pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Clean Water

Chapter 102 Post-Construction Stormwater Management (PCSM)
SCM Suites Planning Tool

January 27, 2026

Post-construction stormwater management (PCSM) is a requirement in Pennsylvania for projects requiring a permit for earth disturbance activity under 25 Pa. Code Chapter 102. Most projects require a stormwater analysis under § 102.8(g) and a demonstration that regulatory standards for volume, water quality, and peak rates will be met. Typically, regulatory standards are met through the design and construction of stormwater control measures (SCMs).

The Department of Environmental Protection (DEP) has prepared this document to aid the regulatory community with meeting PCSM requirements under § 102.8 including the selection of SCMs. This planning tool or strategy provides options in each SCM Suite to aid the PCSM Plan preparer in their analysis based on the applicant's proposed project type: Suite A SCMs (small projects), Suite B SCMs (small to medium projects), Suite C SCMs (medium to large projects), and Suite D SCMs (large projects).

The steps to implement the strategy are listed below. This strategy does not replace but rather supplements current DEP guidance. This strategy DOES NOT constitute a pre-approved design, and this approach should only be considered a preliminary evaluation of possible SCMs needed to achieve regulatory standards. It is the Plan preparer's responsibility to select any combination of SCMs that may work for a specific project as it progresses through the plan development process and validate them using the steps provided. This strategy may be used as part of the initial concept site plan and site design process during the overall project development.

Use of this planning tool is optional.

Steps:

1. **Consider PAG-01** – Determine whether the project is eligible for the PAG-01 NPDES General Permit. A project is generally eligible for PAG-01 if 1) stormwater discharges will not be to special protection waters; 2) earth disturbance will be less than 5 acres; 3) total area of impervious following construction will be ≤ 30,000 square feet (SF) within the disturbed area; and 4) total area of impervious following construction will be ≤ 12% of the total project site area. If eligible, there is no need to go further; implement the SCMs specified by PAG-01.

2. **Determine Use of PAG-02 or Individual Permit** – If the project is not eligible for PAG-01, determine whether it is eligible for the PAG-02 NPDES General Permit. A project is typically eligible for PAG-02 if stormwater discharges will not be to special protection waters and contaminated soils will not be disturbed. Eligibility criteria are identified in the general permit. If ineligible for PAG-02, the project will need an Individual NPDES Permit.

3. **Pre-Development Site Characterization (PDSC) Spreadsheet** – Complete DEP's PDSC Spreadsheet (available on DEP's E&S Resources page) to document compliance with § 102.8(g)(1). Follow the recommendations in the PDSC Spreadsheet to the extent practicable. Complete a geotechnical investigation where potentially hazardous geology or soil conditions may be present, such as when there are known or suspected karst features on a site.

4. **Determine Net Change** – Determine the net change in stormwater runoff volume, comparing pre-construction to post-construction conditions, at the 2-year/24-hour storm event. It is recommended that DEP's PCSM Spreadsheet is used to determine the net change in volume. Open DEP's most current PCSM Spreadsheet, available on DEP's E&S Resources page. Complete the General worksheet as explained in the PCSM

Spreadsheet Instructions. Proceed to the Volume worksheet of the PCSM Spreadsheet and enter the 2-year/24-hour precipitation depth and the pre-construction and post-construction land covers, areas, and soil types based on the conceptual site plan for the project. The spreadsheet calculates the net change in runoff volume at the 2-year/24-hour storm event in which the applicant is required to manage (unless an alternative is pursued).

5. **Consider SCM Suites** - Proceed to the list of SCM Suites below and determine the Suite that most appropriately matches the scope of the proposed land development project.

    a. Each of the categories (A, B, C, and D) includes a suite of stormwater SCMs. The SCMs within each suite may be used to manage runoff based on disturbed area. It is also scalable and can be based on drainage area. For example, Plan preparers can break larger disturbed areas into smaller areas and use the SCMs in the lower level suites.

    b. The lower level SCMs are generally focused on minimizing the potential impacts from runoff by applying preventative design and construction measures, which are applicable to most projects. There may be circumstances that warrant the use of SCMs from a higher-level Suite on a project. For example, projects with a disturbed area consistent with the parameters of Suite B but include larger increases in impervious area, may use SCMs in Suite C to investigate and meet the regulatory requirements.

6. **Evaluate the Selected SCMs** - Select and investigate the mix of non-structural and structural SCMs determined in Step 5 that can be accommodated and function within the proposed layout of the concept site plan for the proposed project.

    a. Non-Structural SCMs – Compete Worksheet 3 from the 2006 Stormwater BMP Manual to generate a total value for Non-Structural SCM Volume credits and enter it into the data field on the Volume worksheet of the PCSM Spreadsheet.

    b. Structural SCMs – Select the appropriate Structural SCMs from the drop-down list within the Structural SCM Volume Credit table of the PCSM spreadsheet and enter requested design information. The spreadsheet will tally and keep track of the sum of credits and will list the results in red if there is still credit needed and green if the net change has been met.

    c. Step 6 is an iterative step and may need to be investigated and repeated several times with different combinations of SCMs. Additionally, the site concept plan may also need to be adjusted to be consistent with the computation and iterations once the net change has been satisfied.

7. **Ensure Volume and Water Quality Management is Met** – Evaluate whether the net change in volume and pollutant loads (see Quality worksheet) has been managed for the 2-year/24-hour storm event. If volume and/or pollutant loads have not been managed, the designer should propose additional SCMs to manage the net change (e.g., water quality treatment devices, additional structural or non-structural SCMs). Once the PCSM Spreadsheet is satisfied by the selected SCMs from the Suite, review the General, Volume, and Quality worksheets to ensure that they are correct and consistent with the site plan. Update the site plans if applicable to ensure consistency.

    a. Complete all stormwater modeling and computations.

    b. Complete the appropriate NOI or application.

    c. Complete PCSM Module 2 (3800-PM-BCW0406b) in accordance with the instructions.

SCM Suite A – Small Projects

Examples: Residential Development and Small Agricultural Projects

These projects typically involve a minor addition of impervious area relative to existing conditions and do not generally change the direction of runoff or the potential for pollutants in the runoff. The primary focus of the analysis should be to compare the existing and proposed runoff characteristics. The additional runoff can often be dealt with using non-structural and restoration BMPs when the runoff does not discharge directly to surface waters. This SCM Suite also provides structural SCMs options to investigate if the initial non-structural solutions are not enough to meet the required volume.

Small Project Parameters:

- Disturbed Area or Drainage Area: 1 – 5 acres
- Impervious Area – 0 – 1.5 acres

Non-Structural SCMs	Volume Credit
Minimize Soil Compaction	908 CF/acre
Protect Existing Trees / Revegetate	1,210 CF/acre
Maintain / Establish Riparian Forest Buffer	1,815 CF/acre
Disconnect Roof Leaders / Other Impervious to Vegetated Areas (0.01 – 0.35 acre)	10 CF – 500 CF
Structural SCMs	**Volume Credit**
Vegetated Swale (6'W X 1.5'D)	5 CF/LF
Bioretention (50'W X 75'L X 4'D)	4,500 CF
Bioretention – Simplified Design Standard	Volume routed up to the 2-year/24-hour storm

CF = cubic feet
LF = linear foot

SCM Suite B – Small to Medium Projects

Examples: Subdivisions and Large Agricultural Projects

These projects typically involve a moderate addition of impervious area relative to existing conditions and may change the direction of runoff or the potential for pollutants in the runoff. These projects alter the landscape and generally produce higher volumes and rates of runoff. The additional runoff can often be dealt with using low impact design concepts such as maintaining natural drainage divides, preserving naturally vegetated areas, grading to encourage sheet flow, and directing runoff into or across vegetated areas. This SCM Suite also provides more structural options to investigate if the initial combination of non-structural and structural solutions are not enough to meet the required volume.

Small to Medium Project Parameters:

- Disturbed Area or Drainage Area: 5 – 15 acres
- Impervious Area – 1.5 – 5 acres

Non-Structural SCMs	Volume Credit
Minimize Soil Compaction	908 CF/acre
Protect Existing Trees / Revegetate	1,210 CF/acre
Maintain / Establish Riparian Forest Buffer	1,815 CF/acre
Disconnect Roof Leaders / Other Impervious to Vegetated Areas (1.5 – 2.5 acres)	1,400 CF – 2,300 CF
Structural SCMs	**Volume Credit**
Vegetated Swale (10'W X 1.5'D)	7 CF/LF
Bioretention (100'W X 100'L X 4'D)	12,000 CF
Bioretention or Underground Storage	Volume routed up to the 2-year/24-hour storm

CF = cubic feet
LF = linear foot

SCM Suite C – Medium to Large Projects

Examples: Retail or Industrial Development

These projects typically involve a significant addition of impervious area relative to existing conditions and significant changes the direction of runoff or the potential for pollutants in the runoff. These projects alter the landscape and definitively produce higher volumes and rates of runoff. The additional runoff should be attenuated with larger structural SCMs to reduce the runoff volume.

Small to Medium Project Parameters:

- Disturbed Area or Drainage Area: 15 – 25 acres
- Impervious Area – 5 – 15 acres

Non-Structural SCMs	Volume Credit
Minimize Soil Compaction	908 CF/acre
Protect Existing Trees / Revegetate	1210 CF/acre
Maintain / Establish Riparian Forest Buffer	1,815 CF/acre
Disconnect Roof Leaders / Other Impervious to Vegetated Areas (2.5 – 7 acres)	2,300 CF – 6,300 CF
Structural SCMs	**Volume Credit**
Vegetated Swale (15'W X 1.5'D)	10 CF/LF
Infiltration Trench (20'W x 4'D)	32 CF/LF
Bioretention (200'W X 200'L X 4'D)	48,000 CF
Infiltration Basin (50'W X 130'L X 2'D)	20,286 CF
Permeable Pavement / Porous Concrete (3 acres)	60,984 CF
Bioretention or Underground Storage	Volume routed up to the 2-year/24-hour storm

CF = cubic feet
LF = linear foot

SCM Suite D: - Large Projects

Large Warehouses and Commercial Land Development

These projects typically involve a major addition of impervious area relative to existing conditions and major alterations to the direction of runoff or the potential for pollutants in the runoff. These projects profoundly impact the landscape and produce extreme volumes and rates of runoff. The additional runoff should incorporate as many low impact design concepts and maintain natural drainage divides as much as practicable. Design concepts such as preserving naturally vegetated areas, grading to encourage sheet flow, and directing runoff into or across vegetated areas will be beneficial, but major structural SCMs are commonly needed to reduce the runoff volume.

Small to Medium Project Parameters:

- Disturbed Area or Drainage Area: 25+ acres
- Impervious Area – 25+ acres

Non-Structural SCMs	Volume Credit
Minimize Soil Compaction	908 CF/acre
Protect Existing Trees / Revegetate	1,210 CF/acre
Maintain / Establish Riparian Forest Buffer	1,815 CF/acre
Disconnect Roof Leaders / Other Impervious to Vegetated Areas (20 acres)	20,833 CF
Structural SCMs	**Volume Credit**
Vegetated Swale (25'W X 1.5'D)	17 CF/LF
Detention Basin – (80'W X 160'L X 6'D)	153,393 CF
Bioretention (500'W X 500'L X 4'D)	300,000 CF
Infiltration Basin (80'W X 160'L X 2'D)	40,300 CF
Permeable Pavement / Porous Concrete (10 acres)	203,280 CF
Capture and Use	67 CF/500-gallon storage tank for capture
Bioretention or Underground Storage	Volume routed up to the 2-year/24-hour storm

CF = cubic feet
LF = linear foot