

WERF BMP and LID Cost Tools

www.werf.org/bmpcost

The tools you need to estimate the complete cost of best management practices (BMPs) and low impact development (LID) techniques.

Sometimes, the most complex part of implementing a stormwater management project can be the approval process. In a climate of increasingly smaller budgets and competing needs, calculating the whole-life cost of a BMP or LID approach can be key to making decisions about the most appropriate and cost-effective options – and ultimately moving a project forward.

WERF's suite of modeling tools provides a framework to ease cost estimation for various solutions, factoring in items such as capital expenses, long-term maintenance, and the potential value a project will deliver. These tools, which supply planning-level estimates and can serve as a format for cost reporting, are available for a variety of BMPs and LID options, including green roofs, rainwater cisterns, bioretention facilities, retention ponds, extended detention basins, swales, rain gardens, and permeable pavement.

How the Tools Can Help You

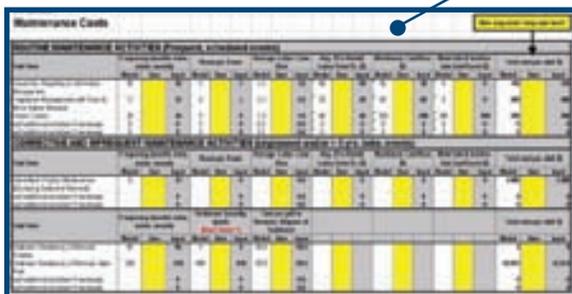
Are you looking for a baseline cost estimate for a stormwater project or more detailed figures for a specific location? No matter where you are in the project planning process, the BMP and LID cost tools can help you find as much or as little information as you need. Each spreadsheet offers two application modes to help you get started.

- **Generic:** Quickly estimate capital costs using basic information, such as system size, drainage area, and system type.
- **Site-Specific:** Generate more customized values by entering line-item data for virtually every capital-cost component tracked by the model, including system design, construction, and material costs. Don't have all of the values? Default values are available as needed.

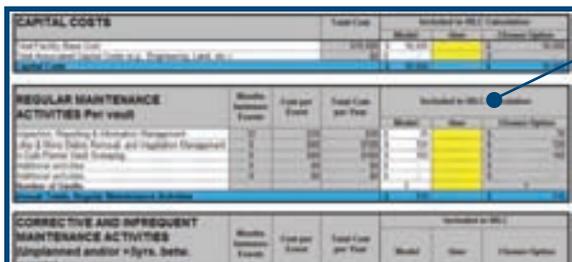


A Closer Look at What the Costing Models Offer

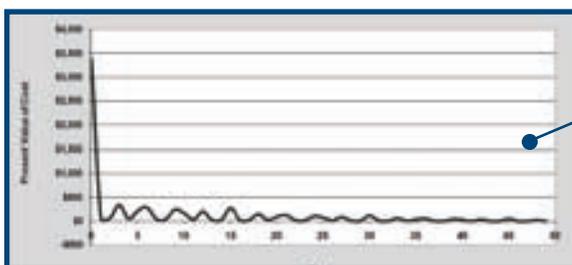
Each model is made up of a series of spreadsheets that covers the cost components that should be factored into a whole-life assessment for a specific BMP or LID solution, as well as summaries and breakdowns of the financial information. Here's a snapshot of what each spreadsheet can do.



The screenshot shows a spreadsheet titled "Maintenance Costs" with columns for "Activity", "Frequency", "Cost per Event", "Total Cost per Year", and "Included in WLI". It lists various maintenance tasks like "Annual Inspections", "Annual Cleaning", and "Annual Repairs".



The screenshot shows a spreadsheet titled "CAPITAL COSTS" with sections for "REGULAR MAINTENANCE ACTIVITIES Per Year" and "CORRECTIVE AND INFREQUENT MAINTENANCE ACTIVITIES (Unplanned and/or >1yrs. beta)". It includes columns for "Months per Year", "Cost per Event", "Total Cost per Year", and "Included in WLI".



Design & Maintenance Options

Defines the design and management criteria that will influence both initial expenses and upkeep costs for a specific BMP or LID option.

Capital Costs

Calculates initial facility costs and other costs associated with the start up of a project (e.g., engineering, land, etc.).

Maintenance Costs

Determines the ongoing costs associated with operating a system, including routine maintenance and corrective repairs. Users also can select the frequency of maintenance and input costs specific to their project.

Cost Summary

Summarizes all costs entered into the model, and allows users to include or exclude costs from the final calculation in order to test various scenarios.

Whole-Life Costs

Calculates a present value based on selected cost components and future costs.

Present Value Graph

Illustrates the present value of cost over time, along with cumulative discounted cost and discounted cost over time.

The WERF BMP and LID cost tools are supported by the Water Environment Research Foundation, the United Kingdom Water Industry Research, and the U.S. Environmental Protection Agency.

This material was produced with a grant from the National Fish and Wildlife Foundation.