

## ANNUAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) STATUS REPORT INSTRUCTIONS

This template should be used for Annual MS4 Status Reports submitted to DEP in accordance with the permit. For existing MS4s, the first annual report will be due on September 30, 2018 and will be required annually thereafter by September 30<sup>th</sup>. For new MS4s, the first annual report will be due by the first September 30<sup>th</sup> after the first year of permit coverage and will be required annually thereafter by September 30<sup>th</sup>.

Identify the reporting period at the top of the form. The reporting period will normally run from July 1 – June 30. For existing MS4s, however, the first annual report will need to have a different reporting period to implement the transition from a variable reporting cycle to a standardized reporting cycle. To make this transition, all MS4s with existing permit coverage with any reporting period that extends beyond June 30, 2017 will now have a new reporting period end date of June 30, 2018, with the report due on September 30, 2018. For example, an existing MS4 permittee with annual reporting period of January 1 – December 31 would, for the first annual report following the transition, have a reporting period of January 1, 2017 – June 30, 2018 (due by September 30, 2018). Thereafter the annual reporting period will run from July 1 – June 30.

### General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's primary contact person for MS4 issues and this person's title, phone number and email address. Also record the NPDES permit number, the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance / renewal (if applicable) (i.e., 180 days prior to expiration date unless permission is granted by DEP for a later date), and the municipality and county where the MS4 is located. It is noted that MS4s with PAG-13 General Permit coverage will not report an expiration date or a renewal due date because coverage under PAG-13 generally does not expire.

If the permit was issued to co-permittees, list the name(s) of all other co-permittees, otherwise enter "N/A" in the space provided.

Check the appropriate box(es) to indicate the appendix or Appendixes that the permittee must comply with.

### Water Quality Information

Check the box for Yes or No to indicate whether there are any stormwater discharges from the MS4 to waters within the Chesapeake Bay Watershed.

Identify all surface waters that receive stormwater discharges from storm sewers within the MS4 urbanized area (including discharges that drain to storm sewers not owned by the permittee) and provide the following information:

- **Receiving Water Name** – The name of the receiving water body as it exists in 25 Pa. Code Chapter 93 or as it is known locally. DEP's eMapPA application may also be used to determine this information (see [www.emappa.dep.state.pa.us](http://www.emappa.dep.state.pa.us)).
- **Chapter 93 Class. (Classification)** – This information may be obtained by using DEP's eMapPA application or by looking up the receiving waters in 25 Pa. Code Chapter 93 (see [www.pacode.com](http://www.pacode.com), select Title 25 and select Chapter 93) (e.g., WWF, CWF, TSF, HQ-CWF, etc.).
- **Impaired?** (indicate Yes or No) – This information may be obtained by using DEP's eMapPA application or by reviewing the latest Integrated Water Quality Report (Lists 4 and/or 5) (visit [www.dep.state.pa.us](http://www.dep.state.pa.us), select Water, select The Bureau of Point and Non-Point Source Management, select Water Quality Standards (on right), and select Integrated Water Quality Report).
- **Cause(s)** – This is the cause(s) for an impairment of a water body. If the receiving waters are not impaired, this section may remain blank. If the receiving waters are impaired, then identify the cause(s) listed for the impairment, using eMapPA or the latest Integrated Water Quality Report (Lists 4 and/or 5).

- **TMDL?** (indicate Yes or No) – Indicate whether a Total Maximum Daily Load (TMDL) has been approved for the receiving waters (visit [www.dep.state.pa.us](http://www.dep.state.pa.us), select DEP Programs A-Z, select T, and select TMDL).
- **WLA?** (indicate Yes or No) – If the receiving waters have an approved TMDL, specify “Yes” if the MS4 has been assigned a specific (individual) or aggregate (bulk) wasteload allocation (WLA) in the TMDL, otherwise select “No.”

### **General Minimum Control Measure (MCM) Information**

Indicate whether the permittee has completed all MCM activities required by the permit for this reporting period (Yes or No).

For each MCM, identify the entity responsible for MCM implementation, along with the name and phone number of the contact individual for the responsible entity.

### **MCM Detailed Information**

This section of the report lists each BMP and measurable goal(s) from the permit for each MCM, followed by questions designed to verify that progress under the permit is being achieved. The questions are generally self-explanatory. Please complete all requested information and if a question is not applicable, enter “N/A.” Also note requirements for attachments to the report.

For **Table 1** (MCM #5, BMP #3), list all existing structural BMPs that were installed to satisfy post-construction stormwater management (PCSM) requirements for earth disturbance activities under Chapter 102 and that discharge to the permittee’s MS4.

- **BMP No.** – Provide a unique BMP ID number, starting with 1.
- **BMP Name** – Utilize BMP Names from the Chesapeake Bay Model. Documentation is available at <http://cast.chesapeakebay.net/Home/SourceData>.
- **DA (ac)** – If available, report the drainage area, in acres, treated by the BMP.
- **Entity Responsible for O&M** – List the name(s) of individuals or organizations that have responsibility for long-term operation and maintenance (O&M) of the BMP. Note that under 25 Pa. Code § 102.8(m), unless O&M responsibility is transferred to another party, the Chapter 102 permittee and the landowner remain jointly and severally responsible for O&M of BMPs.
- **Latitude / Longitude** – Provide the latitude and longitude coordinates of the BMP (i.e., center of BMP) in degrees, minutes and seconds.
- **Date Installed** – List the date, or approximate date, the BMP was installed/completed, if available.
- **O&M Requirements** – Report the O&M requirements for the BMP. For BMPs installed after 2010 the O&M requirements should have been recorded with the recorder of deeds. If unknown the O&M requirements from Pennsylvania’s Stormwater BMP Manual or other resources may be used.
- **NPDES Permit No.** – List the NPDES permit number under which the BMP was installed, if available.

Completion of Table 1 satisfies permit requirements relating to having an inventory of PCSM BMPs.

### **Pollutant Control Measures (PCMs)**

If the permittee is required to implement Appendixes A, B, and/or C of the MS4 NPDES permit, complete the table to indicate the status of implementing PCMs. Attach the relevant documentation in accordance with the permit.

### Pollutant Reduction Plans (PRPs) and TMDL Plans

If the permittee is required to implement a PRP and/or TMDL Plan in accordance with Appendixes D, E, and/or F of the MS4 NPDES permit, complete the tables and questions in this section regarding status of implementing these plans.

**NOTE** – If a joint PRP or TMDL Plan was developed in which the MS4s participating in the joint plan are not co-permittees, all MS4 participants will need to independently report progress in implementing the joint plan consistently.

**Table 2** must be completed by permittees required to implement a PRP and/or TMDL Plan. Report all new structural BMPs installed and ongoing non-structural BMPs implemented during the reporting period that are being used toward achieving load reductions in the permittee’s plan(s). The information that must be provided in this table is explained as follows:

- BMP No. – Provide each BMP with a unique ID number (considering BMPs in Table 1).
- BMP Name – Utilize BMP Names from the Chesapeake Bay Model.
- DA (ac) – The drainage area treated by the BMP, where applicable.
- % Imp. – The percentage of impervious surface within the drainage area treated by the BMP, where applicable.
- BMP Extent – A numeric value describing the extent of BMP implementation.
- Units – The unit of measure characterizing the BMP Extent. For example, if “20 miles” is reported, “20” is the BMP Extent and “miles” is the unit.
- Latitude/Longitude – The latitude and longitude coordinates of the BMP (i.e., center of BMP) in degrees, minutes and seconds.
- Date Installed or Implemented – For structural BMPs, report the date the BMP was installed or completed. For non-structural BMPs this field may remain blank or narrative dates such as “1/week” may be used.
- Planning Area? – Check the box if the BMP was installed or implemented within the Planning Area delineated for the PRP and/or TMDL Plan.
- Ch. 102? – Check the box if the BMP was installed or implemented as a requirement under a Chapter 102 permit for earth disturbance activities.
- Annual Sediment Load Reduction (lbs/yr) – Report the calculated annual sediment load reduction for the BMP. Note that this value must be documented in the final report for the PRP and/or TMDL Plan.

**Table 3** must also be completed by permittees required to implement a PRP and/or TMDL Plan. The purpose of Table 3 is to maintain an ongoing inventory of structural BMPs installed by the permittee for the purpose of meeting pollutant load reduction requirements. For the first year this table may remain blank. If structural BMPs are reported in Table 2 for the first year, in the second year those BMPs would be reported in the Table 3 inventory. Table 3 contains similar information as Table 2, except:

- Planning Area and Chapter 102 boxes are omitted from Table 3.
- Table 3 includes columns for “Date of Latest Inspection” and “Satisfactory?” Enter the date of the most recent inspection. If the inspected BMP was found to be functioning properly, check the box in the Satisfactory column. This information may be used for the Chesapeake Bay model, where applicable.

### **Certification**

The Certification section includes a statement specific to PAG-13 permittees and a statement that applies to all MS4 permittees. A responsible official of the permittee must sign and date the form and include the telephone number where the responsible official may be contacted.

For joint permittees, a Certification section signed by a responsible official from each permittee must be submitted with the Annual MS4 Status Report.

### **PRP/TMDL Plan Final Report**

Permittees must achieve the required pollutant load reductions within five years following DEP's approval of coverage under the General Permit or issuance of an Individual Permit. A final report demonstrating compliance with the minimum pollutant load reductions must be submitted as an attachment to the first Annual MS4 Status Report that is due following completion of the fifth year of General Permit coverage. For example, if DEP issues written approval of coverage to a permittee on June 1, 2019, the required pollutant load reductions must be implemented by June 1, 2024 and the final report documenting the BMPs that were implemented (with appropriate calculations) must be attached to the annual report that is due September 30, 2024.

**Use of DEP's PRP/TMDL Plan Final Report template (3800-FM-BCW0014) is strongly encouraged.** If the template is not used, the final report should include all of the information requested in the template, at a minimum, to be considered complete.

Each permittee must submit a final report, even if a permittee collaborated with other permittees in preparing and implementing a PRP or TMDL Plan. Co-permittees, i.e., permittees who applied for a "joint permit", may submit one final report for the co-permittee group.

One final report should be completed and submitted for each approved plan, even if the plan addresses multiple surface waters. For example, if an MS4 discharges to two surface waters that are impaired, the permittee may have developed a PRP that combined the storm sewersheds (i.e., planning areas) of both surface waters and calculated load reductions for this combined area. If this was done and presented as a combined PRP, one final report should be completed and submitted.

All reports must include documentation sufficient to support the pollutant load reduction(s) being claimed for each implemented BMP.

The following explains how the PRP/TMDL Final Report should be completed.

### ***PRP or TMDL Plan Summary Section***

- Permittee Name – Enter the name of the permittee or co-permittee group.
- NPDES Permit No. – Enter the NPDES Permit Number assigned to the permittee.
- Plan Type – Check the appropriate box to indicate whether the final report is for a PRP, a TMDL Plan, or a combined PRP/TMDL Plan. Check the box for PRP or TMDL Plan, as appropriate, if the plan addresses only one surface water (e.g., Chesapeake Bay). Check the box for Combined PRP / TMDL Plan if the plan addresses multiple surface waters (e.g., a TMDL Plan for local waters combined with a PRP for the Chesapeake Bay).
- Plan Approval Date – List the date the PRP and/or TMDL Plan was approved by DEP.
- Required Completion Date – List the date by which the plan must be implemented to achieve pollutant load reductions required by the permit. Unless otherwise specified in the permit, the required completion deadline is five years from the plan approval date.
- Joint Plan? – Check the appropriate box (Yes or No) if the permittee collaborated in the development and implementation of a joint PRP or TMDL Plan. If Yes, attach to the final report a list of the names of all MS4 permittees and their NPDES Permit Numbers.

- Surface Waters Addressed by Plan – List all surface waters addressed by the PRP or TMDL Plan. Enter “Chesapeake Bay” if the permittee was not required to develop a plan for local waters.
- Permittee’s Planning Area – List the size of the permittee’s planning area in acres. For joint plans the permittee should exclude the planning areas of MS4 collaborators in this field.
- Total Planning Area (Joint Plans) – Enter the total planning area for joint plans (including the Permittee’s Planning Area), if applicable.
- Pollutant Load Reduction Calculation Methodology – Check the appropriate box to indicate the method used to determine the MS4’s existing (baseline) pollutant load in the planning area and the pollutant load treated by BMPs: Simplified Method, Mapshed, Model My Watershed, or Other. If Other is selected, enter a description.
- Baseline Pollutant Load – Planning Area – Identify the baseline pollutant load calculated for the planning area (in lbs/yr). This value should have been documented in the approved plan (or plan amendment). If adjustments were made to the baseline pollutant load to account for existing BMPs, enter the adjusted baselined from the approved plan. Permittees that were required to develop a PRP for the Chesapeake Bay (Appendix D of the permit) may enter only a baseline Total Suspended Solids (TSS) load, as it is presumed that when the required sediment load reduction is met, the appropriate nutrient load reductions will also be achieved. In such cases the permittee may enter “N/A” for the baseline Total Nitrogen (TN) and Total Phosphorus (TP) loads. For other PRPs or TMDL Plans that were not subject to this presumption, the permittee should enter the baseline TN and TP loads.

**NOTE** – TSS is synonymous with sediment.

- Pollutant Load Reduction Requirement – Enter the percentage of the baseline pollutant load that the permittee is required to reduce under the permit (e.g., 10% TSS load reduction). In addition, enter the pollutant load reduction, in lbs/yr, that must be achieved during the permit term as calculated and reported in the permittee’s approved PRP or TMDL Plan. If the baseline TN and TP loads were not required to be calculated, the permittee can enter “N/A” in these fields. For permittees implementing TMDL Plans, enter the short-term (5-year) reduction requirements.
- WLA Reduction Requirement – For permittees with TMDL Plans, enter the difference between the baseline pollutant loads and the wasteload allocation (WLA) identified in the TMDL (or otherwise calculated and approved by DEP). This is the long-term pollutant reduction objective under the TMDL and permit.

### ***BMP Implementation Section***

- Structural BMPs – Enter the number of structural BMPs implemented and the pollutant load reductions in lbs/yr achieved by all structural BMPs. If the permittee is participating in a joint plan that implemented structural BMP(s) with other permittees, the “joint BMP” should be included in the total number of structural BMPs implemented, but only the permittee’s portion of the load reduction achieved by the BMP should be reported in the Pollutant Load Reductions Achieved columns. For example, Municipalities A, B, and C implemented a joint PRP. One structural BMP was implemented in Municipality B. The total load reduction calculated for the BMP was 100,000 lbs/yr. The municipalities agreed that Municipalities A, B, and C would earn 30%, 40%, and 30% of the load reduction, respectively. In completing the final report, Municipalities A, B, and C would each identify one structural BMP and their share of the load reduction credit (i.e., 30,000, 40,000, and 30,000 lbs/yr, respectively). If, however Municipalities A, B, and C were co-permittees, the full reduction of 100,000 lbs/yr would be reported (and only one final report submitted).
- Non-Structural BMPs – Enter the number of non-structural BMPs implemented and the pollutant load reductions achieved by all non-structural BMPs. If the permittee is participating in a joint plan that implemented non-structural BMP(s) with other permittees, the “joint BMP” should be included in the total number of non-structural BMPs implemented, but only the permittee’s portion of the load reduction achieved by the BMP should be reported in the Pollutant Load Reductions Achieved columns.
- Total BMPs – Enter the total number of BMPs implemented by the permittee and the total pollutant reduction(s) achieved.
- BMP Attachments – A BMP summary form must be attached for each BMP the permittee is using towards meeting the pollutant load reduction requirement(s) of their permit. In instances where multiple permittees participated in a

joint plan and are sharing the credit generated by a joint BMP, each partner must include a copy of the appropriate BMP summary form(s). There are six BMP summary form templates (Attachments A through F). The permittee should check the box next to all BMP summary forms that are attached and enter the number of BMP summary forms attached. If a BMP was implemented for which there is no corresponding BMP summary form, check the box next to "BMP(s) have been implemented for which there are no attachments." If this box is checked the permittee must attach a description of the BMP, photographs, and calculations demonstrating the load reductions achieved.

### ***Compliance Determination Section***

Select Yes or No to indicate if the pollutant load reduction requirements of the permittee's PRP or TMDL Plan were met. If Yes, the remainder of this section can be left blank. If No, list the required load reduction(s) remaining in lbs/yr and as a percent of the total pollutant load reduction that was required. If the requirements of the PRP or TMDL Plan were not met, the permittee must attach an explanation for why the reduction requirements were not met and a schedule of compliance to complete implementation of the approved plan, including interim milestones.

### ***Certification***

A responsible official of the permittee must sign and date the report. For joint permittees, a Certification section signed by a responsible official from each permittee must be submitted with the PRP/TMDL Plan Final Report.

### ***BMP Summary Form Attachments***

#### Attachment A – Infiltration BMPs

- General Information:
  - Permittee Name – Enter the name of the permittee or co-permittees as identified on page 1 of the NPDES permit.
  - Permit No. – Enter the NPDES Permit Number for the permittee or co-permittees.
  - BMP Name – List the name of the BMP as identified in the approved plan.
  - Latitude and Longitude – Identify the latitude and longitude, in decimal degrees, at the center of the BMP to at least five decimal places.
  - Surface Waters – List the local surface waters that outflows from the BMP will enter.
  - Municipality and County – Enter the name(s) of county(ies) and municipality(ies) where the BMP is located.
  - Construction Completion – Check the appropriate box if construction of the BMP has been completed. If the box is checked, enter the date construction was completed.
  - Required Attachments: The following information must be provided to supplement Attachment A: 1) photographs of the BMP (preferably during and following construction); 2) BMP as-built drawings identifying all BMP components and the drainage area tributary to the BMP; and an O&M Plan for the BMP (which may be part of the as-built drawings). Electronic (PDF) submissions are encouraged. In addition, if the presumption that sediment (TSS) reductions will address nutrient reductions does not apply, calculations demonstrating that nutrient (TN and TP) reduction requirements were achieved must be attached. Note for joint BMPs (see below), only the "project sponsor" needs to submit the required attachments for the BMP (i.e., typically the permittee responsible for the jurisdiction where the BMP is located); however, all permittees sharing credit for the BMP must submit an attachment that illustrates the allocation of credit amongst the permittees.
  - Inspection/Monitoring Frequency – List the recommended inspection or monitoring frequency of the BMP (e.g., annually). If the information is described more completely in the O&M Plan, the permittee may enter "See O&M Plan."
  - Permits or Approvals Obtained – List any relevant state or federal permits obtained for construction of the BMP. Include the Permit Number in parentheses. For example, "PAG-02 General Permit (PAC010001)".

- Party Responsible for Long-Term O&M – Check the box for Permittee if the permittee will be responsible for long-term O&M of the BMP. If another party has accepted this responsibility, check the box for Other and identify the responsible party.
- Joint BMP? – If the BMP was constructed as part of a joint PRP and there will be more than one permittee sharing credit for the BMP's pollutant load reductions, check the box for Yes, otherwise check the box for No. If Yes is checked attach a list containing: 1) the names of all permittees sharing credit for the BMP; 2) the NPDES Permit Numbers of the permittees; and 3) the amount and percentage of load reduction credit allocated amongst the permittees.
- Type of BMP – Enter one of the following:
  - Wet Pond or Wetland
  - Dry Detention Basin
  - Dry Extended Detention Basin
  - Hydrodynamic Structure
  - Filtering Practice
  - Filter Strip Runoff Reduction
  - Filter Strip Stormwater Treatment
  - Bioswale
  - Forest Buffer
  - Regenerative Stormwater Conveyance (RSC)
  - Infiltration Practice with sand, vegetated
  - Bioretention – Raingarden (A/B soils with underdrain)
  - Bioretention – Raingarden (A/B soils without underdrain)
  - Bioretention – Raingarden (C/D soils with underdrain)
  - Bioretention – Raingarden (C/D soils without underdrain)
  - Vegetated Open Channels (A/B soils)
  - Vegetated Open Channels (C/D soils)
  - Permeable Pavement (A/B soils with underdrain)
  - Permeable Pavement (A/B soils without underdrain)
  - Permeable Pavement (C/D soils with underdrain)
  - Permeable Pavement (C/D soils without underdrain)

If the infiltration BMP cannot be identified by any of these types, enter "Other – ", and provide an appropriate description of the BMP.

- BMP Effectiveness Values – List the TSS, TN, and TP effectiveness values for the BMP and indicate the source used to determine the effectiveness values. If a source other than the MS4 Program's BMP Effectiveness Values Table or the Chesapeake Bay expert panel reports are used, list the source of the effectiveness values.
- BMP Construction:
  - BMP Infiltrating Surface Area – Report the bottom area of the BMP that will be used as the infiltrating surface, in square feet (ft<sup>2</sup>).
  - Ponding Depth – Identify the maximum depth of ponded stormwater in the BMP below the lowest orifice or outlet, in feet.
  - Underdrain – Check the appropriate box if an underdrain was installed.
  - Media Description – Provide a description of the media installed below the BMP bottom surface.

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- Media Depth – Enter the depth of media, in feet.
- Vegetated – Check the appropriate box if the infiltrating surface is vegetated.
- Loading Ratio – Report the loading ratio of the BMP by dividing the BMP Drainage Area (in ft<sup>2</sup>; see next section) by the BMP Infiltrating Surface Area (in ft<sup>2</sup>). If the loading ratio to the BMP exceeds the recommendations of Appendix C of the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual), attach documentation to demonstrate that the BMP is capable of treating the runoff volume that will be conveyed to the BMP up to the 2-year/24-hour storm event.
- Water Quality (WQ) Storage Volume – Report the volume of storage in the BMP from the maximum ponding depth to the infiltrating surface plus any media storage volume.
- TSS Load Delivered to BMP:
  - Total Drainage Area Treated by BMP (Treatment Area) – List the total drainage area treated by the BMP, in acres. To determine the loading ratio in the previous section, multiply this value by 43,560 to obtain the drainage area in ft<sup>2</sup>.
  - TSS Load Delivered to BMP – Simplified Method – If the Simplified Method was used to develop the PRP, enter the areas of impervious and pervious, in acres, within the Total Drainage Area Treated by BMP; the county-based impervious and pervious loading rates, in lbs/ac/yr (see Attachment B of DEP's PRP Instructions, 3800-PM-BCW0100k); and the TSS load delivered to the BMP from impervious and pervious areas, in lbs/yr. The Delivered Load is calculated by multiplying the areas by the loading rates. Enter the Total TSS Load Delivered to BMP (sum of impervious and pervious delivered loads). In lieu of completing this table, the permittee may submit calculations separately; check the box for Calculations attached if this is done. This box should also be checked, and separate calculations should be attached if TN and TP load reductions must be demonstrated.
  - TSS Load Delivered to BMP – Land Cover-Based Calculation Method – If a land use or cover-based calculation method was used to develop the PRP (i.e., MapShed or ModelMyWatershed), enter the land covers used within the Total Drainage Area Treated by BMP; the land cover loading rates used in the model, in lbs/ac/yr; and the TSS load delivered to the BMP from all land covers, in lbs/yr. The Delivered Load is calculated by multiplying the areas by the loading rates. Enter the Total TSS Load Delivered to BMP (sum of all land cover delivered loads). In lieu of completing this table, the permittee may submit calculations separately (see previous bullet).
- TSS Load Reduction Credit:
  - Calculate the TSS load reduction by multiplying the TSS Load Delivered to BMP by the TSS Effectiveness Value. If the permittee has a nutrient load reduction requirement, attach additional calculations to show the nutrient load reduction provided by the BMP.
  - Permittee Credit for Joint BMPs (if applicable) – For joint BMP projects, list the percentage of the TSS load reduction that is credited to the permittee and the permittee's portion of the TSS load reduction generated by the BMP (lbs/yr). If the BMP being reported is not a joint BMP, leave this question blank.

**NOTE** – If the permittee is completing the BMP summary form for a PCSM BMP that exceeds a Chapter 102 NPDES permit regulatory requirement, documentation must be provided that clearly demonstrates how the BMP exceeded the Chapter 102 regulatory requirements. MS4 permittees may take credit for only those reductions that will occur as a result of exceeding regulatory requirements.

**Attachment B – BMP Retrofits**

- General Information:
  - Enter the Permittee Name, Permit No., BMP Name, Latitude/Longitude, Surface Waters, Municipality, County, Construction Completion, Attachments, Inspection/Monitoring Frequency, Permits or Approvals Obtained, Party Responsible for Long-Term O&M, and Joint BMP information as explained for Attachment A.

- Effectiveness Values Source – BMP retrofits may be calculated as the difference between the DEP effectiveness values for the pre- and post-retrofit BMP type (see 3800-PM-BCW0100m; select “DEP”) or by using the retrofit removal adjustor curves found in the Chesapeake Bay retrofit expert panel report (select “CB Expert Panel Report”).
  - If the DEP effectiveness values method is used, list the pre-restoration and post-restoration BMP types and the difference in TSS effectiveness values from the DEP’s BMP Effectiveness Values Table. For example, an existing dry detention basin (10% TSS removal efficiency) is converted to a wet pond (60% TSS removal efficiency). Enter 50% for the “Retrofit TSS Effectiveness Value” (i.e., 60% - 10%).

**NOTE** – If the pre-restoration BMP type was a flood control BMP that provided no water quality benefit, the pre-restoration effectiveness value may be listed as 0.

- If the Retrofit Removal Adjustor Curves from the Retrofit Expert Panel Report are used, check the appropriate box to indicate if the BMP is a runoff reduction (RR) or sediment treatment (ST) BMP. List the runoff storage (RS) volume provided by the BMP, in acre-feet, and the impervious area (IA), in acres, in the BMP drainage area. The runoff storage volume is the BMP volume contained between the bottom of a basin and lowest outflow orifice plus any subsurface storage volume. Use the retrofit equation  $((RS \times 12)/IA)$  to determine the runoff depth captured per impervious acre (R/IA), in inches. Reference the appropriate retrofit removal adjustor curve (RR or ST) in the expert panel report to determine the effectiveness value for the BMP.

**NOTE** – Runoff reduction is defined as the total post-development runoff volume that is reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapotranspiration. Retrofit projects that achieve at least a 25% reduction of the annual runoff volume are classified as RR. Retrofit projects that employ a permanent pool, constructed wetlands or sand filters have less runoff reduction capability, and their removal rate is determined using the ST curve.

- BMP Construction: Complete this section as described for Attachment A.
- TSS Load Delivered to BMP: Complete this section as described for Attachment A.
- TSS Load Reduction Credit: Complete this section as described for Attachment A.

#### Attachment C - Stream Restoration BMPs

- General Information: Enter the Permittee Name, Permit No., BMP Name, Latitude/Longitude, Surface Waters, Municipality, County, Construction Completion, Attachments, Inspection/Monitoring Frequency, Permits or Approvals Obtained, Party Responsible for Long-Term O&M, and Joint BMP information as explained for Attachment A.
  - In addition to photographs (pre- and post-construction), as-built drawings, and an O&M Plan, attach the following information for stream restoration BMPs:
    - Documentation that the project meets the minimum qualifying criteria to be eligible for MS4 credit (see [Considerations of Stream Restoration Projects in Pennsylvania for Eligibility as an MS4 Best Management Practice](#)); and
    - If the stream or floodplain restoration project was designed under an expert panel protocol, all documentation required by the protocol to demonstrate how pollutant load reductions were calculated.
- Stream Restoration Type:
  - Credit Method – Select the credit calculation method that was used to determine the pollutant load reduction for the restoration. If a default rate was used to calculate pollutant load reductions, check the box for Simplified Method or Mapshed/Model My Watershed, as appropriate. If the Chesapeake Bay expert panel report protocols were used, check all protocols that apply.

**NOTE** – Regenerative stormwater conveyance (RSC) projects are infiltration BMPs and should be reported using Attachment A.

**NOTE** – If a default rate is used to calculate the stream restoration load reduction, the selected default rate must be consistent with how the permittee’s pollutant load reduction requirement was calculated in the approved PRP. Only permittees that used a land-use based modeling approach (Mapshed or Model My Watershed) are eligible to use the 115 lb/ft/yr default rate.

- Crediting Eligibility (Minimum Qualifying Criteria) – Select Yes or No to indicate if the restoration meets the minimum qualifying criteria for crediting. All stream restoration projects must attach documentation that demonstrates the restoration design is consistent with the minimum qualifying criteria listed in DEP’s [Considerations of Stream Restoration Projects in Pennsylvania for Eligibility as an MS4 Best Management Practice](#).

**NOTE** – If a stream restoration project meets most, but not all, of the minimum qualifying criteria, this does not automatically disqualify the project from being eligible for MS4 pollutant load reduction credit. However, if the restoration design does not meet all of the minimum qualifying criteria, the permittee must provide documentation that explains the project’s deviation from minimum qualifying criteria and demonstrates that the project will result in long-term stability of the streambed, streambanks, and floodplain.

- TSS Load Reduction – Default Rate:

- Total Restoration Length – Enter the total length of the restoration, in feet, at the centerline of the stream.
- Hard Armoring – If hard armoring was used to stabilize stream banks, enter the length of hard armoring, in feet, otherwise enter zero. Hard armoring is defined as hard, permanent structures used to protect critical infrastructure and stabilize banks. Examples of hard armoring include concrete retaining walls, sheet piling/planking, gabions, engineered block walls, A-jacks, and dumped riprap.
- Creditable with Limits – If “Creditable with Limits” bank armoring was included in the restoration, report the length of stream stabilized by Creditable with Limits practices. Creditable with Limits armoring is defined as large rock or boulder structures that harden a limited portion of a bank or bank toe in a localized area. Examples of this type of armoring include localized stone toe protection, boulder revetments, non-biodegradable soil stabilization mats, and imbricated riprap. If Creditable with Limits armoring was not used as part of the restoration design enter zero.
- Creditable with Limits Percent – If Creditable with Limits armoring was used in the design enter the percentage of the Total Restoration Length that used this practice, otherwise enter zero.
- Creditable Restoration Length (Default Rate) –
  - If hard armoring was used, subtract the length of hard armoring from the Total Restoration Length to determine the Creditable Restoration Length.
  - If Creditable with Limits armoring was used, subtract length in excess of 30% of the Total Restoration Length in which Creditable with Limits armoring was used. For example, if a 500-foot stream restoration project included Creditable with Limits armoring on 250 feet of the left bank and 200 feet of the right bank, the percentage of banks armored would be 45% (i.e.,  $(250 \text{ feet} + 200 \text{ feet}) / 2 / 500 \text{ feet}$ ). Since this percentage exceeds 30%, the difference of 15% (i.e.,  $45\% - 30\%$ ) cannot be included in the Creditable Restoration Length. In this example of a 500-foot restoration project, the Creditable Restoration Length would be 425 feet (i.e.,  $500 \text{ feet} \times (1 - 0.15)$ ).
- TSS Credit – Calculate the TSS Credit for restoration projects using the default rate by multiplying the Creditable Restoration Length (feet) by the default rate (lbs/ft/yr).
- Permittee Credit for Joint BMPs (if applicable) – For joint BMP projects, list the percentage of the TSS load reduction that is credited to the permittee and the permittee’s portion of the TSS load reduction generated by the BMP (lbs/yr). If the BMP being reported is not a joint BMP, leave this question blank.

If necessary, attach nutrient load reduction calculations.

- Pollutant Load Reductions (Expert Panel Protocols):
  - If the protocols from the stream restoration expert panel report were used, list the total restoration length, the acres of floodplain created (if applicable), and the calculated pollutant load reduction credits in lbs/yr. For plans that presume nutrient load reductions will be met when sediment load reductions are achieved, the permittee may enter "N/A" for TN and TP credits. Attach all credit calculations.
  - Permittee Credit for Joint BMPs (if applicable) – For joint BMP projects, list the percentage of the TSS load reduction that is credited to the permittee and the permittee's portion of the TSS load reduction generated by the BMP (lbs/yr). If the BMP being reported is not a joint BMP, leave this question blank.

Attachment D – Street Sweeping or Storm Sewer Solids Removal

- General Information: Enter the Permittee Name, Permit No., BMP Name, Latitude/Longitude, Surface Waters, Municipality, County, and Joint BMP information as explained for Attachment A. Also enter the average frequency of street sweeping or storm sewer solids removal throughout the permit term (e.g., 2/month).
  - Required attachments for street sweeping include documentation on sweeping frequency, the type of sweeper, and sweeping locations (i.e., a map). Where the mass loading approach is used to calculate TSS credit for either street sweeping or storm sewer solids removal, documentation must be attached that identifies the methods used to determine the portion of collected material that is eligible for credit (i.e., dry sediment) and the actual mass of collected materials. Also attach additional calculations for nutrient reductions if necessary.
- Crediting Method:
  - BMP Type – Check the appropriate box to indicate whether Attachment D is being completed for street sweeping or storm sewer solids removal. If the permittee has implemented both a street sweeping and storm sewer solids removal program, separate Attachment D forms should be completed for each BMP.
  - Method – Select the method from the [Street and Storm Drain Cleaning expert panel report](#) or DEP's Effectiveness Values Table that most closely aligns with the permittee's implementation of street sweeping or storm sewer solids removal.

**NOTE** – The street sweeping effectiveness values from DEP's Effectiveness Values Table may be used by permittees that conduct street sweeping at least 25 times annually.
  - Impervious area swept within planning area – List the total impervious area within the permittee's planning area that has been swept at the frequency identified in the expert panel report or DEP's Effectiveness Values Table. Areas outside of the permittee's planning area should not be included. This question may be left blank for permittees completing the form for storm sewer solids removal.
  - BMP Effectiveness Values – List the effectiveness values that correspond to the selection made for the crediting method. This section may be left blank for permittees completing the form for storm sewer solids removal.
- TSS Load Reduction – Efficiency Approach: This section must be completed by permittees calculating street sweeping TSS reductions using an efficiency value. - This section may be left blank for permittees completing the form for storm sewer solids removal.
  - If the Simplified Method was used to develop the plan, list the impervious acres within the planning area swept and the impervious loading rate for the county. Multiply acres of impervious swept by the loading rate to determine the TSS load generated within the BMP treatment area.
  - If a land cover or use-based calculation method (i.e., Mapshed or Model My Watershed) was used to develop the plan, identify each land cover within the area swept, the area of each land cover swept, and the TSS loading rate for each land cover. Multiply the area swept by the appropriate loading rate to determine the TSS load generated within the BMP treatment area. Report the total for all land covers.
  - Multiply the TSS load generated by the impervious area swept by the TSS effectiveness value to determine the TSS load reduction credit.

- TSS Load Reduction – Mass Loading Approach: This section must be completed by permittees calculating the sediment reduction achieved by street sweeping or storm sewer solids removal using the mass loading approach. This section may be left blank by permittees using an efficiency approach to calculate the TSS load reductions from street sweeping.
    - Provide the dry weight of sediment collected through street sweeping or storm sewer solids removal for each year of the permit term. Calculate the total weight of dry sediment collected during the permit term and divide by 5. The TSS credit that can be claimed using the mass loading approach is the average annual TSS reduction achieved during the permit term.
- NOTE** – Only the weight of dry sediment can be credited. In order to determine the appropriate credit, permittees must subtract the weight of any trash, water, and solids that are too large to be classified as total suspended solids (solids greater than 250 microns in size) that may be collected during street sweeping and/or storm sewer solids removal. To remove the weight of non-TSS material, permittees may screen and dry collected material before weighing, or make adjustments to the weight of collected material using the adjustment factors in the [Street and Storm Drain Cleaning expert panel report](#).
- Permittee Credit for Joint BMPs (if applicable) – For joint BMP projects, list the percentage of the TSS load reduction that is credited to the permittee and the permittee's portion of the TSS load reduction generated by the BMP (lbs/yr). If the BMP being reported is not a joint BMP, leave this question blank.

#### Attachment E – Tree Planting

Attachment E may be used by permittees that have planted trees that are not part of a riparian buffer. Only those trees that have not already been reported as part of a riparian buffer and are located within the permittee's planning area may be reported using Attachment E.

- General Information: Enter the Permittee Name, Permit No., BMP Name, Latitude/Longitude, Surface Waters, Municipality, County, and Joint BMP information as explained for Attachment A.
  - Required attachments for tree planting include a map showing the locations of all plantings within the planning area, an O&M Plan for maintaining the plantings, site photographs, and additional calculations if nutrient reductions are required.
- BMP Treatment Area – Enter the number of trees planted within the permittee's planning area and multiply this number by 0.01. DEP estimates that 100 fully mature trees of mixed species (both deciduous and non-deciduous) provide pollutant load reductions for the equivalent of one acre (i.e., one mature tree = 0.01 acre).
- TSS Load Reduction Credit – List the pollutant loading rate for the sites where the trees were planted and indicate how this loading rate was determined (Simplified Method or a land cover or use-based calculation method). Multiply the pollutant load generated by the BMP treatment area by the TSS effectiveness value for tree planting (20%) to determine the TSS load reduction credit.
  - Permittee Credit for Joint BMPs (if applicable) - For joint BMP projects, list the percentage of the TSS load reduction that is credited to the permittee and the permittee's portion of the TSS load reduction generated by the BMP (lbs/yr). If the BMP being reported is not a joint BMP, leave this question blank.

#### Attachment F – Non-structural (Annual Practice) BMPs

- General Information: Enter the Permittee Name, Permit No., BMP Name, Latitude/Longitude, Surface Waters, Municipality, County, and Joint BMP information as explained for Attachment A.
  - Required attachments for non-structural BMPs include photographs, the O&M Plan, and additional calculations if nutrient reductions are required. When annual practice BMPs are implemented on agricultural lands, documentation of the existing regulatory requirements and calculations must be provided to demonstrate that the practice goes above and beyond regulatory requirements.

- Eligibility and BMP Type: In order for an annual practice BMP to be eligible for MS4 credit the site where BMP is implemented must be within the permittee's planning area, and the annual practice must not be required by a regulatory requirement or must go above and beyond the regulatory requirement. For example, BMPs that are prescribed to implement an Ag E&S plan or Manure Management Plan are not eligible for MS4 credit. Check the appropriate boxes to indicate whether the BMP is located in the planning area and whether the BMP is required to meet regulatory requirements.
  - BMP Type – Check the appropriate box to indicate the type of BMP. If Other is checked, add a description.
  - BMP Effectiveness Values – List the effectiveness values for the BMP. Check the box for Chesapeake Bay Expert Panel Report if an expert panel report is the source of the effectiveness values. Otherwise check the box for Other and indicate the source used to determine the effectiveness values.
- BMP Implementation Area – Report the area, in acres, where the BMP is being implemented.
  - TSS Load Delivered to BMP – Simplified Method – If the Simplified Method was used to develop the PRP, enter the areas of impervious and pervious, in acres, within the Total Drainage Area Treated by BMP; the county-based impervious and pervious loading rates, in lbs/ac/yr (see Attachment B of DEP's PRP Instructions, 3800-PM-BCW0100k); and the TSS load delivered to the BMP from impervious and pervious areas, in lbs/yr. The Delivered Load is calculated by multiplying the areas by the loading rates. Enter the Total TSS Load Delivered to BMP (sum of impervious and pervious delivered loads). In lieu of completing this table, the permittee may submit calculations separately; check the box for Calculations attached if this is done. This box should also be checked, and separate calculations should be attached if TN and TP load reductions must be demonstrated.
  - TSS Load Delivered to BMP – Land Cover-Based Calculation Method – If a land use or cover-based calculation method was used to develop the PRP (i.e., MapShed or ModelMyWatershed), enter the land covers used within the Total Drainage Area Treated by BMP; the land cover loading rates used in the model, in lbs/ac/yr; and the TSS load delivered to the BMP from all land covers, in lbs/yr. The Delivered Load is calculated by multiplying the areas by the loading rates. Enter the Total TSS Load Delivered to BMP (sum of all land cover delivered loads). In lieu of completing this table, the permittee may submit calculations separately (see previous bullet).
- TSS Load Reduction Credit – Complete this section as described for Attachment A.