

CoC BMP Manual
Meeting 8 Minutes
July 24th, 2pm-4pm
7th Floor Conference Room, 1136 Washington St.

Thank you to those who attended Wednesday's (7/24) meeting and contributed to the eighth monthly meeting to develop the City's BMP Design Manual. We wanted to provide you with an overview/minutes of the discussed Design Aid Tools. Attached we have provided a pdf copy of the presentation, and plan to continue provide the presentation for the last monthly meeting.

For this meeting, William Lamb discussed how to use the City's design aid tools via walking through a residential project example. Three scenarios for a residential site were analyzed for this example. The first scenario examined a conventional design for the residential subdivision. For the most part, the entire site was cleared and graded for a medium-density subdivision leaving little conservation areas. Utilizing the City's Volume Calculation Spreadsheet, determining the post storage volumes (and post peak flows) for the site's stormwater pond can be calculated via the Unified Sizing Criteria. To get a better idea on how to use this spreadsheet, see the attached presentation. As requested, there will be two (2) Volume Calculation Spreadsheets that can be utilized during the design process; an Executive Summary and Detail Summary versions. These are both the same spreadsheet, but the Executive Summary version displays just the Input/Output page (Titled 'Volume Calculation Executive Summary'), whereas the Detailed Summary version has all calculations displayed on the tabs behind this tab.

The second scenario for this residential example took the same site, but was designed using stormwater Better Site Design (BSD) principals and techniques. By conserving more natural conservation features instead of clearing the whole site, the Volume Calculation Sheet (Exec. Summary Page) illustrates how the Water Quality Volume for the stormwater pond can be reduced and how the CN for the site can be adjusted using certain conservation features (therefore reducing post peak flows and storage volumes for the pond).

Lastly, the third scenario kept the above BSD site layout, but it also incorporated upland BMPs throughout the site to treat the required WQv for each drainage area. BMPs used for this site included Bioretention Areas and Dry Enhanced Swales. Before using the Volume Calculation Spreadsheet, there is the option to use the City's BMP Sizing Tools. For the Bioretention Area Sizing Tool, the bioretention can be sized to store the drainage area's total WQv, it can be sized based on a certain area, or it can sized based on a site's limiting depth. However, the tool can only compute one unknown per computation (for either A, WQv, or d). Once the bioretention is sized for the drainage area, the volume stored in the bioretention can be subtracted from site's total WQv. Therefore, this volume can be placed in the City's Volume Calculation Spreadsheet under the "Structural BMPs" section on the Input/Output page (again, please see the attached presentation to follow the steps of using these spreadsheets). For the Enhanced Dry Swale Sizing Tool (for a trapezoidal channel), site parameters and constraints will dictate the swale's storage volume (i.e. slope, proposed channel length, bottom width, ponding depth, channel side slopes, etc.). Sizing criteria for these parameters are dictated in the GSMM and referenced in the City's BMP Manual. Once swale is sized, its storage volume (cubic feet) can be placed in the City's Volume Calculation Spreadsheet under the "Structural BMPs" section on the Input/Output page. The BMP sizing tools also mention further design steps that must be carried out for final design; however, these steps are only listed and referenced to the GSMM because the purpose of these tools is to calculate storage volumes (WQv) that can then be used in the Volume Calculation Tool to see the potential benefits for

the site. Therefore, this third scenario in the Volume Calculation Tool further illustrates how the Water Quality Volume for the stormwater pond can be reduced (in this case it was all treated via BSD and structural BMPs) and how the CN for the site can be lowered using certain BSD and BMPs (therefore reducing post peak flows and storage volumes for the pond).

BMP Maintenance: The topic of the City's BMP Maintenance Agreements was discussed again. For each site, the City would like a signed permanent Stormwater Maintenance Agreement with attached Maintenance Plan(s) per BMP. Templates for BMP Maintenance Plans will be completed for Ponds, Dry Enhanced Swales, Infiltration Trench, Vegetated Filter Strip, Bioretention, and Porous Pavement. The City will also provide the same Maintenance and Inspection notes that the designer can choose to use on their plans. Currently, the City is in the decision process of how the transfer of ownership can be set in place to ensure the success of the BMPs and the site.

****The last monthly meeting is currently scheduled for **Wednesday August 21st**. Storm Con in Myrtle Beach is scheduled for this week and some of you may be attending. The City is willing to reschedule this meeting for the following **Wednesday (August 28th from 2-4pm)**, **but only if it is requested** to be rescheduled. If the current date and time is fine for everyone then it will remain **Wednesday August 21st**. The last meeting will cover how the Credits will be applied for the City, and we will also recap all of the meetings for this project. Again, let us or the City know if you would prefer to have the meeting rescheduled.*

Again thank you for your participation. The last monthly meeting, until further notice, will be held Wednesday, August 21st to go over the City's Crediting Options and to review the entire project. The meeting will be held in the same location (7th floor conference room) from 2-4pm. As a reminder, PDH's are available for each meeting. Attendance lists are on the CoC website <http://columbia.sc.gov/index.cfm/departments/utilities-engineering/stormwater/stormwater-bmp-manual-upcoming-meetings/>. Also, if there is any feedback from these meetings or summaries, please feel free to contact William Lamb, Kelli Resler, Tracy Mitchell, or Dana Higgins. Again, your input is crucial to the success of the BMP Manual and supporting Design Aids.