

# **EPA's National Stormwater Calculator**

A simple to use tool for computing small site hydrology for any location within the United States



#### verview Location Soil Type Soil Drainage Topography Precipitation Evaporation Climate Change Land Cover LID Controls Results Welcome to the EPA National N ▶) D ⊕ | Road Stormwater Calculator his calculator estimates the amount o tormwater runoff generated from a land parcel under different development and control scenarios over a long-term period

of historical rainfal The analysis takes into account local so onditions, topography, land cover and meteorology. Different types of low impac levelopment (LID) practices can be employed to help capture and retain rainfal on-site. Localized climate change scenarios an also be analyzed.

National Stormwater Calculator

Site information is provided to the calculator using the tabbed pages listed above. The Results page is where the site's unoff is computed and displayed

is program was produced by the l subject to both internal and external chnical review. Please check with loca authorities about whether and how it can be used to support local stormwater nanagement goals and requirements

Select the Location tab to begin analyzing a new site.

Release 1.1.0.0

The National Stormwater Calculator (SWC) estimates the amount of stormwater runoff generated from a site under different development and control scenarios over a long period of historical rainfall. The analysis takes into account local soil conditions, slope, land cover and meteorology. The SWC's primary focus is informing site developers and property owners on how well they can meet a desired stormwater retention target. To help control runoff, seven different low impact development (LID) controls can be selected for use throughout the site. These controls are green infrastructure practices that help the user determine the best way to mimic natural water flow processes to retain rainfall onsite. Future climate change scenarios taken from internationally recognized climate change projections can also be considered.

#### The SWC can be used to answer questions, such as the following:

- What is the largest daily rainfall amount that can be captured by a site in either its pre-development, current, or post-development condition?
- To what degree will storms of different magnitudes be captured on site?
- What mix of LID controls can be deployed to meet a given stormwater retention target?

## Select any property in the U.S., and define the land use.

Caribbean Sea

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Analyze a New Site Save Current Site Exit

500 miles\_ VENEZUELA 1000 km

CANADA

### Step 1



## Choose the soil type, soil drainage, topography, precipitation, and evaporation from national databases.



#### Step 3







## If desired, evaluate potential future weather predictions.





Assign land cover to the site: pre-, current-, or post-development.

#### Step 8





Analyze a New Site Save Current Site Ex

Current Scenario

Annual Rainfall = 45.22 inches



## View results before and after LID controls, with historical or predicted weather.

#### **Select desired LID Controls.**

## Step 9

National Stormwater Calculator	LID Design
Overview       Location       Soil Type       Soil Drainage       Topography       Precipitation       Climate Change       Land Cover       LID Controls       Results         What % of your site's impervious area will be treated by the following LID practices?       Image: Control image: Cont	Street Planter         Imperation of the solution of
Help     100 feet     25 m	Gravel bed Trickness (inches)     6       % Capture Ratio     6       Size for Design Storm     Restore Defaults
Assign LID practices to capture runoff from impervious areas. Analyze a New Site Save Current Site Exit	



Overview	Location Soil Typ	e   Soil Drainage	Topography	Precipitation	Evaporation	Climate Change	Land Cover	LID Controls Re	sults
Options Years to Event Th Ignore C Actions	Analyze nreshold (inches) Consecutive Days	20 × 0.10 ×	Parameter Site Characte Site Area (acre Hydrologic Soi Hydraulic Con Surface Slope Precip. Data S	ristics rs) I Group ductivity (in/h (%) ource	r) 0.1 10 10	rrent Scenario 0 08 HENS BEN EPPS Alf	Baseline .	Scenario	
<u>Refresh</u> Use as E	<u>Results</u> Baseline Scenario		Evap. Data So Climate Chan Land Cover	urce ge Scenario	AT. No	HENS BEN EPPS AIF ne	2		
Remove Print Re	e Baseline Scenario esults to PDF File		% Forest % Meadow % Lawn		18 8 25				
<ul> <li>Reports</li> <li>Site I</li> </ul>	s Description		% Desert % Impervious LID Controls		0 49				
<ul> <li>Sum</li> <li>Rain</li> <li>Rain</li> </ul>	mary Results fall / Runoff Frequer fall Retention Freque		Disconnection Rain Harvesti Rain Gardens	ng	0 0 0				
<ul> <li>Runo</li> <li>Extre</li> </ul>	off By Rainfall Percei	ntile Runoff	Green Roofs Street Planten Infiltration Ba Porous Pavem	s sins ent	0 0 0 0				
Help									н



tatistic	Current Scenario	
verage Annual Rainfall (inches)	45.22	
verage Annual Runoff (inches)	21.83	
ays per Year With Rainfall	68.46	
ays per Year with Runoff	48.57	
ercent of Wet Days Retained	29.05	
mallest Rainfall w/ Runoff (inches)	0.11	
argest Rainfall w/o Runoff (inches)	0.30	
1ax. Rainfall Retained (inches)	1.62	



