

EPA Stormwater Calculator: Tool Overview and Guidance

epa.gov/water-research/national-stormwater-calculator

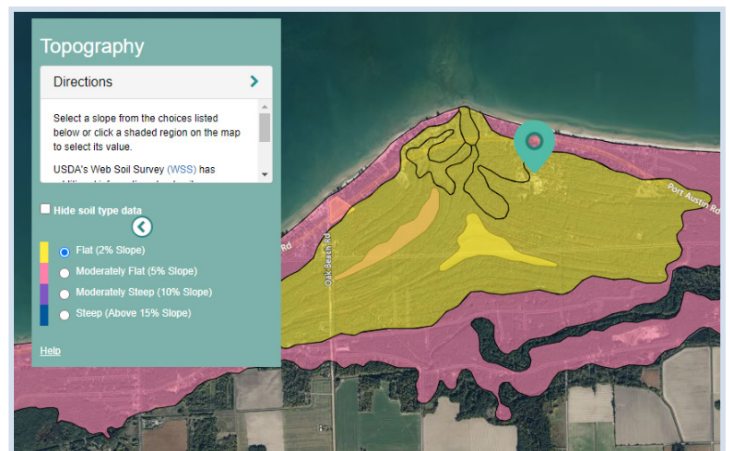
GLISA developed this tool guidance based on their experience as a potential user. It is intended to help other users in the Great Lakes region better understand the tool and its potential applications. For an in-depth walkthrough of how to use the tool, please see this [tutorial video](#).

Overview

During heavy rainfall events, stormwater can collect on properties and lead to pollution of local waterways. Green infrastructure helps to reduce stormwater volume and pollutant runoff into local drainage systems. The Environmental Protection Agency (EPA) National Stormwater Calculator is a planning tool that provides a comparison of how much water is collected using different green infrastructure projects such as rain gardens and green roofs, and provides planning-level estimates of costs.

Outputs

- The tool uses soil conditions, land cover, and historical rainfall records to assess the movement of stormwater for small- to medium-sized (up to 12 acres) sites.
- Based on a user's selections, the tool summarizes findings about rainfall and runoff amounts in various charts and tables.
 - Users select different future climate change and extreme storm scenarios to assess impact at a site.
 - Precipitation and evaporation data for the chosen site is available for download.
- Cost estimation is provided based on project and site-specific variables such as being a redevelopment versus a new project.



Map of topography from the EPA Stormwater Calculator. Credit: U.S. EPA.

Applications and Use

- **Intended audience:** The tool is useful for anyone interested in reducing stormwater runoff from a property, including site developers, landscape architects, watershed councils, urban planners, and homeowners. The tool provides project-level cost estimates for grant applications or other property planning work.
- **Background needed:** The tool is moderately difficult to use, based on a user's ability to fill in inputs and interpret results. Users more familiar with green infrastructure, stormwater management, and associated details may find it easier to use.
- **Example of potential uses:** A planner could use this tool to compare rainwater collection at multiple locations using proposed rain gardens and green roofs. See [tutorial video](#) for example demonstration.

Panel for users to specify inputs to the EPA Stormwater Calculator. Credit: U.S. EPA.

Potential Limitations and Considerations

- For users less familiar with green infrastructure and stormwater management, it will be helpful to review [tool user guides](#) to understand the data and background information that will be used in the tool.
- The tool is not suitable for sites larger than 12 acres.
- When many people are using the tool at once, the soil data may not load. There may be locations where soil survey data is not available through the tool, but it may be accessed through the U.S. Department of Agriculture's [Web Soil Survey](#).

Data Sources

Data type	Source
Location	Microsoft Bing Maps
Soil Type	Department of Agriculture's Natural Resources Conservation Service (NRCS) SSURGO database
Soil Drainage	Department of Agriculture's Natural Resources Conservation Service (NRCS) SSURGO database
Topography	Department of Agriculture's Natural Resources Conservation Service (NRCS) SSURGO database
Precipitation/Temperature	National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI), Oregon State University's PRISM Climate Group
Stormwater runoff estimates	EPA's Storm Water Management Model (SWMM)
Climate model projections/scenarios	World Climate Research Program's Coupled Model Intercomparison Project, Phase 5 (CMIP5) multi-model dataset
Cost	Bureau of Labor Statistics (BLS)

More Information on the Tool

The tool was developed by the EPA in 2012 and last updated in December 2023. All products are made publicly available. For any questions, suggestions, or problems with this application, contact: SWC@epa.gov.

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