyance pipes. Curved pipe sections are prohibited.

(3) Access/maintenance ports. An access/maintenance port is required and may either be an inlet or manhole.

(4) Watertight joints shall be provided where pipe sections are joined, except for perforated pipe installed as pavement base drain.

(5) The street crossing angle shall be measured between the pipe centerline and the street centerline.

(6) Elliptical pipe of an equivalent cross-sectional area may be substituted in lieu of circular pipe where cover or utility conflict conditions exist.

(7) The roughness coefficient (Manning "n" values) used for conveyance pipe capacity calculations should be determined in accordance with Appendix E, or per the manufacturer's specifications.

F. Inlets.

(1) All pipes must enter inlets completely through one of the sides. No corner entry of pipes is permitted.

(2) Within the public street right-of-way, the gutter spread based on the 25-year storm shall be no greater than one half of the travel lane and have a maximum depth of three (3) inches at the curb line. A parking lane shall not be considered as part of the travel lane. In the absence of pavement markings separating a travel lane from

the parking lane, the parking lane shall be assumed to be seven (7) feet wide if parking is permitted on the street.

(3) Flow depth within intersections. Within intersections of streets, the maximum depth of flow shall be one and one-half (1.5) inches based on the 25-year storm.

(4) Curbed streets.

(a) Inlets in streets shall be located along the curb line.

(b) Top units shall be PennDOT Type "C". The hood shall be aligned with the adjacent curb height.

(5) All inlets placed in paved areas shall have heavy duty bicycle-safe grating consistent with PennDOT Publication 72M, latest edition. A note to this effect shall be added to the SWM Site Plan or inlet details therein.

(6) Inlets, junction boxes, or manholes greater than five (5) feet in depth shall be equipped with ladder rungs and shall be detailed on the SWM Site Plan.

G. Swales.

(1) A swale shall be considered as any man-made ditch designed to convey stormwater directly to another stormwater management facility or surface waters.

(2) Inlets within swales shall have PennDOT Type "M" top units or equivalent approved by the Borough Engineer.

(3) Swale capacities and velocities shall be computed using the Manning equation using the following design parameters:

(a) The first condition shall consider swale stability based upon a low degree of retardance ("n" = 0.03);

(b) The second condition shall consider swale capacity based upon a higher degree of retardance ("n" = 0.05); and

(c) All vegetated swales shall have a minimum slope of 1% unless otherwise approved by the Borough Engineer.

(d) The "n" factors to be used for paved or riprap swales or gutters shall be based upon accepted engineering design practices, as approved by the Borough Engineer.

(4) All swales shall be designed to maximize infiltration and concentrate low flows to minimize siltation and meandering, unless geotechnical conditions do not permit infiltration.

H. Culverts. In addition to the material requirements in this section, culverts designed to convey Waters of this Commonwealth may be constructed with either a corrugated metal arch or a precast concrete culvert.

I. Level spreaders.

(1) Shall discharge at existing grade onto undisturbed vegetation.

(2) Discharge at a depth not exceeding 3.0 inches for a 50-year, 24-hour design storm.

J. Energy dissipaters. Energy dissipaters shall be designed in accordance with the requirements in the E&S Manual.

K. End treatments.

(1) Where the connecting pipe has a diameter 18 inches or greater, headwalls and endwalls shall be provided with a protective barrier device to prevent entry of the storm sewer pipe by unauthorized persons. Such protection devices shall be designed to be removable for cleaning.

(2) Headwalls and endwalls shall be constructed of concrete.

(3) Flared end sections shall be of the same material as the connecting pipe and be designed for the size of the connecting pipe.

§315-40 RESERVE.

ARTICLE IV. STORMWATER MANAGEMENT SITE PLANS

§315-41 GENERAL PLAN REQUIREMENTS

A. The SWM Site Plan shall consist of a narrative and all applicable calculations, maps, plans and supplemental information necessary to demonstrate compliance with this Chapter.

B. All landowners of land included in the SWM Site Plan shall be required to execute all applications and final documents.

C. All SWM Site Plans and calculations shall be prepared and sealed by a Qualified Person. All stormwater designs, assumptions, methods and data must be presented in a manner acceptable to the Borough Engineer.

D. Where the regulated activity constitutes subdivision or land development as hereinabove defined, the SWM Site Plan shall be submitted with and form an integral part of the plans required under the Chapter325, Subdivision and Land Development.

E. All stormwater management materials shall be submitted in a format that is clear, concise, legible, neat and well organized.

F. All coordinates as depicted on the plan shall be based on the following:

(1) Horizontal datum shall be referenced to the PA South Zone State Plane Coordinate System (NAD83).

(2) Vertical datum shall be referenced to NAVD 88.

§315-42 DRAFTING STANDARDS

A. The Plan shall be clearly and legibly drawn.

B. If the Plan is prepared in two (2) or more drawing sheets, a key map showing the location of the sheets and a match line shall be placed on each sheet.

C. Each sheet shall be numbered to show the relationship to the total number of sheets in the Plan (e.g. Sheet 1 of 5).

D. Drawings or maps of the project area shall be drawn at 1" = 50' or larger scale (i.e. 1" = 40', 1" = 30', etc.) and shall be submitted on 24-inch x 36-inch sheets. The drainage area maps can be submitted at any scale provided the maps are legible.

E. SWM Site Plans shall be prepared in a form that meets the requirements for recording for the Office of the Recorder of Deeds of Lancaster County.

F. The total Development Site boundary and size with distances marked to the nearest foot and bearings to the nearest degree shall be clearly indicated on the Plan.

§315-43 SWM SITE PLAN INFORMATION

The following items shall be included in the SWM Site Plan:

A. The date of the SWM Site Plan and latest revision, graphic scale, written scale and North arrow.

B. The name of the development, the name and address of the owner of the property, and the name of the individual or firm preparing the Plan.

C. The file or project number assigned by the firm that prepared the Plan.

D. Certificate for Approval by the Borough Council or Designee. See Appendix A Certificate for Approval By Borough Council or Designee.

E. Certificate, signature and seal of a Qualified Professional preparing the Storm Water Management Site Plan. See Appendix A "Storm Water Management Designer Certification".

F. The following signature block for the Landowner, acknowledging that the SWM Facilities are fixtures that cannot be altered or removed without prior approval by the Borough. "I _____, hereby represent that no person shall modify, remove, fill, landscape, or alter any Storm Water Management BMPs, facilities, areas, or structures without the written approval of Borough Council."

G. A note on the Plan referencing a recorded Stormwater Operation and Maintenance (O&M) Agreement that indicates the location and responsibility for maintenance of the on-site and off-site facilities.

H. A note informing the owner that the Borough shall have the right-of-entry for the purposes of inspecting all stormwater conveyance, treatment, or storage facilities.

I. A location map, drawn to a scale of a minimum of one inch equals two thousand feet (1" = 2,000'), relating the Plan to municipal boundaries, at least two (2) intersections of road centerline or other identifiable landmarks.

J. Existing Features.

The following features shall be shown on all Storm Water Management Site Plans and shall be shown on a separate sheet titled "Existing Conditions". No proposed features shall be included on this sheet.

(1) In areas of disturbance, contours at intervals of one (1) or two (2) feet. In areas of steep slopes (greater than 15 percent) and areas undisturbed, five-foot contour intervals may be used.

(2) The locations of all existing utilities (including on lot disposal systems and wells), sanitary sewers, and water lines and associated easements.

(3) An overlay showing soil names and boundaries.

(4) Names of all adjacent landowners, property boundaries and locations and dimensions of easements as indicated by a boundary survey.

(5) Physical features including railroads, streets, flood hazard boundaries, wetlands, sinkholes, streams, lakes, ponds and other waterbodies, existing drainage courses, karst features, areas of native vegetation including trees greater than 6" diameter at breast height, woodlands, other environmentally sensitive areas and the total extent of the upstream area draining through the Development Site.

K. Proposed Features.

(1) Changes to the land surface and vegetative cover, including final proposed contours at intervals of one (1) or two (2) feet in areas of disturbance. In areas of steep slopes (greater than 15 percent) and areas undisturbed, five-foot contour intervals may be used.

(2) Proposed structures, roads, paved areas, buildings and other impervious and semi-impervious areas.

(3) The location of any proposed on-lot disposal systems, replacement drainfield easements, and water supply wells.

(4) A note indicating existing and proposed land use(s).

(5) Plan and profile drawings of all proposed SWM Facilities, including BMPs, drainage structures, pipes, open channels, and swales. This information shall be of the quality required for the construction of all facilities.

(6) Where pervious pavement is to be installed, pavement material and construction specifications shall be included.

(7) The location of all existing and proposed easements, including drainage easements, access easements and riparian corridor easements.

(8) A planting plan shall be provided for all vegetated BMPs in accordance with §315-31L.

L. The type and location of all E&S control facilities.

M. SWM Facilities located within or affecting the floodplain of any watercourse shall comply with the requirements of the flood plain regulations provided in Chapter 380, Zoning, or any future ordinances regulating construction or development within areas of the Borough subject to flooding.

N. The minimum floor elevations for all structures that would be affected by a basin, other temporary impoundments, or open conveyance systems where ponding may occur shall be two (2) feet above the 100 year water surface. If basement or underground facilities are proposed, detailed calculations addressing the effects of the storm water ponding on the structure and water-proofing and/or flood proofing design information shall be provided for review and approval.

O. No outlet structure from a storm water management facility, or swale, shall discharge directly onto a Borough or State roadway.

§315-44 ADDITIONAL INFORMATION

A. General description of the Development Site, including a description of existing natural and hydrologic features and any environmentally sensitive areas.

B. General description of the overall SWM concept for the project, including a description of permanent SWM techniques, non-structural BMPs to be employed and construction specifications of the materials to be used for structural SWM Facilities. The narrative shall include a description of any treatment trains and how the facilities are meant to function with each other to manage stormwater runoff.

C. A summary narrative stating the effect of the project (in terms of runoff volumes, water quality and peak flows) on adjacent properties and on any existing municipal SWM Facilities that may receive runoff from the Development Site.

D. Complete hydrologic, hydraulic, and structural computations for all SWM Facilities in a format suitable to the Borough Engineer.

E. Project Inspection Schedule for all BMPs.

§315-45 SUPPLEMENTAL INFORMATION

A. In areas of carbonate geology, a detailed geologic evaluation prepared by a registered Professional Geologist (PG) or other Qualified Person must be submitted as part of the SWM Site Plan. The report shall include, but not be limited to the following:

(1) The location of the following karst features;

(a) Sinkholes.

(b) closed depressions.

(c) lineaments in carbonate areas.

(d) fracture traces.

(e) Caverns.

(f) intermittent lakes.

(g) ephemeral disappearing streams.

(h) bedrock pinnacles (surface or subsurface).

(2) A plan for remediation of any identified karst features.

(3) Impacts of SWM Facilities on adjacent karst features, and impacts of karst features on adjacent SWM Facilities.

B. A NPDES and E&S Plan, including all approvals, as required by Chapter 102, shall be provided to the Borough prior to unconditional SWM Site Plan approval.

C. For any activities that require a DEP Joint Permit Application and are regulated under Chapter 105 or Chapter 106, or require any other permit under applicable state or federal regulations, the permit(s) shall be part of the SWM Site Plan and must be obtained prior to unconditional SWM Site Plan approval.

D. For any activities that require a Penn DOT Highway Occupancy Permit, the permit(s) shall be part of the SWM Site Plan and must be obtained prior to unconditional SWM Site Plan approval. If PennDOT requires that the Borough be the permittee for such drainage facilities, the Applicant shall enter into an Agreement, in recordable form, assuming all of the obligations which PennDOT may place upon the Borough as permittee, including, but not limited to, longterm maintenance of any such facilities, compliance with all conditions contained in the permit, and indemnification of the Borough for any costs or penalties which PennDOT may seek to impose on the Borough. The Borough shall have no obligation to make any applications to PennDOT.

E. An Operation and Maintenance (O&M) Plan shall be included that addresses the requirements of §315-63.

F. All SWM Facilities must be located on a map and described in detail. The content of the map(s) and computations shall include, but not be limited to:

(1) All calculations, assumptions and criteria used for the design of the SWM Facilities must be included for both pre-development and post-development conditions. If multiple facilities are used in conjunction with each other, such as infiltration BMPs with vegetation-based management practices, a summary narrative shall be included which describes the construction sequence and how the facilities are meant to function with each other to manage stormwater runoff.

(2) When groundwater recharge methods such as seepage pits, beds or trenches are used, the locations of existing and proposed septic tank infiltration areas and wells must be shown. A minimum fifty-foot separation from on-lot disposal system (OLDS) infiltration areas is required. Infiltration rates shall be based upon perk and probe tests conducted at the site of the proposed facility.

(3) A description of how each permanent stormwater BMP will be operated and maintained, and the identity of the person(s) responsible for operations and maintenance.

§315-46 RESERVED.

§315-47 RESERVED.

§315-48 RESERVED.

§315-49 RESERVED.

§315-50 RESERVED.

ARTICLE V. PLAN PROCESSING PROCEDURES

§315-51 EXEMPTION FROM PLAN SUBMISSION REQUIREMENTS

A. The following regulated activities are specifically exempt from the SWM Site Plan preparation and submission requirements articulated in §315-31A, Article IV and Article V of this Chapter:

(1) Agricultural activity, provided the activities are performed according to the requirements of Chapter 102.

(2) Forest management and timber operations, provided the activities are performed according to the requirements of Chapter 102.

(3) Conservation Practices being installed as part of the implementation of a Conservation Plan written by an NRCS certified planner.

(4) The cumulative installation of 1,000 or fewer square feet of Impervious Surface coverage proposed after June 1, 2014; provided that the activities meet the criteria of §315-51C, below, and are conducted in accordance with all requirements of this Chapter.

(5) Domestic landscape and/or vegetable gardening.

B. The Borough may deny or revoke any exemption pursuant to this Section at any time for any project that the Borough believes may pose a threat to public health, safety, property or the environment.

C. An Applicant proposing the cumulative installation of 1,000 square feet or less of Impervious Surface coverage may be exempt from the design, plan submittal, and processing requirements of Articles III, IV, and V of this Chapter if the proposal meets the criteria in the §315-51C. No person or activity is exempted from compliance with §315-65 and Article VII, Article VIII, and Article IX of this Chapter. Exemptions 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. Exemption shall not relieve an applicant from implementing such measures as necessary to meet compliance with any NPDES Permit requirements. Any exemption based on false, misleading, or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful.

(1) Any Applicant desiring exemption from design, plan submission, and plan processing requirements shall complete an application for exemption. The application form is on file at the Borough Office.

(2) The Applicant for exemption shall provide the Borough with all information necessary for the Borough to determine that:

(a) There shall be no disturbance of land within Floodplains, Wetlands, or Environmentally Sensitive Areas.

(b) The Applicant shall minimize soil disturbance, take steps to minimize Erosion and Sedimentation during construction activity, and promptly reclaim all disturbed areas with topsoil and vegetation.

(c) The Applicant shall take steps to insure that Runoff is directed to Pervious Areas on the subject property. No Runoff shall be directed onto an abutting street or neighboring property.

(d) The proposed Impervious Surface shall not adversely impact any existing known problem areas or downstream property owners or the quality of runoff entering any Municipal Separate Storm Sewer System.

(e) The Applicant shall comply with the erosion and sediment control requirements of Chapter 102 and the proposed Impervious Surface shall not create accelerated Erosion and Sedimentation.

D. Installation of additional impervious surface coverage on a lot where all of the following conditions have been met:

(1) The lot has a previously approved SWM Site Plan which included SWM Facilities to handle such future impervious surface coverage.

(2) The SWM Facilities on the approved SWM Site Plan were installed and inspected and approved by the Borough Engineer.

(3) The Borough approved the SWM Site Plan no more than five years before the application to add the impervious surface coverage was submitted to the Borough or, if the Borough approved the SWM Site Plan more than five years before the application to add the impervious surface coverage was submitted to the Borough, there have been no amendments to the design standards of this Chapter between the date of approval of the SWM Site Plan and the submission of the application to add impervious surface coverage.

E. Public road improvement projects initiated and/or sponsored by the Borough and/or the Pennsylvania Department of Transportation shall be exempt from these stormwater management criteria under the following circumstances:

(1) The road improvement project is required as part of a safety improvement project.

(2) A general analysis is provided and it can be demonstrated that the proposed improvements will not adversely affect any adjacent property owners, nor will the improvements adversely affect downstream stormwater management facilities. Otherwise, mitigation of these impacts will be required as part of the proposed improvements.

F. Road Maintenance projects initiated and/or sponsored by the Borough and/or the Pennsylvania Department of Transportation shall be exempt from these stormwater management criteria.

§315-52 **SMALL PROJECTS.**

A. Anyone proposing a Small Project shall submit 2 copies of the Small Project Application to the Borough.

B. A complete Small Project Permit Application shall include:

(1) Small Project Permit Application Form (On file at the Borough Office)

(2) Small Project Sketch Plan including the following:

(a) Name and address of landowner (and/or) developer

(b) Date of Small Project Permit Application submission.

(c) Name of individual and/or firm that prepared the sketch if different than the landowner and/or developer

(d) Location and square footage of proposed impervious area or land disturbance

(e) Approximate footprint and location of all structures on adjacent properties if located within 50 feet of the proposed impervious area or land disturbance

(f) Location of existing SWM Facilities if present

(g) Location and description of proposed SWM Facilities

(h) Direction of proposed stormwater discharge (e.g. with arrows)

(i) Scale and north arrow

(3) Filing fee (in accordance with the Borough's current fee schedule).

C. The Small Project Application shall be submitted in a format that is clear, concise, legible, neat and well organized.

D. Small Project applications need not demonstrate literal compliance with Article III, Article IV, and Article VI of this Chapter. However, Small Project applications must demonstrate they comply with the intent of this Chapter as outlined in §315-02 and §315-03. The Borough Council or its Designee may require additional information or invoke any section of this Chapter deemed necessary to adequately demonstrate compliance with the intent of this Chapter.

E. The Borough Council or its Designee may require an applicant to submit a full SWM Site Plan if in its opinion a Small Project application proposes significant risk to the Borough.

F. Applications for Small Project Permits shall be reviewed and acted upon by the Borough Council or its Designee within 30 days of filing a complete permit application.

G. Approval of a Small Project Permits shall be valid for a period not to exceed 1 year. This one-year time period shall commence on the date that the Borough Council or its Designee signs the approved Small Project Permit.

H. Written requests for an extension shall be made at least 30 days prior to the expiration date. If refused, the Borough Council or its Designee shall cite the reason(s) for such refusal.

§315-53 PRE-APPLICATION MEETING

A. Applicants are encouraged to schedule a pre-application meeting to review the overall stormwater management concept with Borough Staff/Engineer. The pre-application meeting is not mandatory and shall not constitute formal filing of a plan with the Borough. Topics discussed may include the following;

(1) Available geological maps, plans and other available data.

(2) Findings of the site analysis including identification of any environmentally sensitive areas, wellhead protection areas, riparian corridors, hydrologic soil groups, existing natural drainageways, karst features, areas conducive to infiltration to be utilized for volume control, etc.

(3) Results of infiltration tests.

(4) Applicable Subdivision and Land Development and/or Zoning Ordinance provisions.

(5) The conceptual project layout, including proposed structural and non-structural BMPs.

§315-54 STORMWATER MANAGEMENT SITE PLAN SUBMISSION

A. When a SWM Site Plan is required, the applicant shall submit the following to the Borough:

(1) 2 copies of the SWM Site Plan prepared in accordance with the requirements of Article IV of this Chapter.

(2) Two (2) copies of all supplemental data, plus electronic copies of plan and report files.

(3) A filing fee (in accordance with the Borough's current fee schedule).

B. The SWM Site Plan shall be submitted in a format that is clear, concise, legible, neat and well-organized.

C. All submittals including plans and reports shall include an electronic format acceptable to the Borough.

D. The applicant is responsible for submitting plans to any other agencies such as the Conservation District, PennDOT, DEP, etc. when permits from these agencies are required. Final approval shall be conditioned upon the applicant obtaining all necessary permits.

E. Incomplete submissions as determined by the Borough Council or its Designee, shall be returned to the Applicant within 8 days, along with a statement that the submission is incomplete and a list of deficiencies found. Otherwise, the application shall be deemed accepted for filing as of the date of submission. Acceptance of the application shall not, however, constitute an approval of the plan or a waiver of any deficiencies or irregularities. The applicant may appeal the Borough's decision not to accept a particular application in accordance with §315-95 of this Chapter.

F. At its sole discretion and in accordance with this Article, when a SWM Site Plan is found to be deficient, Borough Council or its Designee may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, Borough Council or its Designee may accept submission of revisions.

§315-55 BOROUGH REVIEW

A. When the regulated activity constitutes a Subdivision or Land Development, the SWM Site Plan and Subdivision/Land Development Plan shall be processed concurrently according to the plan processing procedure outlined in the Chapter 325, Subdivision and Land Development.

B. When the regulated activity constitutes a Small Project, the Small Project permit application shall be processed according to §315-52.

C. When the regulated activity does not constitute a Subdivision or Land Development or a Small Project the SWM Site Plan shall be processed according to the plan processing procedure outlined in this Chapter.

D. All applications for approval of a SWM Site Plan shall be acted upon by the Borough Council or its Designee, who shall render his/her decision and communicate it to the developer not later than 90 days following the date the application is filed.

(1) The decision of the Borough Council or its Designee shall be in writing and shall be communicated to the developer or their agent personally or mailed to him/her at his/her last known address not later than 15 days following the decision.

(2) When the application is not approved in terms as filed, the decision shall specify the defects found in the application and shall describe the requirements which have not been met and shall, in each case, cite the provisions of the chapter relied upon for the decision.

E. If the Borough disapproves the SWM Site Plan, the Borough will state the reasons for the disapproval in writing. The Borough also may approve the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing. Such conditional approval shall be contingent upon the applicant's written acceptance of the conditions.

§315-56 REVISION OF PLANS

A. Revisions to a SWM Site Plan after submission but before municipal action shall require a resubmission of the modified SWM Site Plan consistent with §315-54 of this Chapter and be subject to review as specified in §315-55 of this Chapter.

B. For the purposes of review deadlines, each resubmission required under §315-56A (after submission but before approval) shall constitute a new submission for the purposes of time limits as set forth in the MPC and this Chapter.

C. Any substantial revisions to a SWM Site Plan after approval shall be submitted as a new plan to the Borough, accompanied by the applicable Fee.

§315-57 AUTHORIZATION TO CONSTRUCT AND TERM OF VALIDITY

A. Approval of a SWM Site Plan shall be valid for a period not to exceed 5 year. This five-year time period shall commence on the date that the Borough Council or its Designee signs the approved SWM Site Plan.

B. If SWM Facilities included in this approved SWM Site Plan have not been constructed within this five-year time period, then the Borough Council or its Designee may consider the SWM Site Plan disapproved and may recommend that the Borough revoke any and all permits. SWM Site Plan that are considered disapproved by the Borough or its designee shall be resubmitted in accordance with Article V of this chapter.

C. An extension of an unexpired SWM Site Plan shall be issued by the Borough following the submission of a written request if, in the opinion of the Borough Council or its Designee, the subject property or affected surrounding area has not been altered in a manner which requires alteration or revision of the SWM Site Plan. Written requests shall be made at least 30 days prior to the expiration date.

D. The refusal of an extension of time shall cite the reason(s) for such refusal.

E. A SWM Site Plan shall not expire while a request for an extension is pending.

§315-58 AS-BUILT PLAN

A. Upon completion of the SWM Site Plan improvements and prior to the release of financial security, the applicant shall submit an As-Built Plan to the Borough. The As-Built Plan must show the final design specifications for all SWM Facilities and be sealed by a Qualified Person.

B. Review by Borough Engineer.

(1) The As-Built Plan shall be reviewed by the Borough Engineer to verify the plan includes all of the SWM Facilities on the subject property and verify the facilities are shown at the correct location.

(2) The Borough Engineer shall either approve the As-Built Plan or identify corrections required.

(3) If the Borough Engineer identifies corrections required to the As-Built Plan, the applicant shall submit a revised As-Built Plan to the Borough addressing the corrections.

C. All coordinates as depicted on the As-Built Plan shall be based on the following:

(1) Horizontal datum shall be referenced to the PA South Zone State Plane Coordinate System (NAD83).

(2) Vertical datum shall be referenced to NAVD 88.

D. The following information should be included with the as-built plan:

(1) Actual location of floodplain by elevation and dimension from property line.

(2) Actual location and cross section of swales and accompanying easements. The plan should demonstrate that the swales intercept and convey stormwater according to the approved subwatershed plan.

(3) Actual horizontal and vertical location of SWM Facilities including type and size of storm drainage pipes, inverts and rims of structures, slopes and accompanying easements.

(4) Actual location and connection point(s) of perforated underdrain(s).

(5) Actual location and connection point(s) of roof leader drain(s).

(6) Detention and infiltration basins.

(a) Actual contours of the basin.

(b) Actual outlet structure details, including type, size and inverts of outlet pipes. Include the orifice plate size and location on the as-built survey, if applicable.

(c) Actual elevation and widths for the embankment and emergency spillway.

(d) Compaction results and soils testing data for embankments structures.

(e) Certification that compaction of the basin bottom did not occur (for infiltration basins).

(f) Actual volume of the basin and post-development flow rates based upon as-built conditions for the basin. Calculations should be signed and sealed by a design professional.

(7) Actual location and dimensions of all BMP facilities.

E. The As-Built Plan shall be submitted in a format that is clear, concise, legible, neat and well organized.

F. All submittals including plans and reports shall include an electronic format acceptable to the Borough.

G. Digital inventory.

(1) When required. A digital inventory shall be submitted following approval of the As-Built Plan by the Borough Engineer if the project includes any of the following:

(a) SWM Facilities which are offered for dedication to the Borough.

(b) SWM Facilities which connect to or alter any portion of the Borough's MS4.

(c) BMPs included on a NPDES permit.

(2) Digital inventory requirements.

(a) The digital inventory shall be in an electronic format acceptable to the Borough Engineer.

(b) The digital inventory shall include all information included and shown on the approved As-Built Plan.

(c) All coordinates as depicted on the plan shall be based on the PA South Zone State Plan Coordinate System (NAD83 for horizontal and NAVD88 for vertical).

H. Following approval of the As-Built Plan by the Borough Engineer, the applicant shall submit the As-Built Plan for recordation in the Office of the Recorder of Deeds.

I. As-Built plans are not required for Small Projects.

§315-59 CERTIFICATE OF COMPLETION

A. At the completion of the project, the applicant shall provide Certification of Completion from a Qualified Person verifying that all permanent SWM Facilities have been constructed according to the Plans and specifications and approved revisions thereto.

B. Upon receipt of the Certificate of Completion, the Borough shall conduct a final inspection to certify compliance with this Chapter.

§315-60 FINANCIAL SECURITY

A. Financial security (bond, restricted account or letter of credit) for stormwater related improvements shall be supplied by the Developer in conjunction with the subdivision/land development approval, or in conjunction with the SWM Site Plan approval if no subdivision/land development plan is required.

B. The applicant shall provide a financial security to the Borough for the timely installation and proper construction of all SWM Facilities, including E&S controls and other BMPS, as required by the approved SWM Site Plan and this Chapter and, as applicable, in accordance with the provisions of Sections 509, 510, and 511 of the MPC. The amount of the financial security shall be calculated in accordance with the procedure in the MPC.

C. As the work of installing the required SWM Facilities proceeds, the party posting the financial security may request the Borough Council to release or authorize the release, from time to time, such portions of the financial security necessary for payment to the contractor or contractors performing the work. Any such requests shall be in writing addressed to the Borough Council, and the Borough Council shall have 45 days from receipt of such request within which to allow the Borough Engineer to certify, in writing,

to the Borough Council that such portion of the work upon the SWM Facilities has been completed in accordance with the approved SWM Site Plan. Upon such certification the Borough Council shall authorize release by the bonding company or lending institution of an amount as estimated by the Borough Engineer fairly representing the value of the SWM Facilities completed. The Borough Council may, prior to final release at the time of completion and certification by its Engineer, require retention of 10% of the estimated cost of the aforesaid SWM Facilities.

D. In the event that any SWM Facilities which may be required have not been installed as provided in the approved SWM Site Plan the Borough, Council is hereby granted the power to enforce any corporate bond, or other security by appropriate legal and equitable remedies. If proceeds of such bond, or other security are insufficient to pay the cost of installing or making repairs or corrections to all the SWM Facilities covered by said security, the Borough Council may, at its option, install part of such SWM Facilities and may institute appropriate legal or equitable action to recover the monies necessary to complete the remainder of the SWM Facilities.

E. Final Inspection. When the developer has completed all the required facilities, he shall notify the Borough in writing by certified or registered mail, and shall send a copy of such notice to the Borough Engineer. The Borough shall, within ten (10) days after receipt of such notice, authorize the Borough Engineer to inspect the required facilities. The Borough Engineer shall promptly file a report, in writing, with the Borough and shall mail a copy of the report to the developer by certified or registered mail. The report shall be made and mailed within thirty (30) days after receipt by the Borough Engineer of the aforesaid authorization by the Borough.

F. Financial Security is not required for Small Projects.

ARTICLE VI. OPERATION AND MAINTENANCE (O&M)

§315-61 RESPONSIBILITIES OF DEVELOPERS AND LANDOWNERS

A. The Landowner, successor and assigns shall maintain all SWM Facilities in good working order in accordance with the approved O&M Plan.

B. The Landowner shall convey to the Borough easements to assure access for inspections and maintenance, if required.

C. The Landowner shall keep on file with the Borough the name, address and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information will be submitted to the Borough within ten (10) days of the change.

D. The Landowner shall enumerate permanent SWM Facilities as permanent real estate appurtenances and record as deed restrictions or easements that run with the land.

E. The record owner of the Development Site shall sign and record an Operation and Maintenance (O&M) Agreement covering all SWM Facilities, including riparian buffers and riparian forest buffers, which are to be privately owned. Said agreement, designated as APPENDIX J, is attached and made part hereto. The O&M Plan and Agreement shall be recorded as a restrictive covenant agreement that runs with the land.

F. Small Projects are required to provide and record an O&M Agreement.

§315-62 OPERATION AND MAINTENANCE AGREEMENTS

A. The Operation and Maintenance Agreement shall be subject to the review and approval of the Borough Solicitor and Borough Council or its Designee.

B. The Borough is exempt from the requirement to sign and record an O&M Agreement.

§315-63 OPERATION AND MAINTENANCE (O&M) PLAN CONTENTS

A. The O&M Plan shall clearly establish the operation and maintenance necessary to ensure the proper functioning of all temporary and permanent SWM Facilities and erosion and sedimentation control facilities.

B. The following shall be addressed in the O&M Plan:

(1) Description of maintenance requirements, including, but not limited to, the following:

(a) Regular inspection of the SWM Facilities. To assure proper implementation of BMPs, maintenance and care SWM BMPs should be inspected by a qualified person, which may include the landowner, or the owner's designee, according to the following minimum frequencies:

[1] Annually for the first 5 years.

[2] Once every 3 years thereafter.

[3] As specified in the O&M Agreement pursuant to §315-62.

(b) All pipes, swales, and detention facilities shall be kept free of any debris or other obstruction and in original design condition.

(c) Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in grass waterways, pipes, detention or retention basins, infiltration structures, or BMPs, and thus reducing their capacity to convey or store water.

(d) Re-establishment of vegetation of scoured areas or areas where vegetation has not been successfully established. Selection of seed mixtures shall be subject to approval by the Borough.

(2) Riparian forest buffer management plan prepared in accordance with Chapter 102 §14(b)(4) if required.

(3) Identification of a responsible individual, corporation, association or other entity for ownership and maintenance of both temporary and permanent SWM and erosion and sedimentation control facilities.

(4) Establishment of suitable easements for access to all SWM Facilities.

§315-64 MAINTENANCE OF FACILITIES ACCEPTED BY THE BOROUGH

A. The Borough reserves the right to accept or reject any proposal to dedicate ownership and operating responsibility of any SWM Facilities to the Borough.

B. If SWM Facilities are accepted by the Borough for dedication, the landowner/developer shall be required to pay a specified amount to the Borough Stormwater Maintenance Fund or escrow account to defray costs of periodic inspections and maintenance expenses. This fee shall be provided to the Borough prior to unconditional SWM Site Plan approval. The amount of the deposit shall be determined as follows subject to the approval of Borough Council:

(1) The deposit shall cover the estimated costs for maintenance and inspections for twenty-five (25) years. The Borough will establish the estimated costs according to the O&M requirements outlined in the approved O&M Plan.

(2) If a storage facility is proposed that also serves as a recreation facility (e.g. ballfield, lake), the Borough may reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purpose.

C. Maintenance shall be conducted as necessary to provide for the continued functioning of the SWM Facility. Costs of inspections, maintenance and repairs are recoverable from the Borough Stormwater Maintenance Fund or escrow account.

§315-65 MAINTENANCE OF EXISTING FACILITIES / BMPS

A. SWM Facilities existing on the effective date of this Chapter which have not been accepted by the Borough or for which maintenance responsibility has not been assumed by a private entity such as a homeowners' association shall be maintained by the individual Landowners. Such maintenance shall include at a minimum those items set forth in §315-63B above. If the Borough determines at any time that any permanent SWM Facility has been eliminated, altered, blocked through the erection of structures or the deposit of materials, or improperly maintained, the condition constitutes a nuisance, and the Borough shall notify the Landowner of corrective measures that are required, and provide for a reasonable period of time, not to exceed 30 days, within which the owner shall take such corrective action. If the Landowner does not take the required corrective action, the Borough may either perform the work or contract for the performance of the work and bill the Landowner for the cost of the work plus a penalty of 10% of the cost of the work. If such bill is not paid by the property owner within 30 days, the Borough may file a municipal claim against the property upon which the work was performed in accordance with the applicable laws. The Borough shall have the right to choose among the remedies and may use one or more remedies concurrently.

§315-66 RESERVED.

§315-67 RESERVED.

§315-68 RESERVED.

§315-69 RESERVED.

§315-70 RESERVED.

ARTICLE VII. FEES AND EXPENSES

§315-71 GENERAL

The Borough may include all costs incurred in the fee charged to an applicant.

A. The fee required by this Chapter is the Borough Storm Water Management Review Fee and shall be established and may be modified from time to time by resolution and utilized by the Borough, and/or its designee, to defray the various administrative costs, all as itemized in Section 315-62 of this Chapter. All fees as established for the referenced purposes shall be borne by the Applicant.

B. The Borough shall not approve a SWM Site Plan, a building permit or approve any subdivision or land development plan for any property or plan which is governed by this chapter before the developer has posted the improvement security and paid all fees and expenses in accordance with this chapter.

§315-72 EXPENSES COVERED BY FEES

The fee may include, but not be limited to, costs for the following:

A. Administrative and clerical costs.

B. Review of the SWM Site Plan by the Borough Engineer/Solicitor/Staff or other professional consultant.

C. Review of the Stormwater Operation and Maintenance Plan and Stormwater Agreement by the Borough Engineer/Solicitor/Staff or other professional consultant.

D. Inspections.

E. Any additional work required to enforce any permit provisions regulated by this Chapter, correct violations, and assure proper completion of stipulated remedial actions.

§315-73 **RESERVED.**

§315-74 **RESERVED.**

§315-75 **RESERVED.**

§315-76 **RESERVED.**

§315-77 **RESERVED.**

§315-78 **RESERVED.**

§315-79 **RESERVED.**

§315-80 **RESERVED.**

ARTICLE VIII. PROHIBITIONS

§315-81 PROHIBITED DISCHARGES AND CONNECTIONS

A. The following connections are prohibited, except as provided in §315-81D below.

(1) Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter a municipal separate storm sewer (if applicable), or waters of this Commonwealth, and any connections to the storm sewer from indoor drains and sinks; and

(2) Any drain or conveyance connected from a commercial or industrial land use to the Municipal Separate Storm Sewer (if applicable) which has not been documented in plans, maps, or equivalent records, and approved by the Borough.

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 §315-81D below and (2) discharges allowed under a state or federal permit.

C. No person shall place any structure, fill, landscaping or vegetation into a SWM Facility or within a drainage easement that will limit or diminish the functioning of the SWM Facility in any manner without the written approval of the Borough.

D. The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of this Commonwealth:

(1) Discharges from firefighting activities

(2) Potable water sources including water line flushing

(3) Irrigation drainage

(4) Air conditioning condensate

(5) Springs

(6) Water from crawl space pumps

(7) 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

(8) Flows from riparian habitats and wetlands

(9) Uncontaminated water from foundations or from footing drains

(10) Lawn watering

(11) De-chlorinated swimming pool discharges

(12) Uncontaminated groundwater

(13) Water from individual residential car washing

(14) Routine external building wash down (which does not use detergents or other compounds)

(15) Diverted stream flows

(16) Rising ground waters

(17) Other discharges approved by the Borough

E. In the event that the Borough or DEP determines that any of the discharges identified in §315-81D, above, significantly contribute to pollution of the waters of this Commonwealth, the Borough or DEP will notify the responsible person(s) to cease the discharge.

§315-82 ALTERATION OF SWM BMPS

No person shall modify, remove, fill, landscape or alter stormwater management facilities or stormwater BMPs which may have been installed on a property unless a stormwater management plan has been approved which authorizes such modification, removal, filling, landscaping or alteration. No person shall place any structure, fill, landscaping or vegetation into a stormwater management facility or within a drainage easement which will limit or alter the functioning of the facility or easement in any manner.

§315-83 RESERVED.

§315-84 RESERVED.

§315-85 RESERVED.

§315-86 RESERVED.

§315-87 RESERVED.

§315-88 RESERVED.

§315-89 RESERVED.

§315-90 RESERVED.

ARTICLE IX. ENFORCEMENT AND PENALTIES

§315-91 RIGHT-OF-ENTRY

Upon presentation of proper credentials, duly authorized representatives of the Borough may enter at reasonable times upon any property within the Borough to investigate or ascertain the condition of the subject property in regard to any aspect regulated by this Chapter.

§315-92 SCHEDULE OF INSPECTIONS

A. The Designee may inspect all phases of the construction, operations, maintenance and any other implementation of SWM Facilities and BMPs.

B. During any stage of the regulated earth disturbance activities if the Designee determines that any BMPs are not being implemented in accordance with this chapter, the Borough may suspend or revoke any existing permits or other approvals until the deficiencies are corrected.

C. During any stage of the work, if the Designee determines that the permanent SWM Facilities are not being installed in accordance with the approved stormwater management plan, the Borough shall revoke any existing permits until a revised SWM Site Plan is submitted and approved, as specified in this chapter.

D. During any phase of the work, if the Designee determines that the soil or other site conditions are not as stated or shown in the approved SWM Site Plan or that the developer has provided a false statement or misrepresentation, the Designee may refuse to approve further work and revoke existing building permits until a revised plan is submitted and approved, as required under by Article V of this Chapter.

§315-93 ENFORCEMENT

The Borough Council is hereby authorized and directed to enforce all of the provisions of this Chapter.

A. In the event that a person fails to comply with the requirements of this Chapter or fails to conform to the requirements of any permit issued hereunder, the Borough shall order compliance by written notice to the responsible person. Such notice may require without limitation:

(1) The performance of monitoring, analyses, and reporting;

(2) The elimination of prohibited connections or discharges;

(3) Cessation of any violating discharges, practices, or operations;

(4) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

(5) Payment of a fine to cover administrative and remediation costs;

(6) The implementation of stormwater BMPs; and

(7) Operation and maintenance of stormwater BMPs.

B. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, the work will be done by the Borough or designee and the expense thereof shall be charged to the violator.

C. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Chapter. All such penalties shall be deemed cumulative and shall not prevent the Borough from pursuing any and all other remedies available in law or equity. It shall be the responsibility of the owner of the real property on which any Regulated Activity is proposed to occur, is occurring, or has occurred, to comply with the terms and conditions of this Chapter.

D. Any permit or approval issued by the Borough pursuant to this Chapter may be suspended by the Borough for:

(1) Noncompliance with or failure to implement any provision of the approved SWM Site Plan or O&M Agreement.

(2) A violation of any provisions of this Chapter or any other applicable law, Chapter, rule, or regulation relating to the regulated activity.

(3) The creation of any condition or the commission of any act during construction or development that constitutes or creates a hazard, nuisance, pollution or endangers the life or property of others.

E. A suspended permit or approval may be reinstated by the Borough when:

(1) The Borough has inspected and approved the corrections to the violation that caused the suspension;

(2) The Borough is satisfied that the violation has been corrected.

§315-94 VIOLATIONS, PENALTIES, AND REMEDIES

A. It shall be a violation of this Chapter to commit or permit any other person to commit any of the following acts:

(1) To commence Regulated Activities prior to obtaining unconditional approval of a SWM Site Plan or in violation of the terms or conditions of a SWM Site Plan approved under this Chapter.

(2) To install, repair, modify or alter SWM Facilities prior to obtaining approvals under this Chapter, or, in a manner which violates the terms and conditions of any approval issued under this Chapter.

(3) To misuse or fail to maintain any SWM Facility installed upon a property.

(4) To construct any improvements upon, grade, fill or take any other action which will impair the proper functioning of any SWM Facility.

(5) To place false information on, or, omit relevant information from an application for approval under this Chapter.

(6) To fail to comply with any other provisions of this Chapter.

B. For each violation of the provisions of this Chapter, the owner, agent, lessee, or contractor or any other person who commits, takes part in, or assists in any such violation shall be liable upon conviction thereof in a summary proceeding to pay a fine of not less than $200.00 nor more than $1,000.00 for each offense, together with the costs of prosecution. In accordance with Section 3321(6) of the Borough Code, any person found guilty of violating this Chapter may be assessed reasonable attorneys' fees incurred by the Borough in the enforcement proceeding. Each day or portion thereof in which a violation exists shall be considered a separate violation of this Chapter, and each Section of this Chapter which is violated shall be considered a separate violation.

C. The Borough may also institute suits to restrain, prevent, or abate a violation of this Chapter in equity or at law. Such proceedings in equity or at law may be initiated before any court of competent jurisdiction. In cases of emergency where, in the opinion of the court, the circumstances of the case require immediate abatement of the unlawful conduct, the court may, in its decree, fix a reasonable time during which the person responsible for the unlawful conduct shall correct or abate the same. The expense of such proceedings shall be recoverable from the violator in such manner as may now or hereafter be provided by law. In accordance with Section 3321(a)(5) of the Borough Code 8 Pa. C.S. §3321 (a)(5), any person found guilty of violating this Chapter may be assessed reasonable attorneys' fees incurred by the Borough in the enforcement proceeding.

D. Borough Council or Designee may also take actions relating to suspension or revocation of permits set forth in §315-93.

E. Borough Council may, by resolution, appoint a code enforcement officer to enforce this Chapter and may authorize such code enforcement officer to institute summary criminal proceedings without prior action by Borough Council.

§315-95 APPEALS

A. Any person aggrieved by any administrative action of the Borough may appeal to Borough Council within 30 days of that action. Any such appeal shall be governed by the procedures of Article V of the Local Agency Law, 2 Pa. C.S.A. 501 et seq.

B. Any person aggrieved by any decision of Borough Council may appeal to the Lancaster County Court of Common Pleas, in accordance with Article VII of Local Agency Law, 2 Pa. C.S.A. 701 et seq., within 30 days of that decision.

§315-96 MODIFICATION OF ORDINANCE PROVISIONS

A. The provisions of this Chapter not relating to water quality are intended as minimum standards for the protection of the public health, safety, and welfare. The Borough reserves the right to modify or to extend them conditionally in individual cases as may be necessary in the public interest; provided, however, that such variation shall not have the effect of nullifying the intent and purpose of this Chapter, and that the applicant shows to the satisfaction of the Borough that the applicable regulation is unreasonable, or will cause undue hardship, or that an alternative proposal will allow for equal or better results. The list of such modifications, along with an explanation of and justification for each modification, shall be included on the plan. This section does not apply during an enforcement action.

B. In granting waivers/modifications for provisions of this Chapter not relating to water quality, the Borough may impose such conditions as will, in its judgment, secure substantially the objectives of the standards and requirements of this Chapter.

REFERENCES

1. 25 Pennsylvania Code, Chapter 102 Erosion and Sediment Control
2. Minnesota Pollution Control Agency
3. Code of Federal Regulations – Title 44: Emergency Management and Assistance, §9.4 Definitions
4. *25 Pa.Code Chapter 105*
5. Based on definition in Wisconsin Department of Natural Resources Administrative Rule NR 151.006.
6. Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006), as amended and updated. *Pennsylvania Stormwater Best Management Practices Manual*. Harrisburg, PA.
7. City of Jacksonville website, http://www3.coj.net/Departments/CityFees/Glossary.aspx
8. Lancaster County Model Subdivision and Land Development Ordinance.
9. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (March 2012), as amended and updated. *Erosion and Sediment Pollution Control Program Manual*. Harrisburg, PA.
10. CSN Technical Bulletin No. 5, Stormwater Design for High Intensity Redevelopment Projects in the Chesapeake Bay Watershed, version 2.0. Chesapeake Stormwater Network, January 5, 2011 – page 43.
11. "Penn State Urban Hydrology Model User Manual" by Thomas A. Seybert, PE, David F. Kibler, PE, and Elizabeth I. White, PE, August 1993 page 70 and VT/PSUHM help screen.
12. 25 Pa. Code, Chapter 71 Administration of Sewage Facilities Planning Program, § 71.1

Section 2. All other sections, parts and provisions of the Code of Ordinances of the Borough of Millersville shall remain in full force and effect as previously enacted and amended.

Section 3. In the event any provision, section, sentence, clause or part of this Ordinance shall be held to be invalid, illegal or unconstitutional by a court of competent jurisdiction, such invalidity, illegality or unconstitutionality shall not affect or impair the remaining provisions, sections, sentences, clauses or parts of this Ordinance, it being the intent of Borough Council that the remainder of the Ordinance shall be and shall remain in full force and effect.

Section 4. This Ordinance shall take effect and be in force five (5) days after its enactment by Borough Council of the Borough of Millersville as provided by law.

DULY ORDAINED AND ENACTED this 27th day of May, 2014, by Borough Council of the Borough of Millersville, Lancaster County, Pennsylvania, in lawful session duly assembled.

BOROUGH OF MILLERSVILLE
Lancaster County, Pennsylvania

Attest: _____ By: _____

~~(Assistant)~~ Secretary

~~(Vice)~~ President
Borough Council

[BOROUGH SEAL]

Examined and approved as an Ordinance this 27th day of May, 2014.

By: _____
Mayor

APPENDIX A STORM WATER MANAGEMENT PLAN CERTIFICATIONS

CERTIFICATE FOR APPROVAL BY MILLERSVILLE BOROUGH COUNCIL

(SALDO Plans)

At a meeting on _____, 20____, the Millersville Borough Council approved this project, and all conditions have been met. This approval includes the complete set of plans and information that are filed with the Borough in Permit No. _____, based upon its conformity with the standards of the Millersville Borough Storm Water Management Ordinance.

Attest: _____ By: _____

(Assistant) Secretary (Vice) President

Borough Council

[BOROUGH SEAL]

CERTIFICATE FOR APPROVAL BY MILLERSVILLE BOROUGH COUNCIL DESIGNEE (Small Project)

I, _____, on this date, have reviewed and hereby certify that that to the best of my knowledge the Storm Water Management Site Plan meets all design standards and criteria of the Millersville Borough Storm Water Management Ordinance. Approved by the Millersville Borough Council Designee this _____ day of _____, 20____.

By: _____

Borough Manager

STORM WATER MANAGEMENT DESIGNER CERTIFICATION

(SALDO Plans/Small Projects when applicable)

I hereby certify that, to the best of my knowledge, the storm water management facilities shown and described hereon are designed in conformance with the Millersville Borough Storm Water Management Ordinance. I also certify that the proposed detention basin (circle one) is/is not underlain by carbonate geology. Certified this _____ day of _____, 20____.

By*: _____

*Signature of the qualified professional responsible for the preparation of the plan.

[SEAL OF INDIVIDUAL]

APPENDIX B STORM INTENSITY-DURATION-FREQUENCY CHART

PDT-IDF

Storm Frequency⇒	2 Years	5 Years	10 Years	25 Years	50 Years	100 Years
Time (Minutes)	Rainfall Intensity (Inches per Hour)					
5.0	4.63	5.40	6.02	6.70	7.51	8.19
6.0	4.34	5.15	5.70	6.39	7.22	7.90
7.0	4.12	4.95	5.42	6.10	6.95	7.62
8.0	3.92	4.70	5.17	5.85	6.70	7.36
9.0	3.75	4.50	4.95	5.62	6.47	7.12
10.0	3.59	4.30	4.75	5.41	6.26	6.90
11.0	3.45	4.15	4.58	5.22	6.07	6.70
12.0	3.32	4.00	4.42	5.05	5.88	6.50
13.0	3.21	3.85	4.27	4.89	5.71	6.33
14.0	3.10	3.70	4.16	4.74	5.56	6.16
15.0	3.00	3.55	4.00	4.60	5.40	6.00
20.0	2.60	3.10	3.50	4.03	4.78	5.34
25.0	2.31	2.65	3.15	3.61	4.30	4.83
30.0	2.09	2.45	2.82	3.27	3.92	4.41
40.0	1.76	2.05	2.39	2.78	3.34	3.79
50.0	1.53	1.77	2.08	2.42	2.92	3.33
60.0	1.35	1.60	1.85	2.15	2.60	2.98

APPENDIX C RUNOFF COEFFICIENTS "C" FOR RATIONAL FORMULA

Soil Group ⇒	A			B			C			D		
Slope ⇒	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Land Use												
Cultivated Land:												
Winter Conditions	.14	.23	.34	.21	.32	.41	.27	.37	.48	.34	.45	.56
Summer Conditions	.10	.16	.22	.14	.20	.28	.19	.26	.33	.23	.29	.38
Fallowed Fields:												
Poor Conditions	.12	.19	.28	.17	.25	.34	.23	.33	.40	.27	.35	.45
Good Conditions	.08	.13	.16	.11	.15	.21	.14	.19	.26	.18	.23	.31
Forest/Woodland	.08	.11	.14	.10	.14	.18	.12	.16	.20	.15	.20	.25
Grass Areas:												
Good Conditions	.10	.16	.20	.14	.19	.26	.18	.22	.30	.21	.25	.35
Average Conditions	.12	.18	.22	.16	.21	.28	.20	.25	.34	.24	.29	.41
Poor Conditions	.14	.21	.30	.18	.28	.37	.25	.35	.44	.30	.40	.50
Impervious Areas	.90	.91	.92	.91	.92	.93	.92	.93	.94	.93	.94	.95
Weighted Residential:												
Lot Size ⅛ Acre	.29	.33	.36	.31	.35	.40	.34	.38	.44	.36	.41	.48
Lot Size ¼ Acre	.26	.30	.34	.29	.33	.38	.32	.36	.42	.34	.38	.46
Lot Size ⅓ Acre	.24	.28	.31	.26	.32	.35	.29	.35	.40	.32	.36	.45
Lot Size ½ Acre	.21	.25	.28	.24	.27	.32	.27	.31	.37	.30	.34	.43
Lot Size 1 Acre	.18	.23	.26	.21	.24	.30	.24	.29	.36	.28	.32	.41

APPENDIX D RUNOFF CURVE NUMBERS "CN" FOR SCS METHOD*

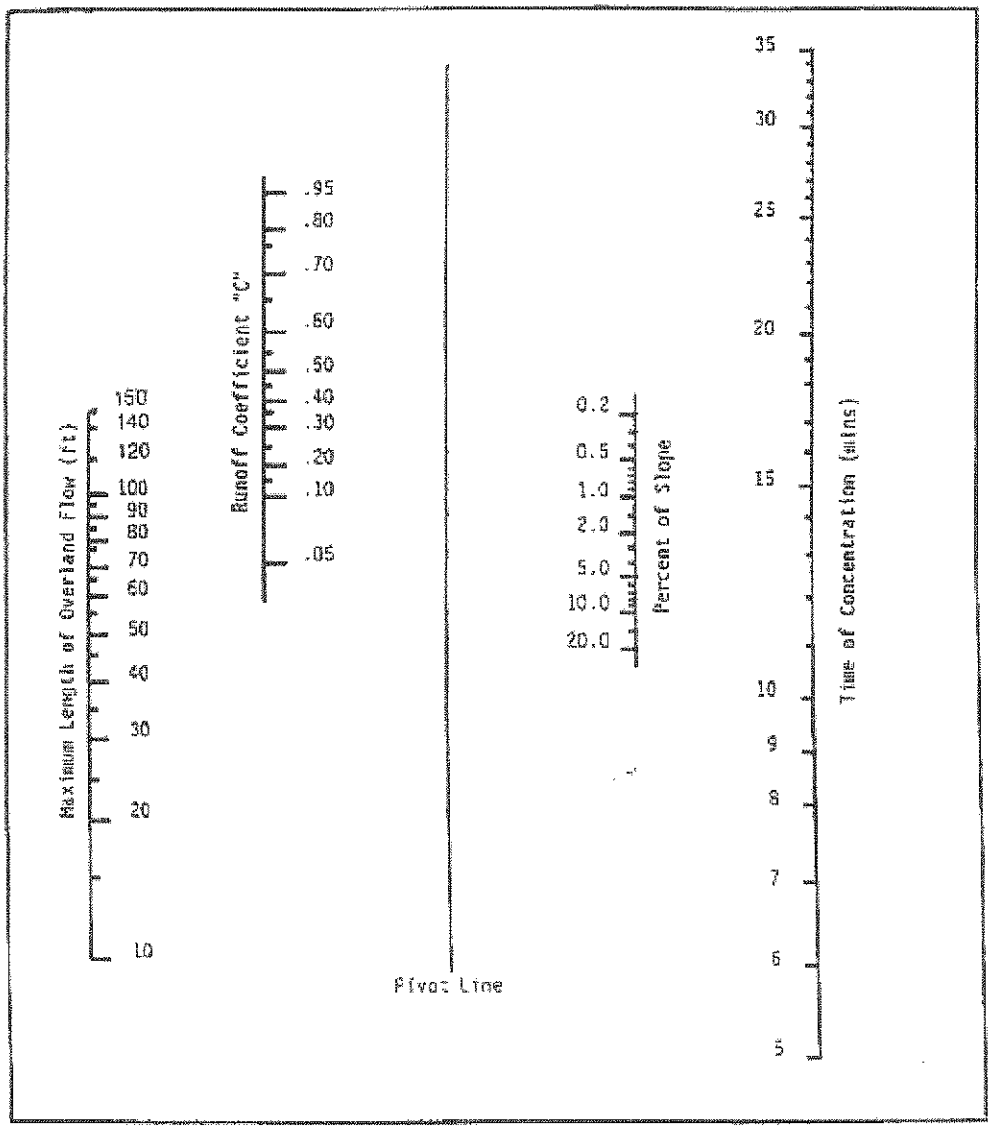
Soil Group ⇒	A			B			C			D		
Slope ⇒	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Land Use												
Cultivated Land:												
Winter Conditions	48	60	65	62	73	73	68	78	79	77	81	88
Summer Conditions	35	51	61	48	55	70	57	65	77	64	69	80
Fallowed Fields:												
Poor Conditions	45	54	76	56	63	85	64	74	90	69	77	93
Good Conditions	30	44	74	43	48	83	48	54	88	56	60	90
Forest/Woodland	30	30	40	42	46	55	45	50	70	50	56	77
Grass Areas:												
Good Conditions	35	39	51	48	54	61	56	59	74	62	63	80
Average Conditions	45	49	53	52	55	69	60	63	79	65	69	84
Poor Conditions	48	55	68	56	67	79	66	74	86	73	81	89
Impervious Areas	96	97	98	96	97	98	96	97	98	96	97	98
Weighted Residential:												
Lot Size ⅛ Acre	71	75	77	74	76	85	78	80	90	81	83	92
Lot Size ¼ Acre	61	62	67	66	69	75	67	69	83	75	78	87
Lot Size ⅓ Acre	57	59	65	64	66	72	65	66	81	74	77	86
Lot Size ½ Acre	54	57	63	62	64	70	63	65	80	72	76	85
Lot Size 1 Acre	51	55	62	61	63	68	61	64	79	71	75	84

APPENDIX E MANNING "N" VALUES FOR PIPES

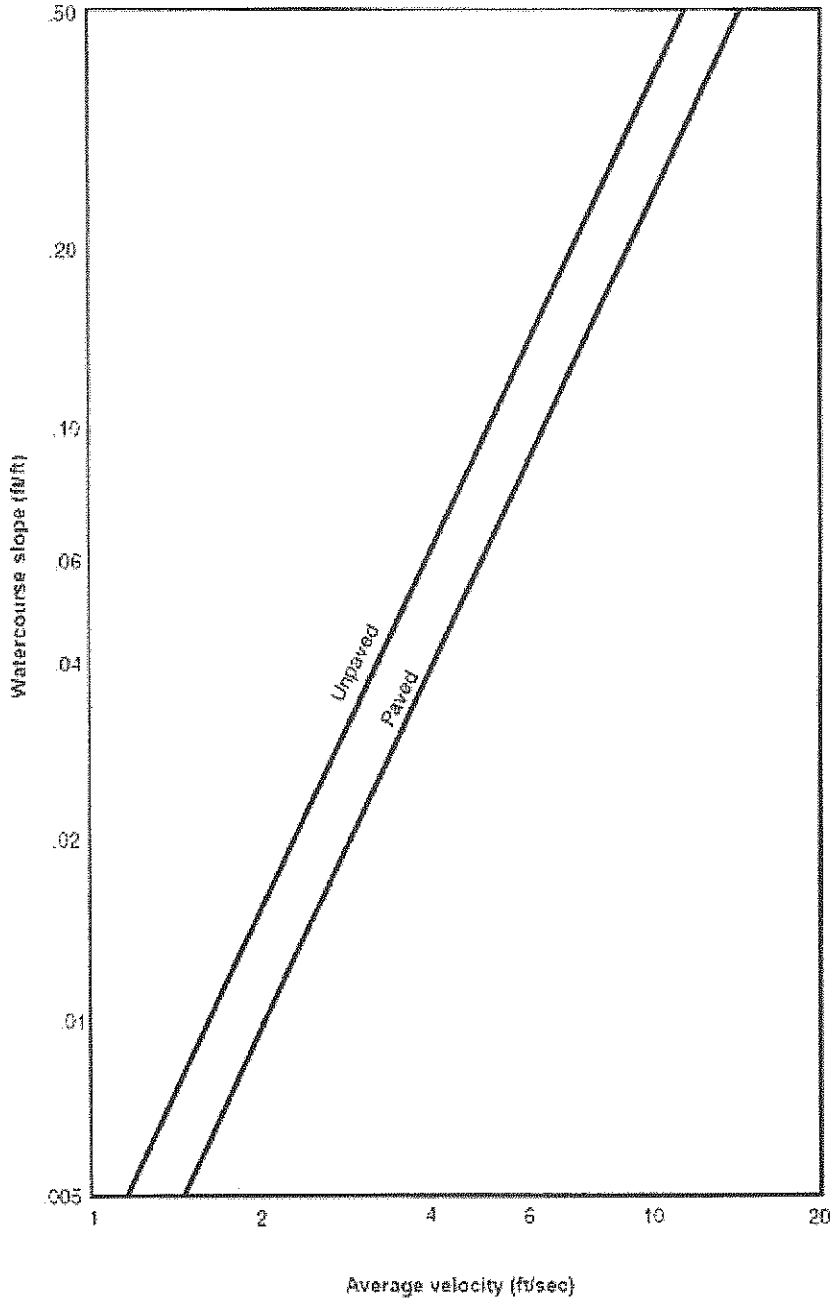
Pipe Material	Manning "n" Value
Helical Corrugated Steel/Aluminum 2 2/3 × ½ Corrugations Diameter (Inches)	
15	0.014
18	0.015
21	0.016
24	0.017
27	0.018
30	0.019
36	0.020
42	0.021
48	0.021
Reinforced Concrete – All Diameters	0.013
Corrugated Polyethylene – Smooth Lining – All Diameters	0.012
Note: Arch pipe shall have the Manning "n" value of an equal periphery of circular pipe	

APPENDIX F TIME OF CONCENTRATION (TC) NOMOGRAPH

For Determining Sheet Flow (For Use with Rational Method)



APPENDIX G AVERAGE VELOCITIES FOR ESTIMATING TRAVEL TIME FOR SHALLOW CONCENTRATED FLOW



APPENDIX H TIME OF CONCENTRATION WORKSHEET

Worksheet #1: Time of Concentration (T_c) or Travel Time (T_t)

Project _____ By _____ Date _____

Location _____ Checked _____ Date _____

Circle One: Present Developed _____

Circle One: Tc Tt through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic or description of flow segments.

Sheet Flow (Applicable to T_c Only)	**Segment ID**			
1. Surface description (table 3-1).....				
2. Manning's roughness coefficient, n (table 3-1).....				
3. Flow length, L (total L ≤ **150 ft)..... ft				
4. Two-year 24-Hour rainfall, P_2..... in				
5. Land slope, s..... ft/ft				
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5} \times S^{0.4}}$ Compute T_t ..... hr		+		=

Shallow Concentrated Flow	**Segment ID**			
7. Surface description (paved or unpaved).....				
8. Flow Length, L..... ft				
9. Watercourse slope, s..... ft/ft				
10. Average velocity, V (figure 3-1)..... ft/s				
11. $T_t = \frac{L}{3{,}600 \times V}$ Compute T_t ..... hr		+		=

Channel Flow	**Segment ID**			
12. Cross sectional flow area, a..... ft^2				
13. Wetted perimeter, P_w..... ft				
14. Hydraulic radius, $r = \frac{a}{P_w}$ Compute r ..... ft				
15. Channel slope, s..... ft/ft				
16. Manning's roughness coefficient, n.....				
17. $V = \frac{1.49 \times r^{\frac{2}{3}} \times s^{\frac{1}{2}}}{n}$ Compute V ..... ft/s				
18. Flow Length, L..... ft/s				
19. $T_t = \frac{L}{3{,}600 \times V}$ Compute T_t ..... hr		+		=
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11 and 19)..... hr				

* Table 3-1 per latest TR-55, Urban Hydrology for Small Watersheds

** 150 Feet Sheet flow length per latest TR-55 revision

APPENDIX I LOW IMPACT DEVELOPMENT PRACTICES

ALTERNATIVE APPROACH FOR MANAGING STORM WATER RUNOFF

Natural hydrologic conditions may be altered radically by poorly planned development practices, such as introducing unneeded impervious surfaces, destroying existing drainage swales, constructing unnecessary storm sewers, and changing local topography. A traditional drainage approach of development has been to remove runoff from a site as quickly as possible and capture it in a detention basin. This approach leads ultimately to the degradation of water quality as well as expenditure of additional resources for detaining and managing concentrated runoff at some downstream location.

The recommended alternative approach is to promote practices that will minimize post-development runoff rates and volumes, which will minimize needs for artificial conveyance and storage facilities. To simulate pre-development hydrologic conditions, forced infiltration is often necessary to offset the loss of infiltration by creation of impervious surfaces. The ability of the ground to infiltrate depends upon the soil types and its conditions.

Preserving natural hydrologic conditions requires careful alternative site design considerations. Site design practices include preserving natural drainage features, minimizing impervious surface area, reducing the hydraulic connectivity of impervious surfaces, and protecting natural depression storage. A well-designed site will contain a mix of all those features. The following describes various techniques to achieve the alternative approach.

- **Preserving Natural Drainage Features**: Protecting natural drainage features, particularly vegetated drainage swales and channels, is desirable because of their ability to infiltrate and attenuate flows and to filter pollutants. However, this objective is often not accomplished in land development. In fact, commonly held drainage philosophy encourages just the opposite pattern – streets and adjacent storm sewers typically are located in the natural headwater valleys and swales, thereby replacing natural drainage functions with a completely impervious system. As a result, runoff and pollutants generated from impervious surfaces flow directly into storm sewers with no opportunity for attenuation, infiltration or filtration. Developments designed to fit site topography also minimizes the amount of grading on site.
- **Protecting Natural Depression Storage Areas**: Depressional storage areas have no surface outlet, or drain very slowly following a storm event. They can be commonly seen as ponded areas in farm fields during the wet season or after large runoff events. Traditional development practices eliminate these depressions by filling or draining, thereby obliterating their ability to reduce surface runoff volumes and trap pollutants. The volume and release-rate characteristics of depressions should be protected in the design of the development site. The depressions can be protected by simply avoiding the depression or by incorporating its storage as additional capacity in required detention facilities (for limitations reference Section 303.06 B).
- **Avoiding Introduction of Impervious Areas**: Careful site planning should consider reducing impervious coverage to the maximum extent possible. Building footprints, sidewalks, driveways and other features producing impervious surfaces should be evaluated to minimize impacts on runoff.

- **Reducing the Hydraulic Connectivity of Impervious Surfaces:** Impervious surfaces are significantly less of a problem if they are not directly connected to an impervious conveyance system (such as storm sewers). Two (2) basic ways to reduce hydraulic connectivity are routing of roof runoff over lawns and reducing the use of storm sewers. Site grading should promote increasing travel time of storm water runoff, and should help reduce the concentration of runoff to a single point in the development.
- **Routing Runoff Over Lawns**: Roof runoff can be easily routed over lawns in most site designs. The practice discourages direct connection of downspouts to storm sewers or parking lots. The practice also discourages sloping driveways and parking lots to the street. By routing roof drains and crowning the driveway to run off to the lawn, the lawn is essentially used as a filter strip.
- **Reducing the Use of Storm Sewers**: By reducing the use of storm sewers for draining streets, parking lots and backyards, the potential for accelerating runoff from the development can be greatly reduced. The practice requires greater use of swales and may not be practical for some development sites, especially if there are concerns for areas that do not drain in a reasonable time. The practice requires educating local citizens and public works officials, who expect runoff to disappear shortly after a rainfall event.
- **Reducing Street Widths**: Street widths can be reduced by either eliminating on-street parking or by reducing roadway widths. Municipal planners and traffic designers should encourage narrower neighborhood streets which ultimately could lower maintenance.
- **Limiting Sidewalks to One Side of the Street**: A sidewalk on one side of the street may suffice in low-traffic neighborhoods. The lost sidewalk could be replaced with bicycle/recreational trails that follow back-of-lot lines. Where appropriate, backyard trails should be constructed using pervious materials.
- **Using Permeable Paving Materials**: These materials include permeable interlocking concrete paving blocks or porous bituminous concrete. Such materials should be considered as alternatives to conventional pavement surfaces, especially for low use surfaces such as driveways, overflow parking lots and emergency access roads.
- **Reducing Building Setbacks**: Reducing building setbacks reduces driveway and entry walks and is most readily accomplished along low-traffic streets where traffic noise is not a problem.
- **Constructing Cluster Developments**: Cluster developments can also reduce the amount of impervious area for a given number of lots. The biggest savings is in street length, which will also reduce costs of the development. Cluster development clusters the construction activity onto less-sensitive areas without substantially affecting the gross density of development.

In summary, a careful consideration of the existing topography and implementation of a combination of the above mentioned techniques may avoid construction of costly storm water control measures. Other benefits include reduced potential of downstream flooding, water quality degradation of receiving streams/water bodies and enhancement of aesthetics and reduction of development costs. Beneficial results include more stable baseflows in receiving streams, improved ground water recharge, reduced flood flows, reduced pollutant loads, and reduced costs for conveyance and storage.

APPENDIX J STORM WATER MANAGEMENT AGREEMENT

AND DECLARATION OF EASEMENT

MUNI\36570(2)\14D206\71
05/27/14 - Appendix J

Prepared By: _____

_____

_____

_____

Return To: Same

Parcel ID # _____

STORM WATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT

THIS AGREEMENT AND DECLARATION OF EASEMENT made this ____ day of _____, 20__, by and between _____, a _____ with a mailing address at _____ (hereinafter whether singular or plural referred to as the "Grantor"), and **MILLERSVILLE BOROUGH**, Lancaster County, Pennsylvania, a municipal corporation duly organized under the laws of the Commonwealth of Pennsylvania, with its municipal office located at 100 Municipal Drive, Millersville, Pennsylvania (hereinafter referred to as the "Borough").

BACKGROUND

Grantor is the owner of premises located at _____ in the Borough of Millersville, Lancaster County, Pennsylvania, as more specifically described in a deed recorded in Deed or Record Book _____, Volume _____, Page _____, or at Document No. _____ in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, and as shown on the _____,prepared by_____, Drawing No. _____, dated _____, last revised _____ (hereinafter referred to as the "Premises").

Prior to beginning construction on any subdivision or land development or Regulated Activity as defined in the Millersville Borough Storm Water Management Ordinance, Grantor is required, under the Millersville Borough Subdivision and Land Development Ordinance and the Millersville Borough Storm Water Management Ordinance (collectively referred to as the "Ordinance"), to file a plan with Millersville Borough Council. Pursuant to the Ordinance, Grantor must include storm water management data in its subdivision and/or land development application. The Ordinance requires that Grantor's plan reflect and/or be accompanied with supporting documentation which identifies the ownership of, and the method of administering and maintaining, all permanent storm water management facilities. Drainage courses, swales, grassed waterways, storm water inlets, pipes, conduits, detention basins, retention basins, infiltration structures, and other storm water management facilities, including Best Management

Practices facilities ("BMPs"), shall be included under the term "storm water management facilities" in this Agreement and Declaration of Easement.

The purpose of this Agreement and Declaration of Easement is to describe the ownership and maintenance responsibilities for the storm water facilities which will be installed on the Premises and to impose the ownership and maintenance responsibilities upon Grantor, his heirs, personal representatives and assigns and upon successor owners of the Premises, and set forth the rights of the Borough.

NOW, THEREFORE, intending to be legally bound hereby and in consideration of receiving approval of its Subdivision and/or Land Development Plan or its Storm Water Management Plan (hereinafter referred to as the "Final Plan") from Borough Council, and in consideration of receiving permits from the Borough to develop the Premises, Grantor, for Grantor and the heirs, personal representatives, successors and assigns of Grantor, covenant and declare as follows:

1. The storm water facilities will be owned by Grantor, his heirs, personal representatives, successors and assigns.

2. All drainage courses, swales, storm water inlets, pipes, conduits, detention basins BMPs, and other storm water facilities shall be installed, constructed and maintained by Grantor, his heirs, personal representatives, successors and assigns, in a first-class condition in conformance with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, and in a manner sufficient to meet or exceed the performance standards and specifications set forth on the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County. These responsibilities shall include, but not be limited to, the following:

(a) Liming, fertilizing, seeding and mulching of vegetated channels and all other unstablized soils or areas according to the specifications in the "Erosion and Sediment Pollution Control Manual" published by the Pennsylvania Department of Environmental Protection, the Penn State Agronomy Guide, or such similar accepted standard.

(b) Reestablishment of vegetation by seeding and mulching or sodding of scoured areas or areas where vegetation has not been successfully established.

(c) Mowing as necessary to maintain adequate stands of grass and to control weeds. Chemical weed control may be used if federal, state and local laws and regulations are met. Selection of seed mixtures shall be subject to approval by the Borough.

(d) Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in grass waterways, pipes, detention or retention basins, infiltration structures, BMPs, and/or other facilities and thus reducing their capacity.

(e) Removal of silt from all permanent drainage structures, in particular BMPs, in

order to maintain the design storage volumes. Regular programs shall be established and maintained.

(f) Regular inspection of the areas in question to assure proper maintenance and care, including but not limited to proper implementation of BMPs. **ADD ANY SPECIFIC INSPECTION REQUIREMENTS IN THE PCSM PLAN.**

(g) Regular maintenance to insure that all pipes, swales and detention facilities shall be kept free of any debris or other obstruction. **ADD ANY SPECIFIC MAINTENANCE REQUIREMENTS IN THE PCSM PLAN.**

(h) Regular maintenance of all facilities designed to improve water quality to insure that such facility function in accordance with their design. **ADD ANY SPECIFIC MAINTENANCE REQUIREMENTS IN THE PCSM PLAN SUCH AS IF APPLICABLE:** Maintenance of the infiltration bed and infiltration system by mowing grass regularly over the infiltration bed; keeping the yard drains and roof drains free of debris in good repair at all times; flushing the infiltration system using a water hose at the cleanouts once every 90 days to insure the infiltration system is clear of debris; keeping the sumps in the yard inlets and downspout sumps free of debris; and inspecting the infiltration bed four times per year or after each rain event exceeding one inch.

(i) Repair of any subsidence, including subsidence caused by sinkholes.

(j) **IF APPLICABLE:** Replacement of displaced riprap within the outlet energy dissipater immediately after it is displaced, particularly after major storm discharge events.

(k) **IF APPLICABLE:** Vacuum sweeping of areas of porous paving to keep surface free of sediment as needed, typically three to four times per year and maintaining all areas of porous paving free from sealing, surfacing or re-paving with non-porous materials.

(l) **IF APPLICABLE:** Aerate areas of amended soils annually. No impervious surfaces may be places or installed on any area of amended soils.

(m) Removal of trash and debris on a regular basis.

Include a statement that the approved Operations and Maintenance (O&M) Plan is attached as an exhibit if there are any requirements in addition to those in Paragraph 2. Paragraph 2 may be revised to simply incorporate an exhibit if all post construction inspection, operations, and maintenance requirements are included on the exhibit.

Grantor, his heirs, personal representatives, successors and assigns, shall be responsible for performing the foregoing maintenance.

3. Grantor, his heirs, personal representatives, successors and assigns, shall be responsible for maintaining records of all inspections of and maintenance to BMPs and other storm water management facilities. Grantor, his successors and assigns, shall be responsible to prepare all annual BMP and post construction storm water management facility reports detailing the actual inspection and maintenance activities which are required by the terms of any NPDES permit or other state or federal regulation or requirement and submit such

reports to the Borough on or before _____ of each calendar year, together with any fee which the Borough may impose for the review and processing of such report. It is the responsibility of Grantor to inform successors owners of the Premises or any lot created from the Premises of this reporting requirement. The failure to submit an annual report is a violation of this Agreement. The Borough may prepare any required report and recover all costs required to prepare such report from the then-owner of the Premises or any lot created from the Premises, plus a penalty of ten (10%) percent of such costs and may file a municipal claim to secure payment of such costs.

4. Grantor, for himself, his heirs, personal representatives, successors and assigns, agrees that the failure to maintain all drainage courses, swales, storm water inlets, pipes, conduits, detention basins, BMPs, and other storm water management facilities in a first-class condition in conformance with this Agreement and approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, shall constitute a nuisance and shall be abatable by the Borough as such.

5. Grantor, for himself, his heirs, personal representatives, successors and assigns, authorizes the Borough, at any time and from time to time, by its authorized representatives, to enter upon the Premises to inspect the storm water facilities.

6. The Borough may require that Grantor, and assigns or any future owner or occupier of the Premises or any part thereof, take such corrective measures as the Borough may deem reasonably necessary to bring the Premises into compliance with this Agreement and with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County.

7. Upon the failure of the owner or occupier of the Premises or any part thereof to comply with the terms of this Storm Water Management Agreement or to take corrective measures following reasonable notice from the Borough, the Borough, through its authorized representatives, may take such corrective measures as it deems reasonably necessary to bring the Premises into compliance with this Agreement and with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, including, but not limited to, the removal of any blockage or obstruction from drainage pipes, swales, detention basins, and BMPs, and may charge the cost thereof to Grantor, his heirs, personal representatives, successors and assigns, or any owner of the Premises or any part thereof and, in default of such payment, may cause a municipal lien to be imposed upon the Premises or any part thereof. Any municipal lien filed pursuant to this Agreement shall be in the amount of all costs incurred by the Borough, plus a penalty of ten (10%) of such costs, plus the Borough's reasonable attorney's fees.

8. The storm water management facilities have been designed to allow a maximum impervious surface coverage

(a) [if a single lot] of _____ square feet. Any proposal to add additional impervious surface coverage to the Premises will require the submission of a storm

water management plan meeting all requirements of applicable regulations in effect at the time such application is filed.

(b) [if multiple lots with the same coverage] of ____ square feet for each lot to be created from the Premises. If the owner of any lot to be created from the Premises desires to install additional impervious surface coverage, such lot owner must submit an application under the Storm Water Management Ordinance in effect at such time as the application is filed and meet all applicable storm water management regulations.

(c) *[if multiple lots with different coverage limits] as set forth in Exhibit A attached hereto and incorporated herein. If the owner of any lot to be created from the Premises desires to install additional impervious surface coverage beyond that allocated to such lot in Exhibit A, such lot owner must submit an application under the Storm Water Management Ordinance in effect at such time as the application is filed and meet all applicable storm water management regulations.*

9. If ownership or maintenance responsibility of the storm water management facilities is assigned to a home owners' association, condominium unit owners' association, or similar entity, the Borough shall be notified. If such association fails to properly maintain the storm water management facilities, the Borough shall have the same rights granted to municipalities under Section 705 of the Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247, with reference to maintenance of common open space, to maintain the storm water management facilities. Any association so formed shall enter into an agreement with the Borough recognizing its duties and the Borough's rights under this Agreement.

10. Grantor hereby imposes upon the Premises for the benefit of all present and future owners of the Premises or part of the Premises, the Borough, and all other property owners affected by the storm water facilities, the perpetual right, privilege and easement for the draining of storm water in and through the drainage courses, swales, storm water inlets, pipes, conduits, detention basins, BMPs, and other storm water facilities depicted on the plan or plans submitted to the Borough or hereafter made of record and now or hereafter installed on or constructed upon the Premises and, in addition, easements of access to the storm water facilities.

11. Grantor agrees to indemnify the Borough and all of its elected and appointed officials, agents and employees (hereafter collectively referred to as the "Indemnitees") against and hold Indemnitees harmless from any and all liability, loss or damage, including attorneys' fees and costs of investigation and defense, as a result of claims, demands, costs or judgments against Indemnitees which arise as a result of the design, installation, construction or maintenance of the storm water facilities.

12. Grantor's personal liability under this Agreement shall cease at such time as (a) all storm water management facilities have been constructed in accordance with the specifications of the Borough Subdivision and Land Development Ordinance, the Borough Storm Water Management Ordinance and the approved plans; (b) the storm water management facilities have been inspected and approved by the Borough Engineer; (c) all financial security, including any maintenance security, posted by Grantor has been released by the Borough; and (d) Grantor has

transferred all lots to be created from the Premises to third parties. Notwithstanding the foregoing, Grantor's personal liability shall continue for any violations of this Agreement and Declaration of Easement which occurred during the time that Grantor owned the Premises or any lot created from the Premises or in the event the storm water management facilities were not completed, inspected or approved as set forth in (a) through (c) herein.

13. It is the intent of the parties to this Agreement that personal liability and maintenance obligations shall pass to subsequent title owners upon change in ownership of the Premises or any lot created from the Premises, and such subsequent owners shall assume all personal liability and maintenance obligations for the time period during which they hold title. Personal liability shall remain for any violations of this Agreement and Declaration of Easement which occurred during the period in which an owner held title.

14. The Borough may, in addition to the remedies prescribed herein, proceed with any action at law or in equity to bring about compliance with the Borough Storm Water Management Ordinance, the Borough Subdivision and Land Development Ordinance and this Agreement.

15. This Agreement and Declaration of Easement shall be binding upon the Grantor, the successors and assigns of Grantor, and all present and future owners of the Premises or any part thereof and is intended to be recorded in order to give notice to future owners of the Premises of their duties and responsibilities with respect to the storm water facilities. Grantor shall include a specific reference to this Agreement in any deed of conveyance for the Premises or any part thereof.

16. This Agreement and Declaration of Easement may be amended only by written instrument signed on behalf of all owners of the Premises and the Borough.

17. When the sense so requires, words of any gender used in this Agreement and Declaration of Easement shall be held to include any other gender, and the words in the singular number shall be held to include the plural, and vice versa.

[SIGNATURES APPEAR ON FOLLOWING PAGES]

IN WITNESS WHEREOF, the undersigned have caused this Agreement and Declaration to be executed on the day and year first above written.

MILLERSVILLE BOROUGH
Lancaster County, Pennsylvania

Attest:_____
(Assistant) Secretary

By:_____
(Vice) President
Borough Council

[BOROUGH SEAL]

(MUNICIPALITY ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20_____, before me, the undersigned officer, a notary public in and for the aforesaid Commonwealth and County, personally appeared _____ who acknowledged _____self to be (Vice) President of Borough Council of Millersville Borough, Lancaster County, Pennsylvania, and that he/she, as such officer, being authorized to do so, executed the foregoing Storm Water Management Agreement and Declaration of Easement, for the purposes therein contained, by signing the name of such Borough by _____self as such officer.

IN WITNESS WHEREOF, I set my hand and official seal.

_____
Notary Public

My commission expires:

(Individual or Husband and Wife Developer)

Witness:

_____ _____ (SEAL)
(Signature of Individual)

_____ _____ (SEAL)
(Signature of Spouse if Husband and Wife are Co-Developers)

IF APPLICABLE
Trading and doing business as:

_____

(INDIVIDUAL OR HUSBAND AND WIFE DEVELOPER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this the ____ day of _____, 20____, before me, the subscriber, a notary public in and for the aforesaid Commonwealth and County, came the above-named _____, known to me, (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed on the within instrument and acknowledged the foregoing Storm Water Management Agreement and Declaration of Easement to be _____ act and deed and desired the same to be recorded as such.

Witness my hand and notarial seal.

_____
Notary Public

My commission expires:

(Partnership Developer*)

_____
(Name of Partnership)

Witness:

_____ By:_____(SEAL)
Partner

_____ By:_____(SEAL)
Partner

_____ By:_____(SEAL)
Partner

*All Partners must execute this Agreement

(PARTNERSHIP DEVELOPER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20____, before me, a notary public, the undersigned officer, personally appeared _____ ,who acknowledged themselves to be all of the partners of _____,partnership, and that they, as such partners, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the partnership by themselves as such partners.

IN WITNESS WHEREOF, I have hereunto set my hand and notarial seal.

_____
Notary Public

My commission expires:

(Corporation Developer)

_____
(Name of Corporation)

ATTEST:

By:_____ By:_____
(Assistant) Secretary (Vice) President

[CORPORATE SEAL]

(CORPORATE DEVELOPER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20____, before me, a notary public, the undersigned officer, personally appeared _____ who acknowledged _____self to be the _____ of _____ a corporation, and that as such officer being authorized to do so, acknowledged the foregoing instrument for the purpose therein contained, by signing the name of the corporation by _____ self as _____.

IN WITNESS WHEREOF, I set my hand and official seal.

_____
Notary Public

My commission expires:

(Limited Liability Company Landowner*)**

(Name of Limited Liability Company)

Witnesses:

_____ By:
Member

_____ By:
Member

_____ By:
Member

***All members must sign.

(LIMITED LIABILITY COMPANY LANDOWNER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20____, before me, the undersigned officer, personally appeared _____, who acknowledged themselves to be all of the members of _____, limited liability company, and that they as such members, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of said limited liability company by themselves as such members.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My Commission Expires:

JOINDER BY MORTGAGEE

_____ ("Mortgagee"), as holder of a certain mortgage on the premises of *[NAME OF GRANTOR]* within Millersville Borough, Lancaster County, Pennsylvania, described in the Deed recorded _____ in/at _____, in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, which mortgage, in the amount of $_____, dated _____, and recorded at _____ in the Recorder of Deeds Office in and for Lancaster County, Pennsylvania, as well as any other mortgages which Mortgagee may now or hereafter hold on the Premises (all such mortgages hereinafter collectively referred to as the "Mortgages"), joins in, consents to, and expressly approves the grant of easements and other rights and privileges described in the attached Storm Water Management Agreement and Declaration of Easement (the "Agreement").

The Mortgagee, for itself, its successors and assigns (which shall include any assignee of the Mortgages and any purchaser of the Premises at a sale in foreclosure of the Mortgages or otherwise), hereby covenants and agrees that the rights and privileges herein granted with respect to the Premises shall not be terminated or disturbed by reason of any foreclosure or other action which may be instituted by the Mortgagee, its successors and assigns, as a result of any default under the Mortgages or the debt instruments that such Mortgages secure. Mortgagee by consenting to the Agreement shall not by virtue of its interest as Mortgagee be deemed to have undertaken any of the obligations of the Grantor under the Agreement, including but not limited to construction, maintenance, inspection or indemnification.

IN WITNESS WHEREOF, Mortgagee hereby joins in the execution of the Agreement as of this _____ day of _____, 20___.

_____

(Name of Mortgagee)

ATTEST: _____ By: _____

[SEAL]

(MORTGAGEE ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this, the _____ day of _____, 20____, before me, a notary public, the undersigned officer, personally appeared _____, who acknowledged ____self to be the _____ of _____ a corporation, and that as such officer being authorized to do so, acknowledged the foregoing instrument for the purpose therein contained by signing the name of the Bank by _____self as _____.

IN WITNESS WHEREOF, I set my hand and official seal.

_____
Notary Public

My Commission Expires:

CONSENT AND JOINDER OF HOMEOWNERS' ASSOCIATION

The undersigned hereby consents to and joins in the attached Storm Water Management Agreement and Declaration of Easement (the "Agreement"). The undersigned shall maintain all storm water management facilities in accordance with the terms and provisions of the Agreement and in accordance with any separate Declaration of Restrictions. The undersigned specifically agrees that the Borough shall have the rights referred to in Paragraph 9 of the Agreement.

IN WITNESS WHEREOF, the undersigned, intending to be legally bound, hereby consents to and joins in the Agreement.

_____
(Name of Homeowners' Association or similar entity)

Attest:_____
(Assistant) Secretary

By:_____
(Vice) President

[SEAL]

(HOMEOWNERS' ASSOCIATION ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20___, before me, a notary public, the undersigned officer, personally appeared _____ who acknowledged _____self to be the _____of _____ a nonprofit corporation, and that as such officer being authorized to do so, acknowledged the foregoing instrument for the purpose therein contained, by signing the name of the corporation by _____self as_____.

IN WITNESS WHEREOF, I set my hand and official seal.

_____

Notary Public

My commission expires:

APPENDIX K SMALL PROJECT STORM WATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT

MUNI#36570(2)\140317\1
05/27/14 - Appendix K

Prepared By: _____
_____
_____
_____

Return To: Same
Parcel ID # _____

SMALL PROJECT STORM WATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT

THIS AGREEMENT AND DECLARATION OF EASEMENT made this _____ day of _____, 20 ____, by and between _____ with a mailing address at _____ (hereinafter, whether singular or plural, referred to as the "Grantor"), and **MILLERSVILLE BOROUGH**, Lancaster County, Pennsylvania, a municipal corporation duly organized under the laws of the Commonwealth of Pennsylvania, with its municipal office located at 100 Municipal Drive, Millersville, Pennsylvania 17551 (hereinafter referred to as the "Borough").

BACKGROUND

Grantor is the owner of premises located at _____, in the Borough of Millersville, Lancaster County, Pennsylvania, as more specifically described in a deed recorded in Deed or Record Book_____, Volume _____, Page _____, or at Document No. _____ in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania (hereinafter referred to as the "Premises"). Grantor is proceeding to build on and develop the Premises in such manner as requires the submission of a Small Project Stormwater Site Plan pursuant to the Millersville Borough Stormwater Management Ordinance (hereinafter "SWM Ordinance").

Grantor's Small Project Stormwater Site Plan, which is expressly made a part hereof, as approved or to be approved by the Borough, provides for detention of stormwater within the confines of the Premises through the use of Stormwater Best Management Practices (Stormwater BMPs).

In the interest of protecting the health, safety, and welfare of the residents of the Borough, the Borough requires that on-site Stormwater BMPs as shown on the Small Project Stormwater Site Plan be constructed and adequately maintained by Grantor, his heirs, personal

representatives, successors and assigns. Any additional requirements imposed by the Borough are considered part of the Small Project Stormwater Site Plan.

The purpose of this Agreement and Declaration of Easement is to describe the ownership and maintenance responsibilities for the on-site Stormwater BMPs, which will be located on the Premises and to impose the ownership and maintenance responsibilities upon Grantor, his heirs, personal representatives and assigns and upon successor owners of the Premises, and set forth the rights of the Borough.

NOW, THEREFORE, intending to be legally bound hereby and in consideration of receiving approval of its Small Project Stormwater Site Plan from Borough Council, and in consideration of receiving permits from the Borough to develop the Premises, Grantor, for Grantor and the heirs, personal representatives, successors and assigns of Grantor, covenant and declare as follows:

1. In accordance with the specifications identified within the Small Project Stormwater Site Plan, Grantor shall construct the on-site Stormwater BMPs, which will be owned by Grantor, his heirs, personal representatives, successors and assigns.

2. Grantor, his heirs, personal representatives, successors and assigns, shall adequately maintain the Stormwater BMPs, including all pipes and channels built to convey stormwater, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance is herein defined as good working condition so that these facilities are performing their design functions.

3. Grantor, his heirs, personal representatives, successors and assigns, shall inspect the Stormwater BMPs after all rainfall events exceeding one inch of precipitation in a 24-hour period.

4. Grantor agrees that this Agreement creates upon the Premises, for the benefit of all present and future owners of the Premises or part of the Premises, the Borough, and all other property owners affected by the storm water facilities, the perpetual right, privilege and easement for the draining of storm water in and through the Stormwater BMPs, and other stormwater facilities depicted on the Small Project Stormwater Site Plan submitted to the Borough by Grantor.

5. Grantor, his heirs, personal representatives, successors and assigns, hereby grant permission to the Borough, by its authorized agents and employees, to enter upon the Premises without prior notification at reasonable times and upon presentation of proper identification to inspect the Stormwater BMPs whenever the Borough deems necessary.

6. In the event the Grantor, or his heirs, personal representatives, successors and assigns, fails to maintain the Stormwater BMPs as shown on the Small Project Stormwater Site Plan and in good working condition, the Borough may enter upon the Premises and take whatever action it deems necessary to maintain said Stormwater BMPs and to charge the costs of such repairs to the Grantor, his heirs, personal representatives, successors and assigns. This provision shall not be construed to allow the Borough to erect any structure of permanent nature on the Premises unless such structure(s) were part of the approved Small Project Stormwater Site Plan. It is expressly understood and agreed that the Borough is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Borough.

7. In the event that the Borough, 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 Grantor shall reimburse the Borough within thirty (30) days of receipt of invoice for all expenses incurred. The Borough has the right to file a municipal lien for unpaid costs and expenses that have not been reimbursed thirty (30) days after receipt of invoice. Any municipal lien filed pursuant to this Agreement shall be in the amount of all costs incurred by the Borough, plus a penalty of ten percent (10%) of such costs, plus the Borough's reasonable attorneys' fees.

8. The intent and purpose of this Agreement is to ensure the proper maintenance of the Stormwater BMPs by the Grantor. This Agreement shall not be deemed to create any additional liability upon any party for damage(s) alleged to result from or be caused by nonpoint source pollution runoff. Furthermore, this Agreement imposes no liability of any kind whatsoever on the Borough, or its elected and appointed officials, agents and employees.

9. Grantor agrees to indemnify the Borough and all of its elected and appointed officials, agents and employees (hereafter collectively referred to as the "Indemnitees") against and hold Indemnitees harmless from any and all liability, loss or damage, including attorneys' fees and costs of investigation and defense, as a result of claims, demands, costs or judgments against Indemnitees which arise as a result of the design, installation, construction or maintenance of the Stormwater BMPs or any omissions relating thereto. In the event that a claim arising from Grantor's actions or omissions relating to the installation, construction or maintenance of Stormwater BMPs on the Premises is asserted against Indemnitees, the Borough shall promptly notify Grantor, and Grantor shall defend, at his own expense, any suit based on the claim. If any judgment against Indemnitees shall be entered as a result of such claim, the Grantor agrees to indemnify Indemnitees and pay all costs and expenses stemming from said judgment.

10. This Agreement is not intended to, nor shall operate to limit the Borough's rights and remedies under the SWM Ordinance. The Borough may, in addition to the remedies prescribed

herein, proceed with any action at law or in equity to bring about compliance with the Borough SWM Ordinance and this Agreement.

11. This Agreement shall be binding on Grantor, his heirs, personal representatives, administrators, executors, assigns, and any other successors in interests, in perpetuity.

IN WITNESS WHEREOF, the undersigned have caused this Agreement and Declaration to be executed on the day and year first above written.

MILLERSVILLE BOROUGH
Lancaster County, Pennsylvania

Attest:_____ By:_____
(Assistant) Secretary (Vice) President
Borough Council

[BOROUGH SEAL]

Witness: GRANTOR:

_____ _____ (SEAL)

Print Name: _____

_____ _____ (SEAL)

Print Name: _____

All property owners must sign the Small Project Storm Water Management Agreement in the presence of a notary public who must complete the acknowledgment on the following page. If the property is jointly owned, both must sign.

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____day of _____, 20___, before me, the undersigned officer, a notary public in and for the aforesaid Commonwealth and County, personally appeared _____, who acknowledged himself/herself to be (Vice) President of the Borough Council of Millersville Borough, Lancaster County, Pennsylvania, and that he/she, as such officer, being authorized to do so, executed the foregoing Small Project Storm Water Management Agreement and Declaration of Easement for the purposes therein contained by signing the name of such Borough by himself/herself as such officer.

IN WITNESS WHEREOF, I set my hand and official seal.

Notary Public

My commission expires:

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

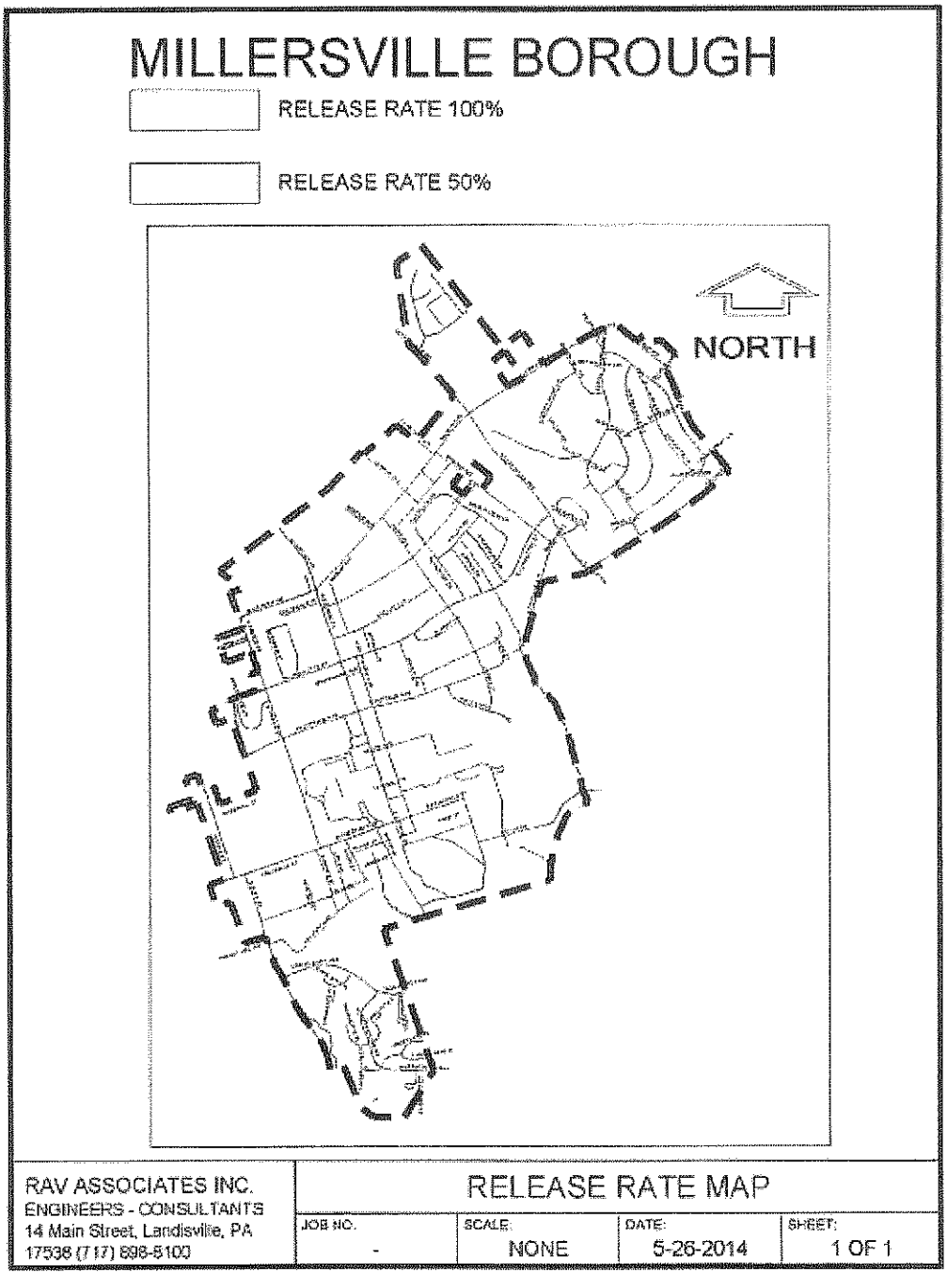
On this _____ day of _____, 20___, before me, the subscriber, a notary public, in and for the aforesaid Commonwealth and County, came the above-named _____, known to me (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed on the within instrument, and acknowledged the foregoing Small Project Storm Water Management Agreement and Declaration of Easement to be his/her/their act and deed and desired the same to be recorded as such.

Witness my hand and notarial seal.

Notary Public

My commission expires:

APPENDIX L RELEASE RATE MAP



Ordinance Certification Letter

LAW OFFICES

MORGAN, HALLGREN, CROSSWELL & KANE, P.C.

GEORGE J. MORGAN
CARL R. HALLGREN
WILLIAM C. CROSSWELL
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700 NORTH DUKE STREET

TELEPHONE 299-5251
AREA CODE 717

FAX (717) 299-6170

E-MAIL: attorneys@mhck.com

October 28, 2014

Maria Bebenek, P.E., Clean Water Program Manager
Pennsylvania Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200

Re: Millersville Borough, Lancaster County/Municipal Separate Storm Sewer System (MS4) Annual/Progress Report
Our File No. 36570

Dear Ms. Bebenek:

This firm serves as Solicitor for Millersville Borough, Lancaster County (the "Borough"). The Borough has been issued NPDES Permit No. PAG133587 and is in the process of submitting the Municipl Separate Storm Sewer System (MS4) Annual/Progress Report to the Department. MCM #5, Post-Construction Storm Water Management in New Development and Redevelopment, BMP #4, requests to know whether the Borough has submitted an ordinance to address post-construction stormwater runoff from new and redevelopment projects to the Department with a letter from the Solicitor that certifies the enactment of such an ordinance.

To implement the Lancaster County Act 167 Stormwater Management Plan, Millersville Borough enacted a stormwater management ordinance on May 27, 2014, as Ordinance No. 2014-02. Department representatives involved in the approval of the Lancaster County Act 167 Plan had indicated to municipal representatives that it was not necessary to forward copies of enacted ordinances to the Department, so the Borough did not forward a copy of Ordinance No. 2014-02 at that time.

Enclosed please find a copy of the Millersville Borough Storm Water Management Ordinance, Ordinance No. 2014-02, which is codified as Chapter 315 of the Borough's Code of Ordinances. The Borough recorded this ordinance in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, as required by the Borough Code when only a summary of a legal advertisement is published. The enclosed copy of the ordinance indicates that it was recorded at Document No. 6147060 on June 4, 2014.

If you have any questions concerning the enclosed ordinance, please contact me.

Very truly yours,

Josele Cleary

JC:sle
MUNI\36570(29)\141027\71

Enclosure

cc: Edward J. Arnold, Manager (via e-mail)

Attachment 4 – MCM #6 Documentation

Employee Training Documentation

EFC

Certificate of Attendance

This certifies that

Andrew Boxleitner

Has attended the technical presentation

Pennsylvania MS4 Phase II Financing Forum

Offered by the Environmental Finance Center on March 14, 2013

at the Lancaster Farm and Home Center

Duration: 3 hours

Environmental Finance Center

EFC

Certificate of Attendance

This certifies that

Andrew Boxleitner

Has attended the technical presentation

Pennsylvania MS4 Phase II Financing Forum

Offered by the Environmental Finance Center on March 21, 2013

at the Lancaster Farm and Home Center

Duration: 3 hours

Environmental Finance Center

05 JUN 13

GOODHOUSE KEEPING | SAFETY MTG

[illegible]
Robert [illegible]
Chet Kreich
Barry Brunsman
Erin Bachman
Kyle Mills

- G.H.K. TOPICS
  - FUELING
  - EQUIP CLEANING
  - SHOP CLEANING

- SAFETY
  - WORKING IN HIGH TEMP | DRINK WATER
  - SAFETY GLASSES
  - EAR PROTECTION
  - TRAFFIC CONTROL

- OTHER TOPICS

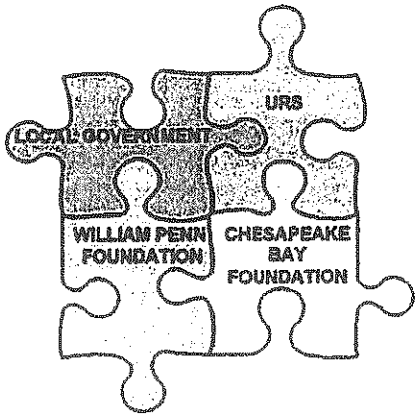
02 JAN 14

GOODHOUSE KEEPING/SAFETY MTG

- G.H.K.
  - SALTING
  - EQUIP CLEANING
  - SPRING INLET CLEANING
  - SPRING STREET SWEEPING

- SAFETY
  - PLOW SAFETY
  - CLASS III VEST
  - SIGN REFLECTIVITY
  - SAFETY GRANT IDEAS
  - 2005 UTIL TRK ISSUE FM FORD
  - ~~SAFETY GRANT IDEAS~~
  - ORANGE VINIT PINS ON DUMPS

- OTHERS



MS4 PERMIT REQUIREMENTS:

PUTTING THE PIECES TOGETHER

Thanks to a generous grant from the William Penn Foundation, the Chesapeake Bay Foundation will be hosting two free MS4 workshops in your local area.

URS Corporation will be presenting information to local Government Officials and pertinent staff, including Public Works personnel.

Each workshop will have two sessions and offered at two different locations:

Monday, January 27, 2014
Farm & Home Center
1383 Arcadia Road, Lancaster

Wednesday, January 29, 2014
Radisson Hotel
1150 Camp Hill Bypass, Camp Hill

"MS4-Understanding the Overall Puzzle"
9:00 am-12:00 pm session for Government Officials & Staff
This session will provide an overview of the Chesapeake Bay TMDL and MS4 permit requirements. Participants will also discuss resources that are available to help communities comply with those requirements.

FREE LUNCH PROVIDED

"MS4-Connecting the Pieces"
1:00-3:00 pm session for Staff and Public Works Departments
This session will provide a more detailed discussion of stormwater management. Many types of BMPs (traditional, green infrastructure, non-structural) will be discussed as alternatives for managing your stormwater runoff.

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

URS

WILLIAM PENN FOUNDATION

MS4 WORKSHOP RESERVATION FORM

Reservations are required to ensure we have ample lunch and space. If you should have any questions, please call Debbie Pfeil at (302) 547-6068. Please print clearly and return this form no later than **Friday, January 17th** via email to debbie.pfeil@urs.com or fax to (302) 781-5901.

Please check those you will participate in:

Monday, January 27 Lancaster Workshop

X am session (9-12) X pm session (1-3) X lunch (12-1)

Wednesday, January 29 Camp Hill Workshop

☐ am session (9-12) ☐ pm session (1-3) ☐ lunch (12-1)

Name: ANDY BOXLEITNER

Representing: MILLERSVILLE BOROUGH

Title: STREET SUPT. Phone: 717 872 4645 x107

Email: aboxleitner@millersvilleborough.org

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

URS

WILLIAM PENN FOUNDATION

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Name: ED ARNOLD

Representing: MILLERSVILLE BOROUGH

Title: BORO MANAGER Phone: 717 872 4645

Email: earnold@millersvilleborough.org

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

URS

WILLIAM PENN FOUNDATION

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Name: BOB FRT

Representing: MILLERSVILLE BOROUGH

Title: _____ Phone: 717 872 4645

Email: _____

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

URS

WILLIAM PENN FOUNDATION

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Name: KYLE MILLER

Representing: MILLERSVILLE BOROUGH

Title: _____ Phone: 7178724645

Email: _____

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

URS

1345

25 FEB 14

GOOD HOUSEKEEPING / SAFETY MTG

- G.H.K
  - SPRING CLEAN UP
  - STORM H_2O TOOLBOX TALKS (GO OVER/DISCUSS)
- SAFETY
  - REST FOR PLOWING
  - CHAIN SAW SAFETY
- OTHERS

Robert L B
Chris Bachman
Chet Kreider

STORMWATER MANAGEMENT TOOLBOX TALKS

MODULE NO.: 1	TITLE: Vehicle and Equipment Fueling

INTRODUCTION:	Spills and leaks associated with fueling activities can pollute local waterways through contact with stormwater run-off, or directly to local streams through the storm sewer. Spills and leaks from fueling is a common occurrence that can be reduced through proper practices.

PRIMARY POINTS:

- Impervious surfaces (such as concrete or asphalt) can collect spills or leaks from fueling that may pollute waterways and streams when exposed to stormwater runoff.
- A spill kit should be readily available to contain and clean up spills and leaks.

DISCUSSION ITEMS:

- Do not top off fuel tanks
- Do not wash down fueling areas, use dry cleaning methods such as rags and brooms
- Keep drip pans under vehicles with leaks
- Do not leave active fueling operations unattended
- Ensure spill kit is readily available prior to fueling
- Do not fuel over or near storm drain inlets
- Do not fuel over pervious surfaces (including lawns) to reduce the potential for ground infiltration
- Report leaking vehicles, spills, or damaged fueling equipment

NOTES