pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2 INSTRUCTIONS

PCSM Module 2 (3800-PM-BCW0406b) must be attached to the permit application or Notice of Intent (NOI) unless the project is considered a site restoration project as indicated on the application or NOI or unless the NOI Instructions specify that PCSM Module 2 is not required. Completion of PCSM Module 2 constitutes a PCSM Plan required by 25 Pa. Code § 102.8(f) when accompanied by PCSM Plan Drawings and supporting calculations. A separate PCSM narrative is not required.

NOTE 1 – Certain information required by 25 Pa. Code § 102.8(f) is intentionally left out of PCSM Module 2 because the same information is required by E&S Module 1. For these instances the Department of Environmental Protection (DEP) has approved the E&S and PCSM Plans to be combined, in accordance with 25 Pa. Code §§ 102.4(b)(5)(xiv) and 102.8(d).

Enter the Applicant Name and the Project Site Name as listed on the application or NOI.

Pre-Development Site Characterization

1. Check the appropriate box (Yes or No) to indicate whether a pre-development site characterization was completed for the project. If Yes, describe the activities undertaken in the space provided or in a separate narrative (a). If No, explain why a pre-development site characterization was not completed (b). In general, a pre-development site characterization to satisfy 25 Pa. Code § 102.8(g)(1) is required unless 1) the project qualifies as a site restoration project or 2) compliance with 25 Pa. Code 102.8(g)(2) and (3) will be achieved entirely through the use of stormwater capture and use and/or riparian forest buffer SCMs. For projects meeting either of these criteria, the applicant may leave the remainder of the Pre-Development Site Characterization section blank, except for Question #5 below.

2. Check the appropriate box to indicate whether test pits and/or boreholes were completed for the pre-development site characterization and report the number completed across the project site. **The attachment of test pit / boring logs is optional** but may be submitted by the applicant if there is information that is not identified in DEP's Pre-Development Site Characterization Spreadsheet that would assist DEP or delegated county conservation districts (CCDs) with review of Module 2. If not submitted, DEP/CCD may request this information during its review.

3. Report the number of infiltration (i.e., saturated hydraulic conductivity) tests completed and the field method(s) used.

4. List the area of the project site, in acres, as reported in the application or NOI. Enter the area that was investigated for potential infiltration capabilities, in acres. **Attach to this module a map illustrating the area investigated for infiltration capabilities (including areas excluded from the investigation)**.

5. Check the appropriate box (Yes or No) to indicate whether DEP's Pre-Development Site Characterization (PDSC) Spreadsheet has been completed and is attached to this module. This Spreadsheet is utilized to evaluate whether an adequate pre-development site characterization has been completed. The PDSC Spreadsheet is available on DEP's website (visit www.dep.pa.gov/constructionstormwater, select "E&S Resources").

6. Check the appropriate box to indicate whether the infiltration project of the project site is limited, marginal or feasible using the following criteria:

   - Where all infiltration test results across the project site are less than or equal to 0.25 inch/hour, select limited.
   - Where one or more infiltration test results across the project site are greater than 0.25 inch/hour but less than 0.4 inch/hour, selected marginal.

- Where one or more infiltration test results across the project site are greater than 0.4 inch/hour, select feasible.

7. If the box for limited is checked or if there are other site-specific issues on the project site that would make infiltration undesirable, explain the limitations.

8. Check the appropriate box (Yes or No) to indicate whether the project site is located in an area with known karst features. The PCSM Plan preparer must review information, maps and reports maintained by the Pennsylvania Department of Conservation and Natural Resources (DCNR) on carbonate rock formations and sinkholes for all sites in the following counties, at a minimum: Adams, Bedford, Berks, Blair, Bucks, Centre, Chester, Clinton, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Lancaster, Lebanon, Lehigh, Lycoming, Mifflin, Montgomery, Northampton, and York.

   If Yes to #8, check the appropriate box (Yes or No) to indicate whether a subsurface geotechnical investigation was performed and whether a geotechnical report is attached. DEP expects that a geotechnical investigation will be performed for sites that: are within 0.5 mile of identified sinkholes and closed depressions on DCNR's published maps of sinkholes and karst features; are within 0.5 mile of a "Karst Feature" on DEP's eMapPA; or where there is a reasonable likelihood that active karst geology exists on a site requiring the design of stormwater management.

9. Check the appropriate box (Yes or No) to indicate whether there are natural stormwater features on-site that will be protected from development. Natural stormwater features are generally existing lands that receive stormwater runoff and will continue to receive runoff from a proposed land disturbance following construction activities. Natural stormwater features are vegetated lands that are not proposed to be disturbed during construction. These lands may or may not be riparian buffers. For example, meadows or forests that are not hydraulically connected to surface waters but will receive stormwater from proposed land disturbance can be considered natural stormwater features. Natural stormwater features are not areas that are planted or maintained as turf grass.

   If Yes to #8, describe the natural stormwater features and any increase or decrease in stormwater runoff volume to the features resulting from development.

   NOTE 2 – If stormwater management credit will be claimed because natural stormwater features will serve as a PCSM SCM, the natural stormwater features must be protected from future development through a deed restriction, conservation easement, or other legal mechanism.

Points of Analysis (POAs)

This section must be completed for all projects with the exception of those qualifying as site restoration projects.

Points of analysis are locations on a project site boundary, or at a surface water, that receive stormwater runoff from all, or a portion of, a project site and where stormwater management requirements of 25 Pa. Code § 102.8(g) must be demonstrated. POAs are selected considering both pre-construction and post-construction conditions. All runoff from a project site must be accounted for at one or more POAs. POAs may or may not be co-located with discharge points (DPs).

Identify all POAs used for the stormwater analysis for the entire project site. All surface waters receiving stormwater from the project site must be accounted for. All POAs must also be identified on PCSM Plan Drawings.

- Identify the POA identification (ID) number. Number POAs sequentially starting with 001. To distinguish between POAs and DPs on plan drawings, it is recommended that the prefixes "POA" and "DP" be used (e.g., POA-001, DP-001) and/or POAs and DPs be identified by different colors.
- Enter the latitude and longitude coordinates in decimal degree format with a minimum of five digits to the right of the decimal place.
- Enter the drainage area (DA), in acres, to the POA from the project site.
- Report the name of the surface water that will receive stormwater from the project site at or downstream of the POA.
- List the drainage area (DA), in acres, of the watershed upstream of the location on the surface water that will receive stormwater from the project site.

PCSM SCM Inventory

This section must be completed for all projects where structural or non-structural PCSM SCMs will be installed. This section can be skipped for projects qualifying as site restoration projects.

1. Identify all PCSM SCMs planned for the project site.

   - Provide an SCM ID number for each listed SCM, starting at one. If there are two SCMs in series, each SCM should be listed on a separate row with a separate number. These SCM ID numbers should also be identified on PCSM Plan Drawings.
   - List the name of the SCM. Use the name that exists in published DEP guidance wherever possible.
   - Report the latitude and longitude coordinates at the center of the SCM in decimal degree format, where a minimum of five digits is reported to the right of the decimal place. For SCMs that are activities, latitude and longitude may remain blank.
   - Report the drainage area (DA) treated by the SCM, in acres.
   - Identify the PCSM Objective that the SCM satisfies (i.e., A, B, C or D). See Table 3-1 of the draft Pennsylvania PCSM Manual (386-0300-001).
   - Explain any deviations from the PCSM Manual in the space provided. For example, if the PCSM Manual recommends a ponding depth no more than two feet and the SCM has been designed for 2.5 feet of ponding depth, report that deviation here. Attach a separate sheet if necessary to explain all deviations.

2. Report the area within the limit of disturbance (LOD, i.e., earth disturbance area) that will not be routed to an SCM or otherwise treated by an SCM following construction. Also report the area within the project site that will not be routed to or treated by an SCM following construction. For example, a project site is 10 acres and the earth disturbance area will be five acres. Four acres within the earth disturbance area will be treated by an SCM, and one additional acre outside of the LOD, within the project site area, will be treated by an SCM. Report "1 acre" for the area not treated within the earth disturbance area and "5 acres" for the area not treated within the project site area.

3. Check the appropriate box if one or more SCMs will be located off-site (i.e., outside of the project site boundary). If the box is checked, list the IDs of the SCM(s) that will be located off-site.

4. In the table provided list the critical stages for all SCMs and identify the licensed professional and/or company that will sign SCM Construction Certification forms for the SCM.

   - Enter the SCM ID number as done for question #1 in this section.
   - Identify the critical stages for each SCM. Enter one critical stage per row. An example is provided below. Critical stages should, at a minimum, be those identified in the draft Pennsylvania PCSM Manual.
   - List the name of the licensed professional (LP) that is expected to sign the SCM Construction Certification form for the SCM.

     NOTE 3 – The PAG-02 General Permit and individual NPDES permits require the completion of an SCM Construction Certification form for each structural PCSM SCM and submission to DEP/CCD within 30 days of completion of the SCM. SCM Construction Certification forms provide documentation that an LP or designee was on-site and responsible during critical stages of SCM construction. While a non-licensed designee may provide contractor oversight during critical stages, an LP is responsible for verifying that the oversight resulted in proper construction and an LP must sign the forms.

   - List the name of the company that the listed LP is employed by. Alternatively, if a specific individual cannot be identified at the time of completion of this module but a company can be identified, the LP Name column may be left blank and the name of a company may be entered. This module will not be considered complete unless either an LP Name or Company is entered.
   - If an LP Name and Company are entered, check the box for "LP Employed by Company". If LP Name is left blank but a Company name is entered, check the box for "LP Employed by Company" to certify that the Company has on staff one or more LPs. It is expected that this box will always be checked.
   - If the applicant has entered into a service contract with the LP or Company for construction oversight at the time this module is submitted to DEP/CCD, check the appropriate box.

NOTE 4 – The purpose of this table is to emphasize the importance of planning for the oversight of SCM construction on the part of the applicant. A contract between the applicant and an LP or Company employing an LP is strongly recommended. The applicant may decide to utilize the services of an LP not identified in this module following commencement of construction. However, failure of a permittee to assure proper SCM construction oversight and submit complete SCM Construction Certification forms signed by an LP may result in enforcement by DEP/CCD.

Stormwater Analysis – Runoff Volume

Applicants of site restoration projects may skip this section. Otherwise, a Stormwater Analysis must be performed that addresses each discharge point. DEP allows applicants to complete the analysis on a surface water basis (i.e., all discharge points to a single surface water may be considered collectively) or on a POA by POA basis. Attach additional sheets as necessary.

At the top of the form, identify the Surface Water Name and the POA ID Number(s) (e.g., 001, 002).

1. **Design Standard – Act 167**. Check the box if the applicant is using a design standard for volume management that is contained in an Act 167 Plan approved by DEP within the past five years. In general, DEP/CCD will only accept design standards based on Act 167 Plans when those plans have been approved by DEP within the past five years. DEP/CCD may accept design standards in Act 167 Plans that are older than five years when proposed as an alternative design standard.

2. **Design Standard – Manage Net Change**. Check the box if the applicant is using the net change in the 2-year/24-hour storm, comparing post-construction conditions to pre-construction conditions, as the volume management design standard.

3. **Design Standard – Alternative**. Check the box if the applicant is using a volume management design standard that differs from an Act 167 Plan and the net change in the 2-year/24-hour storm. While use of alternative design standards is authorized by 25 Pa. Code § 102.8(g)(2)(iv), please be advised that NOIs using an alternative design standard may require additional review by DEP/CCD.

4. **PCSM Spreadsheet**. Check the box if the Volume Worksheet in DEP's PCSM Spreadsheet was used for the stormwater volume management analysis and if a printout of the Volume Worksheet is attached. The PCSM Spreadsheet is available at www.dep.pa.gov/constructionstormwater, select "E&S Resources". The PCSM Spreadsheet uses the net change in the 2-year/24-hour storm as the design standard and calculates infiltration and evapotranspiration (ET) credits for selected SCMs using DEP-approved methods. If a completed Volume Worksheet is attached to the NOI, the applicant may skip questions #5-#9 in this section and may omit supporting stormwater analysis calculations.

5. **2-Year/24-Hour Storm Event**. Enter the total precipitation associated with the 2-year/24-hour storm event for the project site location, in inches. In addition, enter the source for the precipitation amount reported in question #5. NOAA Atlas 14 values are preferred, but other sources may be used.

6. **Pre-Construction Volume**. Calculate and report the total stormwater runoff volume, in cubic feet (CF), for the earth disturbance area under pre-construction conditions. If the Volume Worksheet is not attached, attach calculations supporting the reported value and check the appropriate box.

7. **Post-Construction Volume**. Calculate and report the total stormwater runoff volume, in CF, for the earth disturbance area under post-construction conditions (i.e., the runoff volume before PCSM SCMs are implemented). If the Volume Worksheet is not attached, attach calculations supporting the reported value and check the appropriate box.

8. **Net Change**. Report the difference, in CF, between Post-Construction Volume (i.e., question #7) and Pre-Construction Volume (i.e., question #6).

9. **Structural BMPs**. Report the following information for structural BMPs that will treat post-construction stormwater discharging to the surface water. If the Volume Worksheet is not attached, attach calculations supporting the information reported in the table.

   - **SCM ID** – List the SCM ID number as reported in the PCSM SCM Inventory section.

   - **Series** – SCMs that are in series should be entered in the same order they will be configured in the field. For example, a vegetated swale that is followed by a rain garden should be entered with the vegetated swale first and the rain garden in the next row. When SCMs are in series, select the SCM number that the SCM is in series with. If an SCM is not in series, enter "-". SCMs that are in series are separate and distinct SCMs, such as a vegetated swale followed by a rain garden. An SCM's components cannot be broken down and treated as separate SCMs. For example, a rain garden that dewaters in more than 24 hours cannot be broken into soil amendments followed by a dry extended detention basin.

   - **Volume Routed to SCM (CF)** – Calculate and report the volume routed to the SCM during the 2-year/24-hour storm event, in cubic feet (CF). Include the area associated with the SCM as part of the volume calculation, as applicable. For example, the volume routed to an infiltration basin must include stormwater from the drainage area routed to the SCM along with direct precipitation on the infiltration basin. As another example, for a vegetated swale that reduces the runoff volume and then discharges to a rain garden, the volume routed to the rain garden would not include the volume reduced by the vegetated swale.

   - **Infiltration Area (SF)** – Enter the infiltration area of the SCM in square feet (SF), if applicable. If the SCM is not designed as an infiltration BMP, leave this field blank.

   - **Infiltration Rate (in/hr)** – Report the design saturated hydraulic conductivity (Ksat) (infiltration rate) associated with the infiltration area, in inches per hour (in/hr) utilizing methods contained in Appendix B of the draft Pennsylvania PCSM Manual or other published and defensible methods. If the SCM is not designed as an infiltration BMP, leave this field blank. The design infiltration rate value entered should be the tested infiltration rate adjusted with factors of safety.

   - **Infiltration Period (days)** – Select the infiltration period, in days, for site-wide structural SCMs. DEP may accept infiltration periods up to four days (96 hours) for certain SCMs in accordance with the PCSM Manual. However, 1) the maximum ponding depth for infiltration and bioretention BMPs may not exceed two feet at the 2-year/24-hour storm event, and 2) local ordinance requirements must be met, where applicable. Many local ordinances require infiltration periods no greater than three days (72 hours).

   - **Vegetated? (Veg?)** – Check the box if the structural SCM will be "vegetated." A vegetated PCSM BMP is a permanent SCM where vegetation is a dominant or significant component within the storage area. Vegetation must include species other than lawn/turf grasses. Grasses may be used but may not be the only species planted.

   - **Media Depth (ft)** – Enter the design depth of media used for the SCM, in feet (e.g., 1.5 feet of planting soil for a rain garden or two feet of stone for an infiltration trench). This does not apply to certain SCMs. If an underdrain is used, report the depth from the bottom of the media to the invert of the underdrain.

   - **Storage Volume (CF)** – Enter the design storage volume for the SCM in cubic feet (CF). For storage within media, utilize an appropriate void space percentage for the chosen media (e.g., typically 30-40%). Note that storage volume is not a credit because it does not represent volume reduction; when storage volume infiltrates, evaporates, transpires, is released, or otherwise is reused, storage volume converts to credit.

   - **Infiltration Credit (CF)** – Report the infiltration credit for the SCM. The approved calculation for infiltration credit is identified in DEP's PCSM Spreadsheet and instructions. Alternative methods for calculating this credit may be proposed but may require additional review by DEP/CCD.

   - **ET Credit (CF)** – Report the evapotranspiration (ET) credit for the SCM. The approved calculation for ET credit is identified in DEP's PCSM Spreadsheet and instructions. Alternative methods for calculating this credit may be proposed but may require additional review by DEP/CCD.

To demonstrate that the selected SCMs will provide adequate volume reduction and/or management credit to offset the net increase in stormwater volume, calculate and enter the following below the table for question #9:

- **Total Infiltration & ET Credits (CF)** – Sum the infiltration and ET credits for all SCMs and report the value in the space provided.

- **Other Credits (CF)** – If other volume credits are proposed, provide as an attachment a detailed description of the proposed SCMs and calculations warranting the credit, and report the value in the space provided.

- **Managed Release Credits (CF)** – If some portion of the volume required to be reduced or managed will be released using a Managed Release Concept (MRC) SCM, the applicant must attach the MRC Design Summary Sheet and provide a detailed explanation of the design as an attachment to Module 2. If applicable, enter the number of Managed Release Credits in the space provided. This value should correspond to the value entered for "2-Yr/24-Hr Volume Managed (cf)" on the MRC Design Summary Sheet.

- **Volume Required to Reduce/Manage (CF)** – Report the volume that must be reduced or managed. If using the design standard for managing the net change for storms up to and including the 2-year/24-hour storm, enter the value reported for question #8. Otherwise report the volume that is supported by an approved Act 167 Plan or other alternative, with appropriate justification attached to the module as necessary.

- **Total Credits** – Sum the values for Total Infiltration & ET Credits, Other Credits, and Managed Release Credits and report the value in the space provided. If this value exceeds the Volume Required to Reduce/Manage the stormwater analysis for runoff volume has been satisfied.

Stormwater Analysis – Peak Rate

Applicants of site restoration projects may skip this section. Otherwise, a Stormwater Analysis must be performed that addresses each POA. DEP allows applicants to complete the analysis on a surface water basis (i.e., all discharge points to a single surface water may be considered collectively) or a POA by POA basis. Attach additional sheets as necessary.

At the top of the form, identify the Surface Water Name and the POA ID Number(s) (e.g., 001, 002).

1. **Design Standard – Act 167**. Check the box if the applicant is using a design standard for rate control that is contained in an Act 167 Plan approved by DEP within the past five years. In general DEP/CCD will only accept design standards based upon Act 167 Plans when those plans have been approved by DEP within the past five years.

2. **Design Standard – Manage Net Change**. Check the box if the applicant is using the net change in peak rates for the 2-, 10-, 50-, and 100-year/24-hour storms, comparing post-construction conditions to pre-construction conditions, as the rate control design standard.

3. **Design Standard – Alternative**. Check the box if the applicant is using a rate control design standard that differs from an Act 167 Plan and the net change in the 2-, 10-, 50-, and 100-year/24-hour storms. While use of alternative design standards is authorized by 25 Pa. Code § 102.8(g)(3)(iii), please be advised that NOIs using an alternative design standard may require additional review by DEP/CCD.

4. **PCSM Spreadsheet**. Check the box if the Rate Worksheet in DEP's PCSM Spreadsheet was used for the peak rate analysis and if a printout of the Rate Worksheet is attached. The PCSM Spreadsheet is available at www.dep.pa.gov/constructionstormwater (select "E&S Resources"). The PCSM Spreadsheet uses the net change in peak rate for the 2-, 10-, 50-, and 100-year/24-hour storms as the design standard. Note that the Rate Worksheet is not suitable for large drainage areas. If a completed Rate Worksheet is attached to the NOI, the applicant may skip the remainder of this section and may omit supporting calculations. If the Rate Worksheet is not used to calculate peak rates, the applicant must complete the remainder of this section and must submit supporting calculations. Note that if an applicant only completes the summary of peak rates table in the Rate Worksheet, the remainder of this section must be completed and supporting calculations must be submitted.

5. **Alternative Calculations**. If an applicant is required to complete this section and the Rate Worksheet is not attached to the NOI, the applicant must submit supporting calculations in an alternative format as an attachment to the NOI and must complete the remainder of this section.

6. **Precipitation Amounts**. Enter the total precipitation associated with the 2-, 10-, 50-, and 100-year/24-hour storms for the project site location, in inches. In addition, enter the source of the precipitation amounts reported in question #6. NOAA Atlas 14 values are preferred, but other sources may be used.

7. **Peak Discharge Rates, without BMPs**. Report the peak discharge rates, in cubic feet per second (cfs), for pre- and post-construction conditions without BMPs through time of concentration or other analyses. Report total rates for each storm event, summed for all flow patterns. Also report the difference between pre- and post-construction discharge rates (i.e., post-construction rate minus pre-construction rate).

8. **Rate Control BMPs**. Identify all BMPs used to mitigate peak rate differences between pre- and post-construction conditions. Report the calculated inflow and outflow rates to and from the BMP at each storm event. If BMPs are in series, specify the order of BMPs in the BMP ID column (e.g., BMP 1 in series with BMP 2).

9. **Peak Discharge Rates, with BMPs**. Report the peak discharge rates, in cfs, for pre- and post-construction conditions without BMPs, as reported in question #7, as well as the peak discharge rates for post-construction conditions with BMPs. Report the difference between pre- and post-construction discharge rates (i.e., post-construction rate with BMPs minus pre-construction rate).

Stormwater Analysis – Water Quality

Applicants of site restoration projects may skip this section. Otherwise, a Stormwater Analysis must be performed that addresses each POA. DEP allows applicants to complete the analysis on a surface water basis, i.e., all discharge points to a single surface water may be considered collectively, or a POA by POA basis.

PCSM Spreadsheet. All PAG-02 applicants must check this box and attach to the NOI a printout of the Quality Worksheet in the PCSM Spreadsheet demonstrating that pollutant loads for Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN) following construction will not exceed pre-construction pollutant loads for storms up to and including the 2-year/24-hour storm. See the instructions to the PCSM Spreadsheet for additional information on the Quality Worksheet.

Other Information

1. **Long-term O&M**. Check the box if a long-term operation and maintenance (O&M) plan has been prepared for each SCM and will be recorded with a legal instrument for each property containing an SCM.

2. **PCSM Plan Drawings**. Check the box if PCSM Plan Drawings have been developed and are attached to the NOI.

3. **Consistency**. Check the box to indicate that the PCSM Plan has been planned, designed and will be implemented to be consistent with the E&S Plan.

4. **Waste Management**. Check the box if recycling and proper disposal of materials associated with PCSM SCMs are addressed as part of long-term O&M of the PCSM SCMs.

5. **Wetlands**. Check the box if there are stormwater discharges from the project site to wetlands on the site. If checked, report the drainage areas (acres) to the wetlands for the pre- and post-construction conditions and the volume of runoff (CF) draining to the wetlands for the pre- and post-construction conditions up to the 2-year/24-hour storm event. If there will be a projected increase in volume draining to the wetlands up to the 2-year/24-hour storm event following construction, report the maximum anticipated short-term ponding depth increase (%), determined through hydraulic modeling or calculations (attach model results or calculations to this module). See the draft Pennsylvania PCSM Manual for guidance.

   NOTE 5 – If a reduction of flow is anticipated to a wetland following construction, DEP/CCD may request that an assessment be performed to determine if there will be an adverse impact to the wetland.

6. **Sequence**. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities. If the sequence is provided on the PCSM Plan Drawings, identify this in the space provided (including the location in the drawings).

   NOTE 6 – The PCSM sequence must include the installation and construction steps necessary to construct and implement each PCSM SCM.

7. **Sensitive Features**. Identify the presence of any naturally occurring soil conditions or geologic formations (e.g., karst) that may have the potential to cause pollution after earth disturbance activities are completed and the PCSM SCMs are operational and identify plans that will be implemented to avoid or minimize potential pollution caused by these features. If no such features are known, the applicant may report, "unknown" or "none". These sensitive areas must also be identified on the PCSM Plan Drawings.

8. **Thermal Impacts**. Check the appropriate box to indicate whether any of the following conditions are anticipated:

   - A peak rate control SCM (i.e., PCSM Objective D SCM in the draft Pennsylvania PCSM Manual) is proposed that will receive stormwater from a drainage area containing more than 25% impervious surface that exceeds 10% of the receiving surface water's watershed area.
   - A Wet Basin or Engineered Stormwater Treatment Wetland is proposed that does not include shading and/or a reversed slope outlet pipe.
   - An impervious undetained area exceeds 10% of the receiving water's watershed area.

   If any of these criteria are met, the applicant must prepare a quantitative thermal impact analysis and attach it to Module 2. The quantitative analysis should generally involve a mass balance approach where the expected peak temperature and rate of stormwater discharges are evaluated with the expected peak temperature and rate of surface water flows at the 1.2-inch/2-hour storm event, and the in stream temperature following complete mix is compared to a corresponding temperature criterion in 25 Pa. Code Chapter 93. Other scientifically sound approaches may be used. Ultimately the analysis should demonstrate that maximum daily temperatures will not exceed Chapter 93 temperature criteria during worst case (summer) conditions, unless background temperatures exceed the criteria. Where discharges are to swales or ephemeral streams, the analysis should consider the first point downstream with aquatic life.

Impervious Surfaces (Multi-Lot Development Only)

Complete this section if 1) the project site includes more than one lot or tax parcel and 2) it is expected that the lots will be sold following receipt of a Chapter 102 permit. Attach additional sheets as necessary.

- **Tax Parcel / Lot ID No.** – List the tax parcel or lot ID number.

- **SCM ID(s) Used to Treat Lot Stormwater** – Report the SCM IDs that are planned to treat stormwater from the lot for rate and volume/water quality.

- **Lot Area** – Enter the area of the lot in square feet (SF).

- **Planned Impervious** – Report the planned impervious area on the lot, in SF. This value should correlate to the impervious identified on PCSM Plan Drawings.

- **Maximum Allowable Impervious, As Designed** – Report the maximum allowable impervious on the lot according to the stormwater analysis and SCM design, in SF. This value should not be less than the value for Planned Impervious.

- **Maximum Allowable Impervious, Per Ordinance** – List the maximum allowable impervious area under a local ordinance for the lot, if applicable. For example, if an ordinance identifies a maximum impervious coverage of 50% and the lot is 40,000 SF, enter 20,000 SF.

- **Objective Met?** – Check the box if either 1) Maximum Allowable Impervious, As Designed is at least 110% of Planned Impervious or 2) Planned Impervious is equal to Maximum Allowable Impervious, Per Ordinance. If the

box is checked the permittee will not be responsible for identifying any new impervious added to a lot on record drawings after a lot is sold during the term of permit coverage. If not checked, the permittee is responsible for verifying as-built impervious area on the lot for record drawings.

PCSM Plan Preparer

The preparer of the PCSM Plan for the project must complete this section.

If True, check the box next to the statement, "I am trained and experienced in PCSM methods." In that statement, "trained and experienced" also refers to the size and scope of the project. Enter the number of years of experience the PCSM Plan preparer has in preparing PCSM Plans. Check the box next to the statement, "I am a licensed professional" if the PCSM Plan Developer is a professional engineer (PE), registered landscape architect (RLA), professional geologist (PG) or professional land surveyor (PLS) licensed to practice in this Commonwealth. Enter the name of the PCSM Plan Developer, the business title (if applicable), the company that employs the PCSM Plan Developer, mailing address, city, state, ZIP code (including 4-digit extension), phone number and email address. If the PCSM Plan Developer is a licensed professional, enter the License Type (i.e., PE, RLA, PG, or PLS), License No., and Expiration ("Exp.") Date of the license; otherwise, leave these fields blank.

The PCSM Plan preparer must sign and date this section at the location specified. The signature attests to the accuracy of the information provided and to the PCSM Plan preparer's understanding that the PCSM Plan is complete and conforms to Chapter 102 requirements. Note that a PCSM Plan preparer need not be a licensed professional, but must be a person trained and experienced in PCSM design methods and techniques applicable to the size and scope of the project being designed.

List the names of all individuals who assisted the PCSM Plan preparer with the development of the PCSM Plan and the company they are employed by, if applicable. Enter the field of expertise (e.g., engineering, geology, wetlands science, botany) of each individual and check the box in the "LP?" column if the individual is a licensed professional. If licensed, enter the License Type (PE, RLA, PG, or PLS). Attach a separate sheet if necessary.