**Frequently Asked Questions:**

**Low Impact Development in Coastal South Carolina Compliance Calculator**

**Does the worksheet allow me to do anything that is inconsistent with the guidance in Low Impact Development in Coastal South Carolina: A Planning and Design Guide?**

Yes. The worksheet is only intended as a tool to quantify the runoff reduction and treatment volume provided on site, and does not have limits on design parameters. For example, contributing drainage areas to individual BMPs are not limited, and there is no automatic restriction limiting BMP selection to those appropriate for a site’s soil type or land use.

**What are the different sheets in the Calculator?**

The Calculator has three sheets, including: *Site Data,* where the user enters basic pre-developed and post-developed site conditions; *BMPs,* where the user enters data describing the sizing and design of stormwater BMPs on site; and *Channel and Flood Protection*, which calculates curve number adjustments achieved by LID practices.

**Why are the Cells Color Coded?**

The Blue cells are for data entry, the grey cells are for calculations, and the yellow cells contain constant values.

**What data do I enter in the *Site Data* sheet?**

This sheet includes both pre- and post-developed land cover. Land cover is divided in to three broad categories, and should be summarized by Hydrologic Soil Group (See Table)

|  |
| --- |
| **Land Use Data Required in the *Site Data* sheet for Pre- and Post-Developed Conditions** |
|  | **A Soils** | **B Soils** | **C Soils** | **D Soils** |
| **Forest Cover (ac)** |  |  |  |  |
| **Turf Cover (ac)** |  |  |  |  |
| **Impervious Cover (ac)** |  |  |  |  |

In addition, make sure you answer the three “yes/no” questions in Rows 29-31. These questions answer whether or not the site is in a regulated MS4, within a ½ mile of a Coastal Receiving Water, and within 1,000 ft. of a shellfish bed.

**What does “Impervious Cover” mean?**

Impervious cover refers to land cover that is impermeable to runoff, and includes all paved surfaces. In addition, any surface that supports vehicle traffic, such as a gravel road or parking lot, is considered impervious.

**Are Green Roofs and Permeable Pavement pervious or impervious?**

Green roofs and permeable pavement are *impervious*. However, these practices also provide runoff reduction and stormwater treatment, so that the runoff from these surfaces is reduced.

**Why do I have to answer questions about the location of my site?**

Stormwater management is regulated by a few different regulations that are triggered based on where the site is located. Answering these questions ensures that the site is in compliance with the appropriate regulations.

**How does the water quality volume in the spreadsheet correlate to the SCDHEC water quality volume determination requirements for 1" over the site area, regardless of curve number?**

As part of the inputs for the calculator on Site Data tab, the curve numbers used are associated with the Channel and Flood Protection tab and not used to calculate runoff for the water quality treatment volume. On the Site Data tab, if a user selects “Yes” to location of site within a MS4, then the spreadsheet will calculate the Treatment Volume as 1” of runoff over the entire site. The calculator does calculate an equivalent design storm for that volume to aid in sizing individual BMPs on the BMPs tab. That design storm is based on runoff coefficients for each land cover type but treatment volume is 1” over the entire site.

**My jurisdiction has different regulations than the ones outlined here. How can I use this sheet?**

Customized calculators have recently been developed for four MS4s: Beaufort , Charleston, and Horry Counties, and the Town of Bluffton. These jurisdictions have unique stormwater rules and the modified spreadsheets will help ensure that the local regulations are met.

**What data do I enter in the *BMPs* sheet?**

The data required for each practice is summarized in the table below:

|  |
| --- |
| **Data Needed for the *BMPs* Sheet** |
| **Data** | **Description** |
| **Forest, Turf and Impervious Cover Draining to BMP** | In *Columns B, C and D* enter the area (in acres) of each land category that drains to each BMP type. |
| **Storage Volume** | In *Column E*, enter the storage volume provided by the practice. Equations for calculating the storage volume for each BmP can be found in Chapter 4 of the manual. |
| **Downstream BMP** | If this practice drains to another (downstream) BMP, select the practice type from the Drop-Down Menu in *Column L*  |

**I have a BMP that captures drainage from several upstream practices. For the drainage area to the BMP, should I enter the *entire* drainage area, or only the land that has not been captured by other practices?**

Only enter the remaining drainage area. The overflow from upstream practices will be accounted for as the “Volume Received by Upstream Practices.”

**How do I know if my design has achieved the required water quality volume?**

Check on Row 31, which summarizes the Target volume, the volume achieved by this site, and whether the target has been reached.

**How should I use the “Channel and Flood Protection” sheet?**

The *Channel and Flood* Protection sheet generates revised curve numbers that account for the benefits of runoff reduction practices. Detention is typically not needed if the revised curve number is lower than the pre-developed curve. However, if detention is needed, a hydrologic and hydraulic analysis will be needed to properly size and route flow through the practice.

**As a reviewer, what are some key cells I should look at to ensure that the submitted worksheet is accurate?**

Some checks that can help to act as a “first screen” to ensure that the spreadsheet has been used correctly include the following:

1. Check the “Turf Cover” and “Impervious Cover” in **rows 25 and 26** of the *Site Data* tab to ensure that these areas are greater than or equal to the total turf and impervious cover captured by stormwater BMPs, as reported in columns B and C, respectively of the *BMPs* tab.
2. On the *Site Data* tab, review the categories of the “Pre-Developed Land Cover” to ensure that they reflect actual conditions on the site.
3. On the *Site Data* tab, confirm that the answers to the questions in cells **E29 to E31** are correct. These answers will have a strong influence on the required treatment volumes calculated by the Compliance Calculator.
4. Check Total Volume Captured by the BMP (Column H on the *BMPs* tab) for each practice to ensure that the total volume captured is reasonable for this practice type, as well as the practice footprint on any plans that are submitted.
5. For permeable pavement and bioretention, ensure that the designer has selected the “standard” design option if an underdrain is needed and that the appropriate soil type has been selected for grass channels and disconnection.
6. Review the site plan to ensure that the pathway of practices in series from the “Downstream BMP” (Column L on the *BMPs* Tab) corresponds to the actual conditions.

**How should I credit underground storage?**

If underground storage is designed to provide infiltration, it can act as an infiltration practice, but if it does not provide infiltration it will not provide treatment or runoff reduction, and will act as a detention practice only.

**How do I account for Manufactured Treatment Devices?**

Manufactured Treatment Devices are not specifically covered in Low Impact Development in Coastal South Carolina: A Planning and Design Guide. However, if the device is approved for use by the reviewing authority and appropriately sized, the most applicable BMP category to use in the spreadsheet would be “Filtration.”

**Can I direct additional impervious drainage to permeable pavement?**

Yes, but the design guidance recommends that the total drainage area does not exceed five times the area of the permeable pavement, and that the drainage area is nearly 100% impervious.