



Issue 60, March 2015

INSIDE THIS ISSUE:

Clean Up Watershed Planning Costs with the Clean Water Optimization Tool / Page 1

Sustainable Stormwater on the Coast! / Page 2

Clean Up Watershed Planning Costs with the Clean Water Optimization Tool

The Center for Watershed Protection has just released its Clean Water Optimization Tool, a planning tool for Maryland communities to develop more cost-effective strategies for reducing stormwater pollution to meet nutrient and sediment reduction goals. Although the impetus for the Tool was the Chesapeake Bay TMDL, it can also be used to address local impairments for nutrients and sediment.

The Tool it allows the user to:

- optimize BMP selection based on cost-effectiveness for a particular pollutant
- determine the practical limits of implementation, and
- evaluate progress towards water quality goals.

The Tool also includes the most up-to-date crediting procedures approved by the Chesapeake Bay Program and allows the user to evaluate the impact of practices that have not yet been approved.

The Tool is available for free download at www.cwp.org/cwot along with a User Manual and BMP Implementation Tracking Spreadsheet, which can be used for tracking BMP implementation and reporting to the Maryland Department of the Environment. The data compiled through this spreadsheet can be entered into the Tool to gage progress towards TMDL targets.

The website also contains case studies of the Tool's application in four Eastern Shore counties: Kent County, Queen Anne's County, Talbot County, and Wicomico County. The Center tested out the Tool with each county, and showed a reduction in costs of 25%- 67% over the original Watershed Implementation Plan (WIP) strategies. In addition to greatly reducing total costs, the scenarios developed with the Tool are more achievable from a practical standpoint, considering available land, ownership and site constraints. We know from years of conducting stormwater retrofit assessments in the field that there are practical limits to how much urban area can be treated with retrofits and the strategies developed with the Tool reflect these limits, treating anywhere from 6-30% of impervious acres in the counties. Conversely, the original WIP strategies treated a much higher percentage and in one county proposed treating twice as many impervious acres than what actually exists in the jurisdiction.

Other important questions the case studies addressed for the Eastern Shore counties included:

- What are the most cost-effective BMPs for my county? Can we increase the maximum practical units treated for these BMPs by knocking down a perceived barrier to implementation?
- What is a realistic level of implementation in my county, what is the associated cost, and how far does it get us towards the TMDL goals?

- How much implementation is possible with our annual stormwater budget and what is the associated progress toward the TMDL goals?
- How can projects to address local TMDLs help us with the Bay TMDL?

Despite the enormous reductions in WIP costs realized by using the Tool, the fact remains that the total cost is still much greater than the budgets that are currently available to the Eastern Shore counties. The case studies showed that each alternative yielded some incremental reduction in cost, and together the cumulative reductions were significant. In other words, there was no one “magic bullet” approach. The Center hopes to explore some additional measures to bridge the gap between available resources and restoration required to meet water quality goals, and help these communities get support for sustainable funding for stormwater implementation on the Eastern Shore.

The Center is currently modifying the Tool so that it can be used by localities in Virginia. The Tool has wide applicability in the other Bay states and can also be tailored to the specific requirements and needs of communities outside the Bay watershed. For more information about the Clean Water Optimization Tool, contact Reid Christianson at rdc@cwp.org or Karen Capiella at kc@cwp.org.

Funding for this work was provided by the Town Creek Foundation.

Sustainable Stormwater on the Coast!

Development along South Carolina’s coast is expanding rapidly. Conventional development practices significantly increase stormwater runoff pollution and alter coastal hydrology. The negative impacts from these changes in stormwater runoff are well-documented. In coastal South Carolina, the impacts include decreased tidal creek and estuary health, reduced tourism and resource-related industries, as well as increased flooding and property damage. Often, low impact development (LID) practices are touted as a solution to these problems and an opportunity to create more sustainable, resilient environmental systems. However, progress on LID implementation in many coastal communities has been hindered by a lack of engineering and planning guidance, among other barriers.

In an effort to address these challenges, the Center has collaborated with the Coastal Training Programs (CTPs) at the Ashepoo-Combahee-Edisto Basin and North Inlet-Winyah Bay National Estuarine Research Reserves to develop an LID manual specifically for the coast: *Low Impact Development in Coastal South Carolina: A Planning and Design Guide*. There were two main goals for this manual. The first was to create a resource that meets the needs of engineers, landscape architects, planners, stormwater managers, and other coastal decision makers. In order to address these needs, the project team used surveys, informal discussions, and facilitated meetings with a diverse group of stakeholders to identify and understand barriers to LID implementation and present potential solutions. One of the biggest obstacles identified through the stakeholder interaction was that the different groups each require different types of information to overcome LID implementation barriers. Therefore, the manual was divided into sections that targeted specific stakeholder groups, such as planning guidance and technical specifications.

The second goal was to tailor content to the specific conditions in coastal South Carolina. To accomplish this, the project team facilitated a series of collaborative focus group meetings with applied science researchers and engineers. In these meetings, the team learned about the unique challenges and opportunities for stormwater management in coastal South Carolina, including the potential impacts of climate change. Based on these interactions, the existing guidance, specifications, and design tools from other states and regions were modified, adjusted, or replaced so that the manual addresses South Carolina coastal conditions.

We expect that *Low Impact Development in Coastal South Carolina: A Planning and Design Guide* will be an important tool to expedite the implementation of LID practices. Planners will have the information they need to facilitate LID through ordinance and regulation changes; designers will have the design tools they need to develop effective practices; and regulators will have the specifications they need to ensure that LID efforts are implemented successfully and sustainably. While the manual was completed in summer of 2014, the Center and the CTPs have continued to stay involved with the project, offering training sessions and updating some of the associated tools to ensure that the manual continues to be useful. *Low Impact Development in Coastal South Carolina: A Planning and Design Guide* is available for free at: <http://www.northinlet.sc.edu/lid/>