TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT FOR DISCHARGES FROM
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

General Discharge Permit No. 13-IM-5500
General NPDES No. MDR055500

FISCAL YEAR 2019 ANNUAL REPORT

YEAR 1

October 17, 2019

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER AND SCIENCE ADMINISTRATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

GENERAL DISCHARGE PERMIT NO. 13-IM-5500
GENERAL NPDES NO. MDR055500

Final Determination:	April 27, 2018
Effective Date:	October 31, 2018
Expiration Date:	October 30, 2023

This National Pollutant Discharge Elimination System (NPDES) general permit covers small municipal separate storm sewer systems (MS4s) in certain portions of the State of Maryland. MS4 owners and operators to be regulated under this general permit must submit a Notice of Intent (NOI) to MDE by October 31, 2018. An NOI serves as notification that the MS4 owner or operator intends to comply with the terms and conditions of this general permit.

APPENDIX D

Municipal Small MS4 Progress Report

Maryland Department of the Environment (MDE)

National Pollutant Discharge Elimination System (NPDES)
Small Municipal Separate Storm Sewer Systems (MS4) General Permit

This Progress Report is required for those jurisdictions covered under General Discharge Permit No. 13-IM-5500. Progress Reports must be submitted to:

Maryland Department of the Environment, Water and Science Administration
Sediment, Stormwater, and Dam Safety Program
1800 Washington Boulevard, Suite 440, Baltimore, MD 21230-1708
Phone: 410-537-3543 FAX: 410-537-3553
Web Site: www.mde.maryland.gov

Contact Information

Permittee Name:	Town of Perryville
Responsible Personnel:	Denise Breder
Mailing Address:	515 Broad Street; P.O. Box 773
	Perryville, MD 21903
Phone Number(s):	410-642-6066
Email address:	dbreder@perryvillemd.org
Additional Contact(s):	Ralph Ryan
Mailing Address:	515 Broad Street; P.O. Box 773
	Perryville, MD 21903
Phone Number(s):	410-642-6068
Email address:	rjryan@perryvillemd.org

Signature of Responsible Personnel

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 gather and evaluate 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 knowing violations.

Denise Breder		10/22/19
Printed Name	Signature	Date

Reporting Period (State Fiscal Year): FY19; July 1, 2018 - June 30, 2019

Due Date: 10/31/19 **Date of Submission:** 10/31/19

Type of Report Submitted:

Impervious Area Restoration Progress Report (Annual): ☑

Six Minimum Control Measures Progress (Years 2 and 4): ☐

Both: ☐

Permittee Information:

Renewal Permittee: ☐

New Permittee: ☑

Compliance with Reporting Requirements

Part VI of the Small MS4 General Discharge Permit (No. 13-IM-5500) specifies the reporting information that must be submitted to MDE to demonstrate compliance with permit conditions. The specific information required in this MS4 Progress Report includes:

1. Annual: Progress toward compliance with impervious area restoration requirements in accordance with Part V of the general permit. All requested information and supporting documentation must be submitted as specified in Section I of the Progress Report.
2. Years 2 and 4: Progress toward compliance with the six minimum control measures in accordance with Part IV of the general permit. All requested information and supporting documentation shall be reported as specified in Section II of the Progress Report. MDE may request more frequent reporting and/or a final report in year 5 if additional information is needed to demonstrate compliance with the permit.

Instructions for Completing Appendix D Reporting Forms

The reporting forms provided in Appendix D allow the user to electronically fill in answers to questions. Users may enter quantifiable information (e.g., number of outfalls inspected) in text boxes. When a more descriptive explanation is requested, the reporting forms will expand as the user types to allow as much information needed to fully answer the question. The permittee must indicate in the forms when attachments are included to provide sufficient information required in the MS4 Progress Report.

Section I: Impervious Area Restoration Reporting Form

Section I: Impervious Area Restoration Reporting

1. a. Was the impervious area baseline assessment submitted in year 1?
☑ Yes ☐ No
The Impervious Area Baseline Assessment is discussed in the "Impervious Area Restoration Work Plan – Year 1 Summary" submitted as **Attachment A** of this Annual Report.

   b. If No, describe the status of completing the required information and provide a date at which all information required by MDE will be submitted:

   c. Has the baseline been adjusted since the previous reporting year?
☐ Yes ☑ No
N/A

2. Complete the information below based on the most recent data:

   Total impervious acres of jurisdiction covered under this permit: 322.49

   Total impervious acres treated by stormwater water quality best management practices (BMPs): 125.08

   Total impervious acres treated by BMPs providing partial water quality treatment (multiply acres treated by percent of water quality provided): 1.67

   Total impervious acres treated by nonstructural practices (i.e., rooftop disconnections, non-rooftop disconnections, or vegetated swales): N/A
An analysis of these practices will be considered in Year 2.

   Total impervious acres untreated in the jurisdiction: 195.74

   Twenty percent of this total area (this is the restoration requirement): 39.15

   Verify that all impervious area draining to BMPs with missing inspection records is not considered treated. Describe how this information was incorporated into the overall analysis:
A best case scenario was submitted with this report, meaning all BMPs were assumed to be performing as designed. In FY 2020, the Town of Perryville and Cecil County will coordinate to determine which BMPs have missing inspection reports and which BMPs need to be maintained. If it is determined that some BMP treatment areas need to be removed due to failing performance or missing inspections, the numbers above will be revised in the FY 2020 Annual Report.

Section I: Impervious Area Restoration Reporting

2. Has an Impervious Area Restoration Work Plan been developed and submitted to MDE in accordance with Part V.B, Table 1 of the permit or other format?
☑ Yes ☐ No
The "Impervious Area Restoration Work Plan – Year 1 Summary" is submitted as **Attachment A** of this Annual Report.

   Has MDE approved the work plan?
☐ Yes ☑ No

   If the answer to either question is No, describe the status of submitting (or resubmitting) the work plan to MDE and provide a date at which all outstanding information will be available:
The "Impervious Area Restoration Work Plan – Year 1 Summary" is submitted as **Attachment A** of this Annual Report.

   Describe progress made toward restoration planning, design, and construction efforts and describe adaptive management strategies necessary to meet restoration requirements by the end of the permit term:
The Town of Perryville has begun identifying potential projects. A consulting firm was hired to calculate baseline impervious surface areas. The Town will continue to assess projects and timelines during Year 2.

3. Has a Restoration Schedule been completed and submitted to MDE in accordance with Part V.B, Table 2 of the permit?
☐ Yes ☑ No
The Town of Perryville is working on the Restoration Schedule in Year 2.

   In year 5, has a complete restoration schedule been submitted including a complete list of projects and implementation dates for all BMPs needed to meet the twenty percent restoration requirement?
☐ Yes ☐ No
N/A

   Are the projected implementation years for completion of all BMPs no later than 2025?
☑ Yes ☐ No
The Town of Perryville has begun identifying potential projects, and will continue to assess projects and timelines during Year 2.

   Describe actions planned to provide a complete list of projects in order to achieve compliance by the end of the permit term:
The Town of Perryville is developing the Project List in Year 2.

   Describe the progress of restoration efforts (attach examples and photos of proposed or completed projects when available):
The Town of Perryville is developing the Project List in Year 2.

Section I: Impervious Area Restoration Reporting

4. Has the BMP database been submitted to MDE in Microsoft Excel format in accordance with Appendix B, Tables B.1.a, b, and c?
   ☑ Yes ☐ No
   The BMP database is submitted as **Attachment B** of this Annual Report.

   Is the database complete?
   ☐ Yes ☑ No

   If either answer is No, describe efforts underway to complete all data fields, and a date that MDE will receive the required information:
   Drainage areas for each BMP were calculated. The Town of Perryville will work with Cecil County to provide a complete BMP database by the FY 2020 Annual Report.

5. Provide a summary of impervious area restoration activities planned for the next reporting cycle (attach additional information if necessary):
   A consulting firm was hired to perform the impervious area restoration activities for Year 2. The Scope of Work for these activities is provided as **Attachment C**.

6. Describe coordination efforts with other agencies regarding the implementation of impervious area restoration activities:
   The Town of Perryville has had discussions with other permittees, and no partnerships have been developed to date. Although it is possible opportunities may develop, at this time the Town feels that partnerships are unlikely to develop.

7. List total cost of developing and implementing the impervious area restoration program during the permit term:
   The total cost is unknown at this time.

Section II: Minimum Control Measures Reporting Forms

Not required in Year 1 of the Permit.

MCM #1: Public Education and Outreach

1. Does the permittee maintain a process and phone number for the public to report water quality complaints?
   ☐ Yes ☐ No

   Number of complaints received: ☐

   Describe the actions taken to address the complaints:

2. Describe training to employees to reduce pollutants to the MS4:

3. Describe the target audience(s) within the jurisdiction:

4. Are examples of educational/training materials attached with this report?
   ☐ Yes ☐ No

   Provide the number and type of educational materials distributed:
   Describe how the public outreach program is appropriate for the target audience(s):

5. Describe how stormwater educational materials were distributed to the public (e.g., newsletters, website):

6. Describe how educational programs facilitated efforts to reduce pollutants in stormwater runoff:

7. Provide a summary of the activities planned for the next reporting cycle:

8. List the total cost of implementing this MCM over the permit term:

MCM #2: Public Involvement and Participation

1. Describe how the public involvement and participation program is appropriate for the target audience(s):

2. Quantify and report public involvement and participation efforts shown below where applicable.

   Number of participants at public events:

   Quantity of trash and debris removed at clean up events:

   Number of employee volunteers participating in sponsored events:

   Number of trees planted:

   Length of stream cleaned (feet):

   Number of storm drains stenciled:

   Number of public notices published to facilitate public participation:

   Number of public meetings organized:

   Total number of attendees at all public meetings:

   Describe the agenda, items discussed, and collaboration efforts with interested parties for public meetings:

   Describe how public comments have been incorporated into the permittee's MS4 program, including water quality improvement projects to address impervious area restoration requirements:

   Describe any additional events and activities if applicable:

MCM #2: Public Involvement and Participation

3. Provide a summary of activities planned for the next reporting cycle:
4. List the total cost of implementing this MCM for the permit term:

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

1. Does the permittee maintain a map of the MS4 owned or operated by the permittee, including stormwater conveyances, outfalls, stormwater best management practices (BMPs), and waters of the U.S. receiving stormwater discharges?
   ☐ Yes ☐ No

   If Yes, attach the map to this report and provide a progress update on any features that are still being mapped. If No, detail the current status of map development and provide an estimated date of submission to MDE:

2. Does the permittee have an ordinance, or other regulatory means, that prohibits illicit discharges?
   ☐ Yes ☐ No

   If Yes, describe the means for enforcement utilized by the permittee (alternatively, a link may be provided to the permittee's webpage where this information is available). If No, describe the permittee's plan, including approximate time frame, to establish a regulatory means to prohibit illicit discharges:

3. Describe the process the permittee utilizes for gaining access to private property to investigate and eliminate illicit discharges:

4. Did the permittee submit to MDE standard operating procedures (SOPs) in accordance with Part IV.C of the permit?
   ☐ Yes ☐ No

   If No, provide a proposed date that SOPs will be submitted to MDE. MDE may require more frequent reports for delays in program development:

   Did MDE approve the submitted SOPs?
   ☐ Yes ☐ No

   If No, describe the status of requested SOP revisions and approximate date of resubmission for MDE approval:

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

5. Describe how the permittee prioritized screening locations in areas of high pollutant potential and identify the areas within which screenings were conducted during this reporting period:

6. Answers to the following questions must reflect this two-year reporting period.

   How many outfalls are identified on the map?

   How many outfalls were required to be screened for dry weather flows to meet the minimum numeric requirement (i.e., 20% of total outfalls, up to 100)?

   How many outfalls were screened for dry weather flows?

   Per the permittee's SOP, how frequently were outfalls required to be screened?

   At what frequency were outfalls screened during the reporting period?

   How many dry weather flows were observed?

   If dry weather flows were observed, how many were determined to be illicit discharges?

   Describe the investigation process to track and eliminate each suspected illicit discharge and report the status of resolution:

7. Describe maintenance or corrective actions undertaken during this reporting period to address erosion, debris buildup, sediment accumulation, or blockage problems:

8. Is the permittee maintaining all IDDE inspection records and are they available to MDE during site inspections?
   ☐ Yes ☐ No

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

9. If spills, illicit discharges, and illegal dumping occurred during this reporting period, describe the corrective actions taken, including enforcement activities, and indicate the status of resolution:

10. Attach to this report specific examples of educational materials distributed to the public related to illicit discharge reporting, illegal dumping, and spill prevention. If these are not available, describe plans to develop public education materials and submit examples with the next Progress Report:

11. Specify the number of employees trained in illicit discharge detection and spill prevention:

12. Provide examples of training materials. If not available, describe plans to develop employee training and submit examples with the next Progress Report:

13. List the cost of implementing this MCM during this permit term:

MCM #4: Construction Site Stormwater Runoff Control

Erosion & Sediment Control Program Procedures, Ordinances, and Legal Authority

1. Does the permittee have an MDE approved ordinance?
   ☐ Yes ☐ No

   Has the permittee submitted modifications to MDE?
   ☐ Yes ☐ No

   Has the adopted ordinance been submitted to MDE?
   ☐ Yes ☐ No

   If No, is the adopted ordinance attached?
   ☐ Yes ☐ No

2. Does the permittee rely on the County, local Soil Conservation District, or MDE to perform any or all requirements for an acceptable erosion and sediment control program? ☐ Yes ☐ No

   If Yes, check all that apply:
   ☐ Plan Review and Approval
   ☐ Construction Inspections
   ☐ Enforcement

3. Does the permittee have a process to ensure that all necessary permits for a proposed development have been obtained prior to issuance of a grading or building permit?
   ☐ Yes ☐ No

   Explain how the permittee ensures all permits are in place:

Erosion & Sediment Control Program Implementation Information

1. Does the permittee have a process for receiving, investigating, and resolving complaints from interested parties related to construction activities and erosion and sediment control?
   ☐ Yes ☐ No

   Describe the process:

   Provide a list of all complaints and summary of actions taken to resolve them:

MCM #4: Construction Site Stormwater Runoff Control

2. Total number of active construction projects within the reporting period: ☐

   Provide a list of all construction projects and disturbed areas:

   Does the permittee submit grading reports to MDE (only applies if the permittee has an MDE approved ordinance)?
   ☐ Yes ☐ No ☐ N/A

3. Total number of violation notices issued related to this MCM within the permit area (report total number whether the permittee or another entity performs inspections):
   ☐

   Describe the status of enforcement activities:

   Describe how the permittee communicates and collaborates with the enforcement authority for violations within the permit area. Include measures taken by the permittee such as suspending or denying a building or grading permit in order to prevent the discharge of pollutants into the MS4:

   Are erosion and sediment control inspection records retained and available to MDE during field review of local programs?
   ☐ Yes ☐ No

   If No, explain:

4. Number of staff trained in MDE's Responsible Personnel Certification:
   ☐

5. Describe the coordination efforts with other entities regarding the implementation of this MCM:

6. List the total cost of implementing this MCM over the permit term:

MCM #5: Post Construction Stormwater Management

Stormwater Management Program Procedures, Ordinances, and Legal Authority

1. Does the permittee have an MDE approved ordinance? ☐ Yes ☐ No

   Has the permittee submitted modifications to MDE? ☐ Yes ☐ No

   Has the adopted ordinance been submitted to MDE? ☐ Yes ☐ No

   If No, is the adopted ordinance attached? ☐ Yes ☐ No

2. Does the permittee have a memorandum of understanding (MOU) with the County to perform any or all requirements for an acceptable stormwater program?
   ☐ Yes ☐ No

   If Yes, check all that apply:
   - ☐ Plan Review and Approval
   - ☐ First Year Post Construction Inspections
   - ☐ As-Built Plan Approval
   - ☐ Post Construction Triennial Inspections
   - ☐ Enforcement
   - ☐ BMP Tracking and Reporting

Stormwater Management Program Implementation Information

1. Has an Urban BMP database been submitted in accordance with the database structure in Appendix B, Tables B.1.a, b, and c as a Microsoft Excel file?
   ☐ Yes ☐ No

   Describe the status of the database and efforts to complete all data fields:

2. Total number of triennial inspections performed: _____

   Total number of BMPs jurisdiction-wide: _____

   Are inspections performed at least once every three years for all BMPs?
   ☐ Yes ☐ No

   If No, describe how the permittee will catch up on past inspections and remain on track to perform BMP inspections once every three years:

MCM #5: Post Construction Stormwater Management

Are BMP inspection records retained and available to MDE during field review of local programs?
☐ Yes ☐ No

3. Total number of violation notices issued: ☐

   Describe efforts to bring BMPs into compliance and the status of enforcement activities within the jurisdiction:

4. Describe how the permittee coordinates and cooperates with the County to ensure stormwater BMPs are functioning according to approved standards. (Applicable for municipalities that rely on the County to perform stormwater triennial inspections):

5. Provide a summary of routine maintenance activities for all publicly owned BMPs:

   Number of publicly owned BMPs: ☐

   Describe how often BMPs are maintained. Specify whether maintenance activities are more frequent for certain BMP types:

   Are BMP maintenance checklists and procedures for publicly owned BMPs available to MDE during field review of local programs?
   ☐ Yes ☐ No

   Are BMP maintenance records retained and available to MDE during field review of local programs?
   ☐ Yes ☐ No

   If either answer is No, describe planned actions to implement maintenance checklists and procedures and provide formal documentation of these activities:

6. Number of staff trained in proper BMP design, performance, inspection, and routine maintenance: ☐

MCM #5: Post Construction Stormwater Management

7. Provide a summary of activities planned for the next reporting cycle:
8. List the total cost of implementing this MCM over the permit term:

MCM #6: Pollution Prevention and Good Housekeeping

1. Provide a list of topics covered during the last training session related to pollution prevention and good housekeeping, and attach to this report specific examples of training materials:

   List all training dates within this two-year reporting period:

   Number of staff attended: ☐

2. Are the good housekeeping plan and inspection records at each property retained and available to MDE during field review of the local program? ☐ Yes ☐ No

   If No, explain:

   Provide details of all discharges, releases, leaks, or spills that occurred in the past reporting period using the following format (attach additional sheets if necessary).

   Property Name: Date:

   Describe observations:

   Describe permittee's response:

3. Quantify and report property management efforts as shown below, where applicable (attach additional sheets if necessary).

   Number of miles swept: ☐

   Amount of debris collected from sweeping (indicate units): ☐

   If roads and streets are swept, describe the strategy the permittee has implemented to maximize efficiency and target high priority areas:

   Number of inlets cleaned: ☐

   Amount of debris collected from inlet cleaning (indicate units): ☐

MCM #6: Pollution Prevention and Good Housekeeping

Describe how trash and hazardous waste materials are disposed of at permittee owned and operated property(ies), including debris collected from street sweeping and inlet cleaning:

Does the permittee have a current State of Maryland public agency permit to apply pesticides?
☐ Yes ☐ No

If No, explain (e.g., contractor applies pesticides):

Does the permittee employ at least one individual certified in pesticide application?
☐ Yes ☐ No

If Yes, list name(s):

If the permittee applied pesticides during the reporting year, describe good housekeeping methods (e.g., integrated pest management, alternative materials/techniques):

If the permittee applied fertilizer during the reporting year, describe good housekeeping methods (e.g., application methods, chemical storage, native or low maintenance species, training):

If the permittee applied materials for snow and ice control during the reporting year, describe good housekeeping methods (e.g., pre-treatment, truck calibration and storage, salt domes):

Describe good housekeeping BMP alternatives not listed above:

4. If applicable, provide a status update for permittee owned or operated properties regarding coverage under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity or an individual industrial surface water discharge permit:

5. List the total cost of implementing this MCM over the permit term:

TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
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FISCAL YEAR 2019 ANNUAL REPORT – YEAR 1

ATTACHMENT A

IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 1

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM

TOWN OF PERRYVILLE

PHASE II MS4 PERMIT

General Discharge Permit No. 13-IM-5500

General NPDES No. MDR055500

IMPERVIOUS AREA RESTORATION WORK PLAN

YEAR 1 SUMMARY

September 27, 2019

TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 1 SUMMARY

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TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 1 SUMMARY

I. Develop Impervious Area Baseline Assessment

***Step 1*:** Delineate Best Management Practices (BMP) drainage areas and calculate the acreage of each drainage area.

- Drainage areas for each BMP were delineated using available plans, stormwater management reports, aerial imagery, contour data, and the Town's Municipal Separate Storm Sewer System (MS4) data.
- Drainage areas were delineated as polygons in a Geographic Information System (GIS).
- A Quality Assurance/Quality Control (QA/QC) analysis was performed on the delineated drainage areas by a water resources engineer.
- The acreage of each drainage area was calculated in GIS.

***Step 2*:** Calculate the total (2005) impervious acreage for the Town as per the Permit, Appendix B, Section III.

- In GIS, base data was obtained and compiled on a map. Layers used in this analysis included the following:
  - Impervious Area for Cecil County (2014).
  - Orthoimagery for Cecil County (2005).
  - Orthoimagery for Cecil County (2016) (used as a reference).
  - Perryville corporate limits.
- 2014 impervious area data was used as the starting point to calculate the 2005 baseline because it was the only available impervious GIS data.
- The initial impervious area for the Town based on the 2014 impervious layer was approximately 423.32 acres.

- The GIS layers were prepared for further analysis by clipping the County data to the Town's corporate limits.
- The 2014 impervious area layer was copied and saved as the new 2005 impervious layer. This layer was edited and developed into the final 2005 impervious area baseline layer.
- The Town was divided into 1,000 feet by 1,000 feet grids using GIS tools. Grid by grid, the 2005 baseline layer was analyzed and edited. Impervious areas were represented by polygons in GIS. Areas that were impervious in 2014 but not in 2005 were removed. Areas that were impervious in 2005 but not in 2014 were added through digitization.
- Areas not under the responsibility of the Town, such as County-owned parcels, schools, and Maryland State Highway Administration right-of-way, were removed from the total impervious area.
- A QA/QC analysis was performed on the final 2005 impervious area layer.
- When calculating the total acreage, overlapping polygons in the GIS layer could cause the total to be inflated. To resolve this issue, the polygons within the impervious layer were merged into one combined polygon.
- Using GIS tools, the final total 2005 impervious area was calculated.
    - **The total impervious area is approximately 322.49 acres (Table 1).**

Table 1 – 2005 Impervious Areas [1]

Category	Total Area (Acres)
Total Impervious Area	**322.49**
Impervious Area Treated by BMPs with Full Water Quality Treatment [2]	125.08
Impervious Area Treated by BMPs with Partial Water Quality Treatment [3]	1.67
Impervious Area Treated by Non-structural Practices	To be Determined in Year 2 of Permit.
Untreated Impervious Area	195.74
Restoration Requirement (20% of Untreated Impervious Area)	**39.15**

[1] Areas may continue to be refined during each reporting year as funding allows and as new data becomes available.

[2] BMPs with a P_E value ≥ 1 were considered Full Water Quality Treatment BMPs.

[3] BMPs with a P_E value < 1 were considered Partial Water Quality Treatment BMPs.

***Step 3*:** Determine what water quality BMPs prior to 2006 treat existing impervious. Calculate the total impervious area treated by each of the Town's water quality BMPs.

- Using available plans, stormwater management reports, and the drainage areas delineated in Step 1, a desktop analysis was performed by a water resources engineer to determine the amount of water quality treatment for each BMP by era.
  - BMPs with a plan date prior to 1985 received a P_E Treated value of 0.
  - A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later received a P_E Treated value of 0.5.
  - BMPs without a wet/filtering component (other than XDED) received a P_E Treated value of 0.
  - BMPs with a wet/filtering component with a built date of 1985 or later received a P_E Treated value of 1.0.
- A QA/QC analysis was performed on the water quality calculations.
- Fact Sheets were created for each BMP detailing the calculations used to determine the impervious acres treated. The Fact Sheets have been included in **Appendix A**.
- **The total impervious area treated by BMPs providing <u>full</u> water quality treatment is approximately 125.08 acres (Table 1).**
- **The total impervious area treated by BMPs providing <u>partial</u> water quality treatment is approximately 1.67 acres (Table 1).**

***Step 4*:** Calculate the revised total (2005) impervious area baseline by removing impervious areas already treated by water quality BMPs.

- From the Fact Sheets created in Step 3, the total impervious acreage treated by water quality BMPs was determined to be approximately 126.75 acres.
  - Removing the 126.75 acres treated by water quality BMPs, the **final total 2005 impervious area baseline was reduced to 195.74 acres (Table 1)**.

II. Develop a Restoration Work Plan for MDE Review and Approval

Next Steps: In the upcoming years of the general permit, the Town will continue to revise and adjust the Impervious Area Restoration Work Plan as appropriate. The Town has already begun to discuss plans for meeting the restoration requirement. Future steps the Town plans to take include:

- Assess impervious acres treated by nonstructural practices.
  - Rooftop disconnections.
    - GIS analysis, in conjunction with field verification, will be used to determine the credit that can be applied towards reducing the total impervious acreage.
  - Vegetated swales.
    - An assessment of the vegetated swales within the Town will be used to determine credit that can be applied towards reducing the total impervious acreage.

- Assess impervious acre credits available based on Alternative Urban BMPs.
  - Street sweeping.
    - Guidelines from Appendix B, Table B.4 of the Permit will be used to determine the impervious area credit available to the Town based on the amount of street sweeping completed.

  - Storm drain cleaning.
    - Guidelines from Appendix B, Table B.4 of the Permit will be used to determine the impervious area credit available to the Town based on the amount of storm drain cleaning completed.

  - Stream restoration.
    - Guidelines from Appendix B, Table B.4 of the Permit will be used to determine the impervious credit available for existing stream restorations within the Town.
    - The Town will evaluate potential areas for future stream restorations and will identify these on the Restoration Activity Schedule.

  - Outfall stabilization.
    - Guidelines from Appendix B, Table B.4 of the Permit will be used to determine the impervious area credit available to the Town based on outfall stabilization projects that have been completed.

III. Assess Opportunities and Timelines for Implementing Water Quality BMPs

The Town has begun identifying potential opportunities to implement Water Quality BMPs. A meeting was held in early 2019 between the Town and a firm that specializes in optimizing the effectiveness of stormwater ponds to improve water quality treatment above original design specifications. The Town will continue to asses these types of opportunities and the timelines for implementing water quality BMPs during watershed during Year 2.

IV. Assess Opportunities to Develop Partnerships with other NPDES Permittees

The Town has had several discussions with other permittees prior to the permit being issued in October 2018. No partnerships were developed as a result of these meetings, which focused on the six Minimum Control Measures rather than the Chesapeake Bay Restoration and Meeting Total Maximum Daily Loads. It is possible that opportunities for partnerships with other permittees may develop later in the permit process, however, at this time the Town feels partnerships are unlikely to develop.

V. Determine Funding Needs and Develop a Long-Term Budget

Once the analysis of the baseline impervious is complete and the Town knows their 20% restoration requirement, funding needs and a long term budget will be developed.

VI. References

Maryland Department of the Environment. (2018). *National Pollutant Discharge Elimination System General Permit for Discharges from Small Municipal Separate Storm Sewer Systems: General Discharge Permit No. 13-IM-5500, General NPDES No. MDR055500*. Baltimore, MD: Author.

Maryland Department of the Environment. (2019). *NPDES MS4 Phase II Permit Guidance: Developing and Verifying the Impervious Area Baseline and Restoration Target.* Baltimore, MD: Author.

TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM

General Discharge Permit No. 03-IM-5500 / General NPDES Permit No. MDR055500

IMPERVIOUS AREA RESTORATION WORK PLAN

YEAR 1 SUMMARY

APPENDIX A

BMP FACT SHEETS

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Art Wood Builders, Inc. - Perryville Site
BMP ID Number	CC1986-0004
Design Sub	Extended Detention Structure, Dry
Plan Date	1986
GIS Drainage Area (Acres)	0.94
Total Impervious Area (Acres)	0.65
P_E Treated by BMP (inches) (Pe)*	0.5

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		0.50	
Total Impervious (Acres):	0.65	**Town Owned Impervious (Acres):**	0.65
Impervious Acres Treated:		0.33	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Beacon Point Phase 1
BMP ID Number	CC1997-0002
Design Sub	Retention Pond (Wet Pond)
Plan Date	1997
GIS Drainage Area (Acres)	61.39
Total Impervious Area (Acres)	22.75
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	22.75	**Town Owned Impervious (Acres):**	22.75
Impervious Acres Treated:		22.75	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Courtyards at Olde Towne Pond 1
BMP ID Number	CC2004-0034a
Design Sub	Retention Structure (Wet Pond)
Plan Date	2004
GIS Drainage Area (Acres)	10.33
Total Impervious Area (Acres)	4.50
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	4.50	**Town Owned Impervious (Acres):**	4.50
Impervious Acres Treated:		4.50	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Courtyards at Olde Towne Pond 2
BMP ID Number	CC2004-0034b
Design Sub	Retention Structure (Wet Pond)
Plan Date	2004
GIS Drainage Area (Acres)	2.08
Total Impervious Area (Acres)	0.99
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	0.99	**Town Owned Impervious (Acres):**	0.99
Impervious Acres Treated:		0.99	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Courtyards at Olde Towne Pond 3
BMP ID Number	CC2004-0034c
Design Sub	Infiltration Structure
Plan Date	2004
GIS Drainage Area (Acres)	0.23
Total Impervious Area (Acres)	0.13
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	0.13	**Town Owned Impervious (Acres):**	0.13
Impervious Acres Treated:		0.13	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Gale's Manor
BMP ID Number	CC1997-0016
Design Sub	Extended Detention Structure, Dry
Plan Date	1997
GIS Drainage Area (Acres)	9.44
Total Impervious Area (Acres)	1.61
P_E Treated by BMP (inches) (Pe)*	0.5

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		0.50	
Total Impervious (Acres):	1.61	**Town Owned Impervious (Acres):**	1.61
Impervious Acres Treated:		0.80	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Ikea Distribution Center Basin 1
BMP ID Number	CC2007-0146a
Design Sub	Extended Detention Structure, Wet
Plan Date	2002
GIS Drainage Area (Acres)	38.74
Total Impervious Area (Acres)	35.07
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	35.07	**Town Owned Impervious (Acres):**	35.07
Impervious Acres Treated:		35.07	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Ikea Distribution Center Basin 2
BMP ID Number	CC2007-0146b
Design Sub	Extended Detention Structure, Wet
Plan Date	2002
GIS Drainage Area (Acres)	91.55
Total Impervious Area (Acres)	30.24
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	30.24	**Town Owned Impervious (Acres):**	30.24
Impervious Acres Treated:		30.24	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Ikea-Bioretentions
BMP ID Number	CC2007-0146c
Design Sub	Bioretention
Plan Date	2002
GIS Drainage Area (Acres)	8.67
Total Impervious Area (Acres)	6.49
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	6.49	**Town Owned Impervious (Acres):**	6.49
Impervious Acres Treated:		6.49	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Perryville Marc
BMP ID Number	
Design Sub	Retention Structure (Wet Pond)
Plan Date	
GIS Drainage Area (Acres)	0.72
Total Impervious Area (Acres)	0.47
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:
1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	0.47	**Town Owned Impervious (Acres):**	0.47
Impervious Acres Treated:		0.47	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Perryville Outlets 1
BMP ID Number	
Design Sub	Retention Structure (Wet Pond)
Plan Date	
GIS Drainage Area (Acres)	22.96
Total Impervious Area (Acres)	14.39
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	14.39	**Town Owned Impervious (Acres):**	14.39
Impervious Acres Treated:		14.39	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Perryville Travel Plaza Lot 6
BMP ID Number	CC1987-0009
Design Sub	Retention Structure (Wet Pond)
Plan Date	1987
GIS Drainage Area (Acres)	15.90
Total Impervious Area (Acres)	10.05
P_E Treated by BMP (inches) (Pe)*	1.0

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		1.00	
Total Impervious (Acres):	10.05	**Town Owned Impervious (Acres):**	10.05
Impervious Acres Treated:		10.05	

TOWN OF PERRYVILLE
NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PROGRAM
BMP FACT SHEET

Date: 6/26/2019

Pe Determination:

BMP Project Name	Susquehanna Professional Center
BMP ID Number	CC1996-0020
Design Sub	Extended Detention Structure, Dry
Plan Date	1994
GIS Drainage Area (Acres)	4.82
Total Impervious Area (Acres)	1.09
P_E Treated by BMP (inches) (Pe)*	0.5

* Pe treated values are determined by the following criteria:

1. BMPs with a plan date prior to 1985 receive a Pe Treated value of 0.
2. A BMP type of XDED (Extended Detention Structure, Dry) with a built date of 1985 or later receives a Pe Treated value of 0.5
3. BMPs without a wet/filtering component (other than XDED) receive a Pe Treated value of 0.
4. BMPs with a wet/filtering component with a built date of 1985 or later receive a Pe Treated value of 1.0.

Impervious Area Treated Calculation:

If P_E is less than or equal to 1, then:

Impervious Acres x *PE Treated by BMP* = *Impervious Acres Treated*

If P_E is greater than 1, then:

$$\left[Impervious\ Acres \times \frac{(PE\ Treated\ by\ BMP - 1)}{0.4} \times 0.1\right] + Impervious\ Acres = Impervious\ Acres\ Treated$$

Construction Purpose:		Baseline	
P_E Treated by BMP (inches):		0.50	
Total Impervious (Acres):	1.09	**Town Owned Impervious (Acres):**	1.09
Impervious Acres Treated:		0.54	

TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT FOR DISCHARGES FROM
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

General Discharge Permit No. 03-IM-5500 / General NPDES Permit No. MDR055500

FISCAL YEAR 2019 ANNUAL REPORT – YEAR 1

ATTACHMENT B

BEST MANAGEMENT PRACTICES DATABASE – YEAR 1

ALSO SUBMITTED VIA SEPARATE EXCEL FILE

Table B.1.a. BMP Reporting Requirements

BMP_ID	REPORTING_YEAR	MD_NORTH	MD_EAST	PERMIT_NUM	LOCAL_BMP_ID	BMP_NAME	BMP_CLASS	BMP_TYPE	CON_PURPOSE	LAST_INSP_DATE	BMP_STATUS	MAIN_DATE	REINSP_DATE	REINSP_STATUS	GEN_COMMENTS
CE19BMP000001	2019	214671.5421	479633.7278	13-IM-5500	CC09BMP01026a	Hollywood Casino Perryville-North Basin Bioretentions	S	FBIO	NEWD	5/9/2018	F		6/10/2018		See North Basin Approved plan data for DA information.
CE19BMP000002	2019	214410.2636	479621.8946	13-IM-5500	CC09BMP01026b	Hollywood Casino Perryville-South Basin Bioretentions	S	FBIO	NEWD	5/8/2018	F		6/10/2018		See South Basin Approved plan data for DA information.
CE19BMP000003	2019	214709.9409	479696.2268	13-IM-5500	CC09PND01026a	Hollywood Casino Perryville North Basin	S	XDPD	NEWD	5/8/2018	F		10/10/2016		
CE19BMP000004	2019	214208.2604	479667.3922	13-IM-5500	CC09PND01026b	Hollywood Casino Perryville South Basin	S	XDED	NEWD	5/8/2018	F		6/8/2018		
CE19BMP000005	2019	213375.4861	479964.8604	13-IM-5500	CC1234-5678	Perryville Outlets	S	PWED	NEWD	9/27/2018	F		10/30/2018		No plans or agreements located
CE19BMP000006	2019	211218.8202	480212.4708	13-IM-5500	CC14BMP01674a	Perryville Elementary School Renovations-SGW	E	MSGW	NEWD	6/26/2018	P		8/10/2018		Converted from Dry Pond to SGW.
CE19BMP000007	2019	211153.3578	480049.3646	13-IM-5500	CC14BMP01674b	Perryville Elementary School Renovations-Rain Garden	E	MRNG	NEWD	6/26/2018	P		6/25/2021		
CE19BMP000008	2019	211114.5756	480087.7655	13-IM-5500	CC14BMP01674c	Perryville Elementary School Renovations-MB #2	E	MMBR	NEWD	6/22/2018	P		6/22/2011		
CE19BMP000009	2019	211126.507	480064.535	13-IM-5500	CC14BMP01674d	Perryville Elementary School Renovations-MB #1	E	MMBR	NEWD	6/22/2018	P		6/22/2021		
CE19BMP000010	2019	210398.0424	479244.4551	13-IM-5500	CC14BMP03875	Lower Ferry Park Bio-Filtration Swale & Grass Filter Areas	E	MSWB	NEWD	8/28/2018	P		8/28/2021		
CE19BMP000011	2019	210662.6504	479594.7977	13-IM-5500	CC16BMP04388a	Perryville Police Headquarters Phase 1-Micobioretention-1	E	MMBR	NEWD	12/6/2017	P		12/6/2018		
CE19BMP000012	2019	210704.6891	479605.4072	13-IM-5500	CC16BMP04388b	Perryville Police Headquarters Phase 1-Micobioretention-2	E	MMBR	NEWD	12/6/2017	P		12/8/2018		
CE19BMP000013	2019	210649.2208	479580.7857	13-IM-5500	CC16BMP04388c	Perryville Police Headquarters Phase 1-Micobioretention-3	E	MMBR	NEWD	12/6/2017	P		12/6/2018		
CE19BMP000014	2019	213681.9	480352.8223	13-IM-5500	CC17BMP04453	Royal Farms Store #267 Perryville	E	MIBR	NEWD	7/16/2018	F		7/16/2018		
CE19BMP000015	2019	212435.5931	480218.1976	13-IM-5500	CC1986-0004	Art Wood Builders, Inc. - Perryville Site	S	XDED	NEWD	7/12/2017	F		8/12/2017		
CE19BMP000016	2019	213841.7564	480006.439	13-IM-5500	CC1987-0009	Perryville Travel Plaza Lot 6	S	PWET	NEWD	9/25/2018	F		10/29/2018		
CE19BMP000017	2019	212193.2871	481161.258	13-IM-5500	CC1987-0011	Concord IV Apartments - SWM Facility 1	S	XDPD	NEWD	3/7/2017	P	3/17/2017	3/17/2020		XDPD
CE19BMP000018	2019	212565.4402	482139.0673	13-IM-5500	CC1989-0003	First Baptist Church of Perryville	S	XDPD	NEWD	9/7/2018	F		10/13/2018		No asbuilt located
CE19BMP000019	2019	211175.0642	479707.2568	13-IM-5500	CC1990-0019	Kimberly Woods	S	XDPD	NEWD	6/6/2018	F	7/2/2018	7/15/2018		The asbuilt could be located
CE19BMP000020	2019	210908.9639	479364.7433	13-IM-5500	CC1993-0022	American Legion Post #135	S	XDPD	NEWD	5/24/2018	F	9/17/2018	6/29/2018		Plans not found. No date or plan information
CE19BMP000021	2019	212239.0788	481517.2072	13-IM-5500	CC1994-0020	Chesapeake Landing - SWM Facility	S	XDED	NEWD	1/5/2017	F				2 & 10 Year provided
CE19BMP000022	2019	215126.1967	480046.8757	13-IM-5500	CC1996-0020	Susquehanna Professional Center	S	XDED	NEWD	7/12/2017	P		10/24/2020	P	
CE19BMP000023	2019	212278.363	479542.4079	13-IM-5500	CC1997-0002	Beacon Point	S	PWET	NEWD	6/6/2018	F		7/10/2018		
CE19BMP000024	2019	213225.1359	479894.6246	13-IM-5500	CC1997-0016	Gale's Manor	S	XDED	NEWD	12/22/2016	F				XDED
CE19BMP000025	2019	211990.2468	481768.3683	13-IM-5500	CC1998-0022	River View HIlls Section VI				2/6/2019	F				Only plat located, no SWM plans
CE19BMP000026	2019	210452.3602	479633.5964	13-IM-5500	CC2001-0025	Perryville Marc Station Parking Lot Expansion	S			6/26/2018	P				No signed plans 9/26/18 MLM
CE19BMP000027	2019	211394.6309	479341.9182	13-IM-5500	CC2003-0006a	Frenchtown Crossing 1	E	MSWG	NEWD						No asbuilt located
CE19BMP000028	2019	211516.9332	479303.2435	13-IM-5500	CC2003-0006b	Frenchtown Crossing 2	E	MSWG	NEWD						No asbuilt located
CE19BMP000029	2019	211629.195	479269.8242	13-IM-5500	CC2003-0006c	Frenchtown Crossing 3	E	MSWG	NEWD						No asbuilt located
CE19BMP000030	2019	210781.8317	479080.6316	13-IM-5500	CC2004-0034a	Courtyards at Olde Towne Pond 1	S		NEWD	12/6/2016	F				Retention Structure (Wet Pond)
CE19BMP000031	2019	210816.7928	479086.3802	13-IM-5500	CC2004-0034b	Courtyards at Olde Towne Pond 2	S		NEWD	12/6/2016	F				Retention Structure (Wet Pond)
CE19BMP000032	2019	210862.1381	479153.6765	13-IM-5500	CC2004-0034c	Courtyards at Olde Towne Pond 3	S		NEWD	12/6/2016	F				Infiltration Structure
CE19BMP000033	2019	210920.8003	479622.7985	13-IM-5500	CC2004-0116a	Fairgreen Senior Community - SWM Pond	S	PMED	NEWD	3/6/2017	P		3/6/2020		PMED
CE19BMP000034	2019	210953.1623	479740.3584	13-IM-5500	CC2004-0116b	Fairgreen Senior Community - SWM Pretreatment Basin	S	XDPD	NEWD	3/7/2017	P		3/7/2020		XDPD
CE19BMP000035	2019	210460.2654	479810.8026	13-IM-5500	CC2005-0005	Neff Property	E	MSWG	NEWD	7/6/2019	F		8/16/2019		No I&M agreement found 10/11/18 MLM
CE19BMP000036	2019	211868.0843	480192.0605	13-IM-5500	CC2005-0013a	Perryville Station - Infiltration Trench	S	ITRN	NEWD	5/5/2017	P		5/5/2017	P	ITRN
CE19BMP000037	2019	211901.7838	480126.7602	13-IM-5500	CC2005-0013b	Perryville Station - Pocket Pond	S	PPKT	NEWD	2/17/2017	F				PPKT
CE19BMP000038	2019	211422.8123	480137.2798	13-IM-5500	CC2005-0055a	Perryville Middle School - Shallow Marsh	S	WSHW	NEWD	3/6/2017	F				WSHW
CE19BMP000039	2019	211331.82	480063.2721	13-IM-5500	CC2005-0055b	Perryville Middle School - Pond 1	S	PWET	NEWD	7/10/2018	F				PWET
CE19BMP000040	2019	211606.6088	480134.5331	13-IM-5500	CC2005-0055c	Perryville Middle School Forebay	S	XDPD	NEWD	3/6/2017	F				XDPD
CE19BMP000041	2019	211449.1256	480295.5378	13-IM-5500	CC2006-0025	Cecil County Public Library Perryville Branch	S	PMED	NEWD	2/17/2017	F				PMED
CE19BMP000042	2019	212002.6777	479393.2145	13-IM-5500	CC2006-0317	Richmond Hills Addition	S		NEWD	10/23/2013	P		10/23/2016		Retention Structure (Wet Pond)
CE19BMP000043	2019	212708.1866	481959.4008	13-IM-5500	CC2007-0035	Principio Health Center (Perryville Medical)				2/6/2019	P				Sediment Basin
CE19BMP000044	2019	210528.2024	479512.4533	13-IM-5500	CC2007-0065	Hawkins Court	S	PWED	NEWD	8/28/2018	F		10/1/2018		
CE19BMP000045	2019	210403.2352	480801.4338	13-IM-5500	CC2007-0146a	Ikea Distribution Center Basin 1	S	PWED	NEWD	6/12/2018	F		7/22/2018		
CE19BMP000046	2019	210387.8566	481077.6912	13-IM-5500	CC2007-0146b	Ikea Distribution Center Basin 2	S	PWED	NEWD	6/12/2018	P		6/30/2021		
CE19BMP000047	2019	210917.8154	481248.7744	13-IM-5500	CC2007-0146c	Ikea Distribution Center Bioretentions	S	FBIO	NEWD	6/29/2018	P		6/29/2021		
CE19BMP000048	2019	210780.4452	480432.1176	13-IM-5500	CC2007-0158	Frenchman Land Co-Coastal Lubricants	S		NEWD						Project not completed, no asbuilt submitted
CE19BMP000049	2019	210768.8769	478990.7126	13-IM-5500	CC2009-0004	Perryville Yacht Club Phase 1	S	FSND	NEWD	3/29/2017	F				FSND
CE19BMP000050	2019	212686.5401	478726.2582	13-IM-5500	CC2009-0015	Perryville, Town of - DPW Building	S	MIDW	NEWD	8/7/2018	P		8/7/2021		
CE19BMP000051	2019	212243.5392	481235.476	13-IM-5500	CC2009-0037	Concord Apartments Clubhouse Drywells	E	MIDW	REDE	3/7/2017	P	3/7/2017	3/7/2017	P	Drywell
CE19BMP000052	2019	212051.0564	480414.4949	13-IM-5500	CC2009MS-29	East Coast Liquors	E	MRWH	NEWD						Project not completed, no asbuilt submitted
CE19BMP000053	2019	211622.4672	479673.078	13-IM-5500	CC2011-0034	Richmond Hill Manor Senior Apartments - Sand Filter	S	FSND	REDE	9/12/2013	P		9/12/2013		Sand Filter

Table B.1.b. Reporting Requirements for ESD and Structural Practices

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
CE19BMP000001	1	ON		ACT				10/20/2009	10/8/2015	See North Basin Approved plan data for DA information.
CE19BMP000002	1	ON		ACT				10/20/2009	10/8/2015	See South Basin Approved plan data for DA information.
CE19BMP000003	1	ON		ACT	13.33	13.33		10/20/2009	10/8/2015	
CE19BMP000004	1	ON		ACT	36.71	36.71		10/20/2009	10/8/2015	
CE19BMP000005	1	ON		ACT	22.96	14.39	1.00			No plans or agreements located
CE19BMP000006	1	ON		ACT	1.449	1.122		9/18/2014	5/31/2017	Converted from Dry Pond to SGW.
CE19BMP000007	1	ON		ACT	0.105	0.05		9/18/2014	5/31/2017	
CE19BMP000008	1	ON		ACT	0.459	0.362		9/18/2014	5/31/2017	
CE19BMP000009	1	ON		ACT	0.459	0.342		9/17/2014	5/31/2017	
CE19BMP000010	2	ON		ACT	1.8	0.41	1.5	11/3/2014	9/6/2017	
CE19BMP000011	1	ON		ACT	0.253903	0.196281	2		12/6/2017	
CE19BMP000012	1	ON		ACT	0.317952	0.223829			12/6/2017	
CE19BMP000013	1	ON		ACT	0.447568	0.284665	2.1		12/6/2017	
CE19BMP000014	5	ON		ACT	2.55	1.58		1/13/2017	6/5/2018	
CE19BMP000015	1	ON		ACT	0.94	0.65	0.50	5/5/1986	5/31/1991	
CE19BMP000016	1	ON		ACT	15.90	10.05	1.00	10/2/1987	1/24/1991	
CE19BMP000017	1	ON		ACT		1.96		1/7/1987		XDPD
CE19BMP000018	1	ON		ACT	4.69	1.148		11/30/1989		No asbuilt located
CE19BMP000019	1	ON		ACT	2.329			3/8/1990		The asbuilt could be located
CE19BMP000020	1	ON		ACT						Plans not found. No date or plan information
CE19BMP000021	1	ON		ACT	20.8			5/12/1989	10/24/1997	2 & 10 Year provided
CE19BMP000022	1	ON		ACT	4.82	1.09	0.50	5/31/1994	4/30/1997	
CE19BMP000023	1	ON		ACT	61.39	22.75	1.00	7/8/1997	10/21/2006	
CE19BMP000024	1	ON		ACT	9.44	1.61	0.50	9/22/1997		XDED
CE19BMP000026	1	ON		ACT	0.72	0.47	1.00			No signed plans 9/26/18 MLM
CE19BMP000027	1	ON		ACT						No asbuilt located
CE19BMP000028	1	ON		ACT						No asbuilt located
CE19BMP000029	1	ON		ACT						No asbuilt located
CE19BMP000030	1	ON		ACT	10.33	4.50	1.00			Retention Structure (Wet Pond)
CE19BMP000031	1	ON		ACT	2.08	0.99	1.00			Retention Structure (Wet Pond)
CE19BMP000032	1	ON		ACT	0.23	0.13	1.00			Infiltration Structure
CE19BMP000033	1	ON		ACT	1.59	1.59		3/30/2004	11/15/2006	PMED
CE19BMP000034	1	ON		ACT	1.59	1.59		3/30/2004	11/15/2006	XDPD
CE19BMP000035	1	ON		ACT	0.35	0.35		5/31/2005	6/3/2005	No I&M agreement found 10/11/18 MLM
CE19BMP000036	1	ON		ACT		7.9		10/18/2006	9/25/2008	ITRN
CE19BMP000037	1	ON		ACT	7.46	7.46		8/25/2005	7/9/2010	PPKT
CE19BMP000038	1	ON		ACT				2/14/2006	6/11/2008	WSHW
CE19BMP000039	1	ON		ACT	8.54	4.37		2/14/2004	6/11/2008	PWET
CE19BMP000040	1	ON		ACT					6/11/2008	XDPD
CE19BMP000041	1	ON		ACT	3.3	2.07		6/16/2006	10/1/2007	PMED
CE19BMP000042	1	ON		ACT						Retention Structure (Wet Pond)
CE19BMP000044	1	ON		ACT	1.51	0.39		12/1/2005	8/6/2015	
CE19BMP000045	1	ON		ACT	38.74	35.07	1.00	3/19/2004	1/1/2002	
CE19BMP000046	1	ON		ACT	91.55	30.24	1.00	2/22/2006	1/1/2002	
CE19BMP000047	1	ON		ACT	8.67	6.49	1.00	2/22/2006	5/22/2009	
CE19BMP000048	1	ON		ACT					1/1/1986	Project not completed, no asbuilt submitted
CE19BMP000049	1	ON		ACT	3.84	3.82		9/24/2004	6/29/2011	FSND
CE19BMP000050	1	ON		ACT	0.65	0.38		5/12/2010	11/2/2011	
CE19BMP000051	4	ON		ACT	0.08	0.08		12/7/2009	12/28/2010	Drywell
CE19BMP000052		ON		ACT	0.2			11/25/2009	12/29/2009	Project not completed, no asbuilt submitted
CE19BMP000053	1	ON		ACT	2.08			6/21/2012	9/12/2013	Sand Filter

Table B.1.c Reporting Requirements for Alternative BMPs

BMP_ID	PROJECT_DESC	PROJECT_LENGTH	ACRES_SWEPT	TIMES_SWEPT	ACRES_PLANTED	IMP_ACR_ELIM	EQU_IMP_ACR	INSTALL_DATE	IMPL_COMP_YR	GEN_COMMENTS

TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT FOR DISCHARGES FROM
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

General Discharge Permit No. 03-IM-5500 / General NPDES Permit No. MDR055500

FISCAL YEAR 2019 ANNUAL REPORT – YEAR 1

ATTACHMENT C

SCOPE OF WORK – APPENDIX D, SECTION I, QUESTION 5

TOWN OF PERRYVILLE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

FISCAL YEAR 2019 ANNUAL REPORT – YEAR 1

ATTACHMENT C
SCOPE OF WORK – APPENDIX D, SECTION I, QUESTION 5

The following is a summary of impervious area restoration activities planned for Year 2.

GIS Analysis and Data Review

Existing data will be analyzed to help pinpoint problem areas and to support the desktop evaluation of restoration improvements completed in subsequent tasks.

Visual Watershed Inspection

Visual assessments following standard procedures developed for watershed reconnaissance and restoration will be used, to include a Stream Corridor Assessment (SCA), Neighborhood Site Assessment (NSA), and Hotspot Site Investigation (HSI).

Stream Corridor Assessment (SCA)

The SCA (MDNR, 2001) will be completed by walking the stream channel and conducting a visual assessment to locate problem areas within the stream valley, and to identify their correctability, severity, and accessibility.

- Approximately 3 – 6 miles of stream within the Town limits will be walked.
- During the assessment, recommended improvements will be noted, along with information needed for concept design, including measurements of bank height and project length.

Identify Restoration Projects

The results of the GIS analysis and field assessments (SCA, NSA, HSI) will be used to identify existing water quality problem areas where restoration projects could be effective. These could include the following:

- Habitat Degradation (forest, wetland, stream).
- Channel Stability (erosion, channel alteration).
- Biological Degradation (poor biological indicators).

- Septic Systems (failed, within Critical Area).
- Water Quality Impairment (untreated runoff, lack of source controls).

Once the issues have been identified, improvement projects will be identified to treat the impairment.

Field Assessment

A field assessment of up to 15 stormwater sites will be conducted using the Retrofit Reconnaissance Investigation (RRI) published by the Center for Watershed Protection. This assessment will verify the feasibility of the desktop sites and collect sufficient information for subsequent prioritization. The information needed for subsequent prioritization will be provided, including:

- Surface area available and footprint of new treatment.
- Field verification of drainage areas.
- For existing BMPs, size, condition, or problems that may need remediation.

Concept Reports

In order to compare potential projects and determine which could be most effective at meeting the Town's goals, concept design and cost estimate information will be developed for up to 15 potential sites, as follows:

- Calculations for Stormwater Management (SWM) or Environmental Site Design (ESD) systems will be based on default values and criteria from the 2009 MDE SWM Manual. For each SWM or ESD facility, the required treatment volumes for water quality will be calculated assuming 1" of rainfall. Drainage areas will be delineated, and impervious area calculated for sites with proposed new stormwater treatment. The amount of treatment that can be provided will be determined based on the field measurements of available space, retrofit constraints, and other factors, as follows:

    - For retrofits of existing ponds, an estimate of capacity will be made based on the difference between required volume and field measurements or record documents.
    - For new SWM ponds, wetlands, or other storage facilities, estimates will be based on a concept level design, which varies according to surface area and depth to provide the maximum volume within site constraints.
    - Filtration and infiltration facilities will be sized based on typical configurations of depth and infiltration rates to determine the required surface area.
    - Swales and conveyance treatments will be sized similarly, with varying length, width, and side slopes to estimate the maximum volume that can be treated at the site.

- Analysis for stream restoration projects will be developed at a planning-level of detail and will include designs for three types of linear projects:

- Major changes in planform grade or cross-section.
- Stabilization with minor changes in channel dimensions.
- Buffer restoration and reforestation potential.

Concept Plans

The information above will be provided for review by Town staff, and recommendations for the highest priority projects will be discussed. For the 8 selected projects, concept plans will be prepared in the format of 2- to 4-page 8½" x 11" documents without plan sheets. The concept plans will include the following:

- *Narrative Description of Issue to be Addressed:* This section is a short description of the project, including the area to be treated, any existing facilities or treatments in place, or the condition of the stream reach or shoreline to be restored.
- *Purpose of Restoration Activity:* The project description will include a summary of the effects of the proposed improvement. These could include such things as reduction in runoff pollutants, runoff volume, peak flows, or erosive velocities; reduction of channel widening or bank failure; and, habitat improvements.
- *Pollutant Load Reduction Estimate:* Estimates of pollutant load reductions per Best Management Practice (BMP) will be made using a spreadsheet model to estimate runoff loads by land use and secondary loads from septic systems, stream erosion, or other sources. Pollutant removal estimates will be calculated for structural BMPs, ESD, and alternative treatment using the reduction rates from MDE (2014).
- *Site Location Map.* This map is a small inset showing the project site and adjacent roads, sufficient to locate it on a larger area map.
- *Concept Sketch:* For each site, a sketch of the project concept will be prepared in the field on maps prepared from GIS data, which include orthophotography, topography, streams and hydrology, storm drains, and property boundaries.
- *Existing Condition Photos:* Photos of existing conditions will be taken during the field assessment and will be included in the concept plans.
- *Cost Estimates.* Cost estimates will be presented at a basic planning level for the design and construction of the project.
- *Feasibility Assessment for Constructability:* Feasibility will be assessed during the site visit, with review by an Environmental Scientist for constraints such as wetland and forest impacts, and by an Engineer for design constraints such as slope or soils issues. Constructability will also include the following items:

- Land Ownership - Land ownership will be assessed to the level of the type of ownership (Town, County, State, Federal, private, HOA, other) based on readily available GIS data, but not to the level of researching the particular parcel owner.
- Construction Access - Access issues will be identified in the field, including assessing impacts to sensitive areas (wetlands, forests, steep slopes, erodible soils, etc.), availability of stockpile and laydown areas, and staging areas for equipment.
- Erosion and Sediment Control – Erosion and Sediment Control is generally addressed with more detailed designs; however at a conceptual level these issues could affect the phasing of different elements of a project, or the overall limits of disturbance.
- Utility Conflict - Potential utility conflicts will be identified through review of GIS data, available as-built drawings, and field observations.