



U.S. EPA National Stormwater Calculator Mobile Web Application

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Acknowledgements


- **Dawn Bontempo (Attain, LLC)**
- **Marie Calvo (Attain, LLC)**
- **Anthony Passamonti (Attain, LLC)**
- **Fahim Chowdhury (Attain, LLC)**
- **Uyen Tran (Tetra Tech)**
- **Michael Tryby (U.S. EPA)**
- **Michelle Simon (U.S. EPA)**

Outline

U.S. EPA National Stormwater Calculator Mobile Web App

- **Stormwater Calculator Background Information**
- **Development of Mobile Web Application**
- **Example Application: Chicago, IL**
- **Interpreting Results**
- **Next Steps**
- **Discussion & Questions**

National Stormwater Calculator Website





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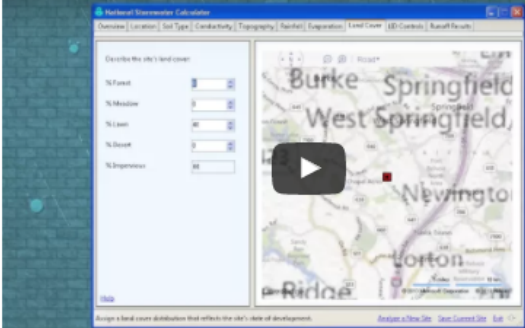
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National Stormwater Calculator

EPA's National Stormwater Calculator (SWC) is a desktop application that estimates the annual amount of rainwater and frequency of runoff from a specific site anywhere in the United States (including Puerto Rico). Estimates are based on local soil conditions, land cover, and historic rainfall records.

EPA's National Stormwater Calculator



It is designed to be used by anyone interested in reducing runoff from a property, including

<http://www2.epa.gov/water-research/national-stormwater-calculator>

What Have We Created and Why?

- **A Stormwater Management (Green Infrastructure/Low Impact Development (LID)) Design and Planning Tool**
 - To model post-construction urban stormwater runoff discharges
 - Screening-level stormwater runoff reduction and cost analyses of various green infrastructure/low impact development (LID) practices, including:
 - Green roofs, rain gardens, cisterns, etc. throughout the U.S.
 - Allow non-technical professionals to conduct screening level stormwater runoff for small to medium sized (less than 1 - 12 acres) sites

Potential Applications

- State or MS4 (Municipal Separate Storm Sewer System) Post Construction Stormwater Design Standards
- Voluntary Stormwater Retrofits for private property owners
- Voluntary Programs: LEED (U.S. Green Building Council) and Sustainable Sites Initiative stormwater credits
- Climate Resiliency Planning: Rockefeller Foundation's 100 Resilient Cities
- LID/Green Infrastructure Design Competitions: Campus RainWorks Challenge, DC Water Green Infrastructure Challenge, etc.

Communities using the SWC

- Northeastern Regional Ohio Sewer District (Cleveland, OH):

[Home](#) > [Stormwater](#) > Green Infrastructure Grant Program

Green Infrastructure Grant Program



<https://www.neorsd.org/stormwater-2/green-infrastructure-grant-program>

/

- EPA's Green & Complete Streets Building Blocks Program Recipients (2016- 2017):

- Manatee County, FL
- Baltimore, MD
- Central Falls, RI



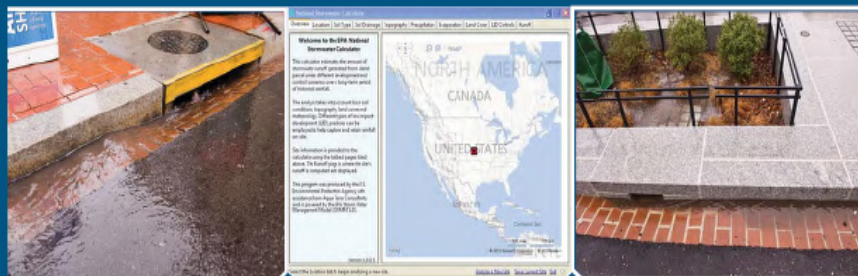
<https://www.epa.gov/smartgrowth/building-blocks-sustainable-communities>

Training and Outreach Materials: User's Guide & Fact Sheet



EPA/600/R-13/085d | Revised January 2017 | www.epa.gov/research

National Stormwater Calculator User's Guide



www.epa.gov/research

science in ACTION

INNOVATIVE RESEARCH FOR A SUSTAINABLE FUTURE



National Stormwater Calculator (SWC)

Tool that helps users control runoff to promote the natural movement of water

Stormwater discharges continue to cause impairment of our Nation's waterbodies. In order to reduce impairment, EPA has developed the National Stormwater Calculator (SWC) to help support local, state, and national stormwater management objectives and regulatory efforts to reduce runoff through infiltration and retention using green infrastructure practices as low impact development (LID) controls. The primary focus of the SWC is to inform site developers on how well they can meet a desired stormwater retention target with and without the use of green infrastructure. It can also be used by landscapers and homeowners.

Platform. The SWC is a Windows-based desktop program that requires an internet connection. A mobile web application version that will be compatible with all operating systems is currently being developed.

Cost Module. An LID cost estimation module within the application allows planners and managers to evaluate LID controls based on comparison of regional and national project planning level cost estimates (capital and average annual maintenance) and predicted LID control performance. Cost estimation is accomplished based on user-identified size configuration of the LID control infrastructure and other key project and site-specific variables. This includes whether the project is being applied as part of new development or redevelopment and if there are existing site constraints.

Climate Scenarios. The SWC allows users to consider how runoff may vary based both on historical weather and potential future climate conditions. To better inform decisions, it is recommended that the user develop a range of SWC results with various assumptions about model inputs such as percent of impervious surface, soil type, sizing of green infrastructure, as well as historical and future climate scenarios. Please check with local authorities about whether and how use of these tools may support local stormwater management goals.

The SWC is comprised of ten tabbed pages:

- 1-Location.** This step has an address lookup feature that allows the user to easily navigate to a site selected anywhere within the United States.
- 2-Soil Type.** In this step, soil type is identified and is used to infer infiltration properties. It can be selected based on local knowledge or from the online database.
- 3-Soil Drainage.** This step identifies how quickly water drains into the soil. Conductivity can be selected based on local knowledge or retrieved from the online database.
- 4-Topography.** Here, the site's surface topography is characterized, as measured by the surface slope. The user can rely on the slope data display as a guide or can use local knowledge to describe the site's topography.

Storm Water Management Model (SWMM)



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[CONTACT US](#)

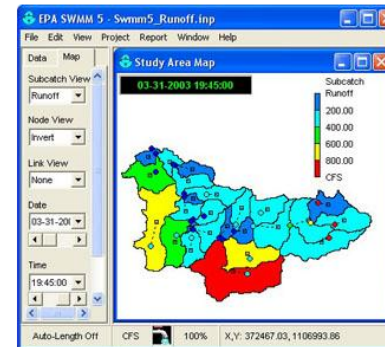
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Storm Water Management Model (SWMM)

Version 5.1.012 with Low Impact Development Controls

- [Description](#)
- [Capabilities](#)
- [Applications](#)
- [Add-in Tool](#)
- [Support](#)
- [Downloads](#)
- [Documentation](#)
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- Calculator is based on SWMM: Dynamic rainfall-runoff simulation model for long-term simulation of runoff quantity
- SWMM produces stormwater runoff estimates in the background of the Stormwater Calculator

National Stormwater Calculator (SWC) Desktop Application

National Stormwater Calculator

Overview Location Soil Type Soil Drainage Topography Precipitation Evaporation Climate Change Land Cover LID Controls Results

Welcome to the EPA National Stormwater Calculator


This calculator estimates the amount of stormwater runoff generated from a land parcel under different development and control scenarios over a long-term period of historical rainfall.

The analysis takes into account local soil conditions, topography, land cover and meteorology. Different types of low impact development (LID) practices can be employed to help capture and retain rainfall on-site. Localized climate change scenarios can also be analyzed.

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

This program was produced by the U.S. Environmental Protection Agency and was subject to both internal and external technical review. Please check with local authorities about whether and how it can be used to support local stormwater management goals and requirements.

Release 1.2.0.0




bing

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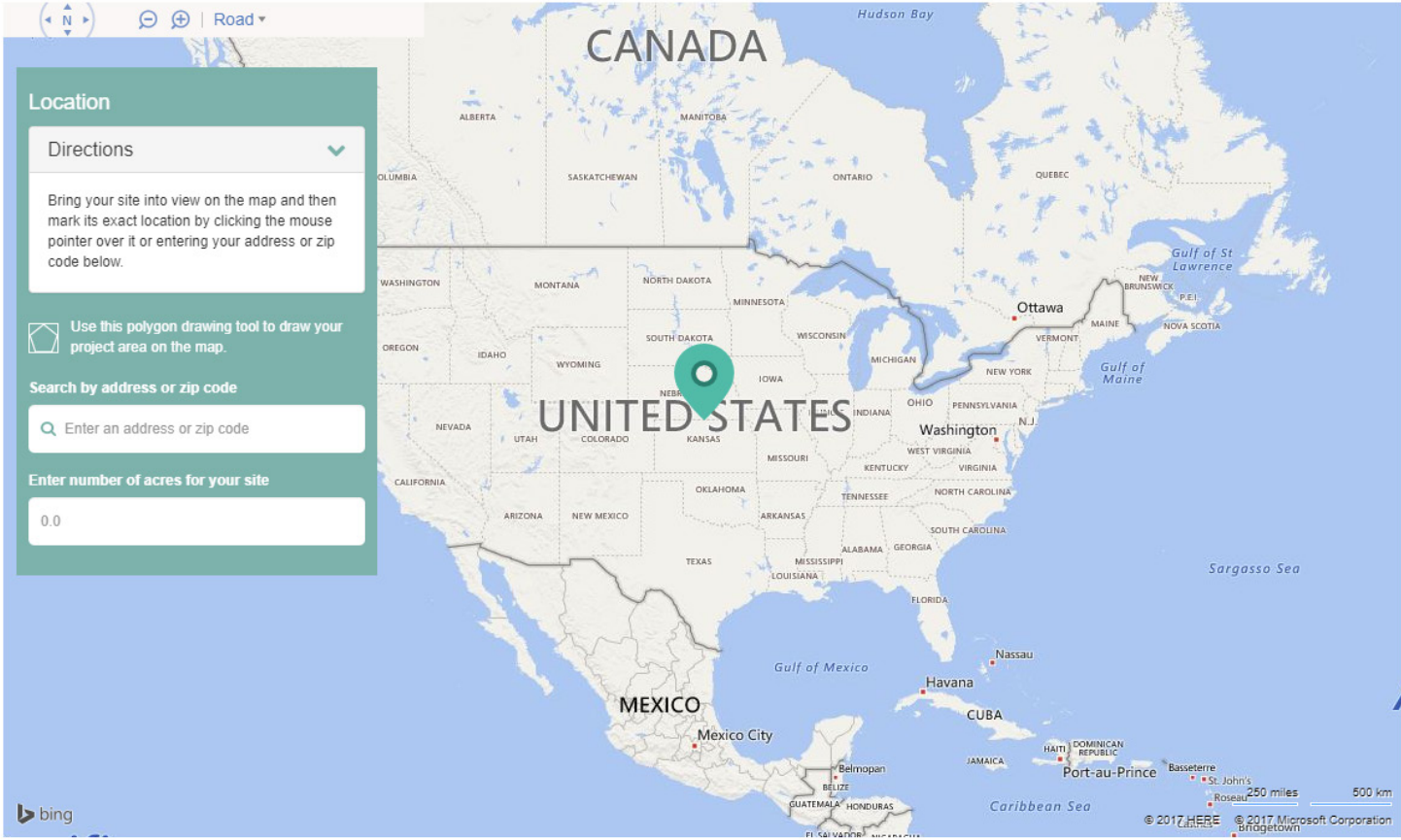
Select the Location tab to begin analyzing a new site.

[Analyze a New Site](#) [Save Current Site](#) [Exit](#)

SWC Mobile Web App

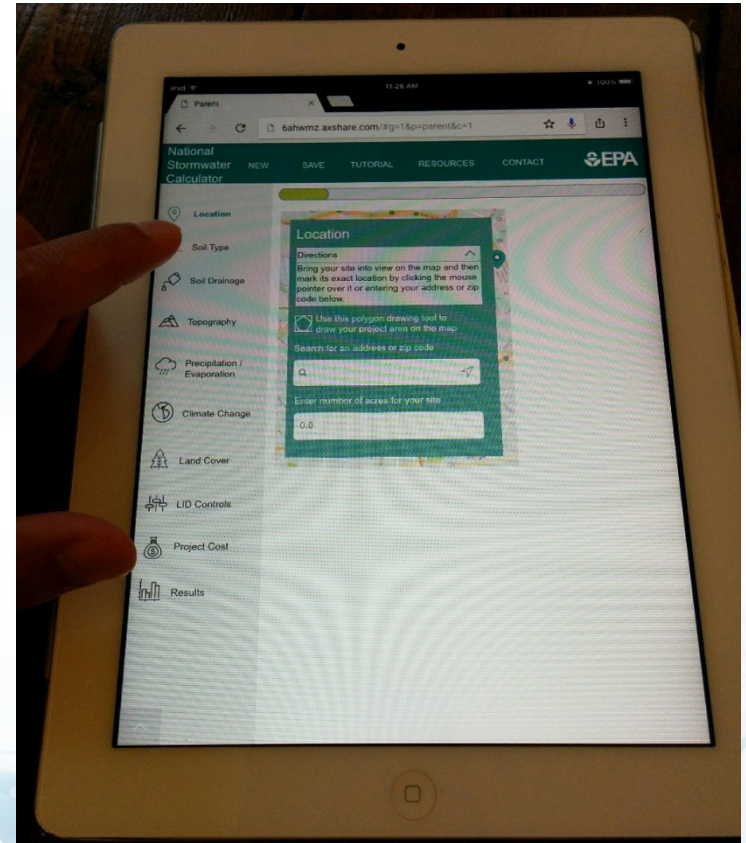
 National Stormwater Calculator

NEW SAVE OPEN RESOURCES CONTACT



Mobile Web App Development: 2016 - 2017

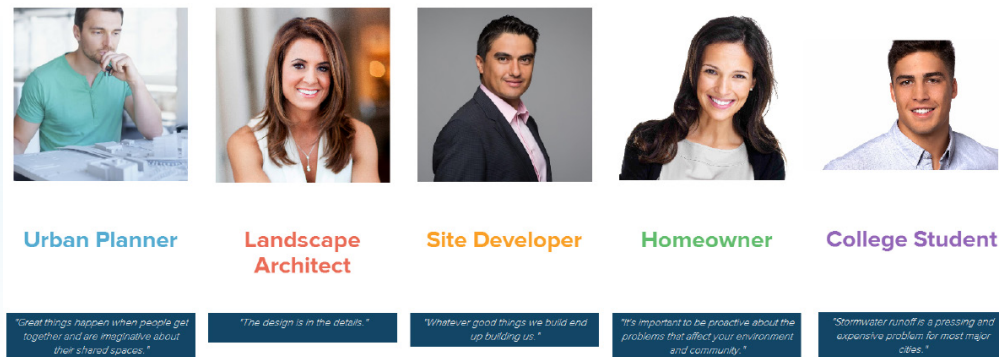
- Ability to function on any web browser
- Mobile friendly design (tablets and smartphones)
- Platform neutral: functions on Windows, Apple, and Linux computers
- Not found in an “app store” (Google Play or Apple Store)
 - Save it as a “favorite” website
- Requires a live Internet connection



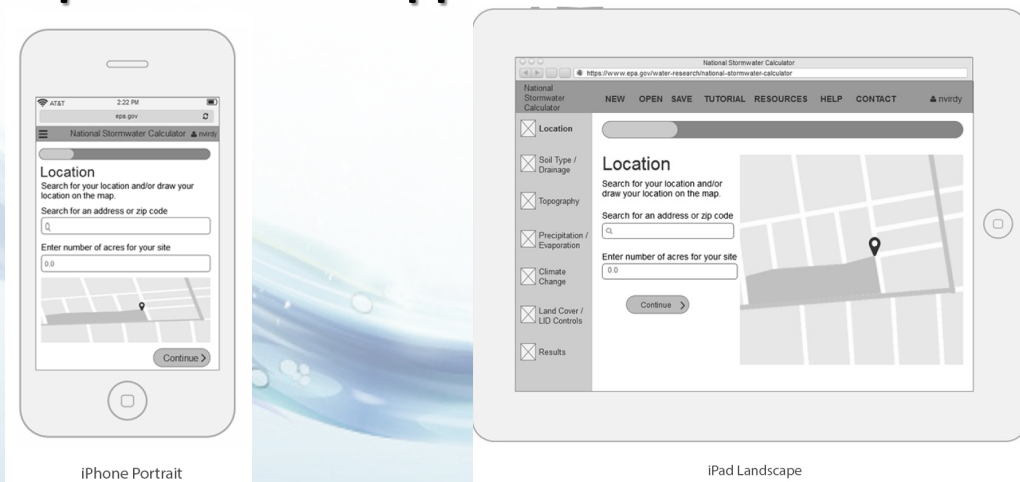
Mobile Web App Development: 2016 - 2017

- Gathered user information on existing desktop application of the SWC (Spring 2016)

User Persona Comparison



- Wireframe Development of web app user interface (Spring – Summer 2016)



Mobile Web App Development: 2016 - 2017

- Agile Development internal user testing (Winter – Spring 2017)

The screenshot shows the Breeze project management tool interface. At the top, there's a header with the 'breeze' logo, a search bar, and navigation links for 'New features', 'Tasks', 'Projects', 'Calendar', 'Reports', 'Activity', and a user profile for 'Marie Claire Calvo'. Below the header, the project name 'National Stormwater Calculator' is displayed. A task input field at the top right says 'Add a new task, #tag it, assign it to @user and !list' with an 'Add' button. Below this, there are tabs for 'Files', 'Filter tasks', 'Recent activity', and 'Add a new list'. The main workspace is divided into seven columns: 'Epics', 'Backlog', 'In Progress', 'Testing', 'User Test', 'Done', and 'Ice Box'. Each column contains several task cards. The 'Epics' column has five cards with user stories like 'As a user, I want to use the app on my desktop.' and 'As a user, I want to use the app on my phone.' The 'Backlog' column has five cards with user stories like 'As a user, I want to be able to create a new site.' and 'As a user, I want an indication on the navigation menu of what page I'm on.' The 'In Progress' column has two cards: 'Progress bar with updated progress' and 'Modal is movable around page'. The 'Testing' column has five cards: 'Home page', 'Site is accessible via desktop', 'Site is accessible via mobile', 'Create new site', and 'Name new site'. The 'User Test', 'Done', and 'Ice Box' columns are currently empty. A right arrow button is visible on the 'Ice Box' column.

Epics

- As a user, I want to use the app on my desktop. (general)
- As a user, I want to use the app on my tablet. (general)
- As a user, I want to use the app on my phone. (general)
- As a user, I want to see a home page. (general)
- As a user, I want to see a location page. (location page)

Backlog

- As a user, I want to be able to create a new site. (general)
- As a user, I want to have the option to name my site. (general)
- Save site - values stored in an XML file (general)
- As a user, I want to see my progress. (general)
- As a user, I want an indication on the navigation menu of what page I'm on. (general)

In Progress

- Progress bar with updated progress (general)
- Modal is movable around page (land cover page)

Testing

- Home page (general)
- Site is accessible via desktop (general)
- Site is accessible via mobile (general)
- Create new site (general)
- Name new site (general)
- Navigation menu with indication on what page user is on (general)

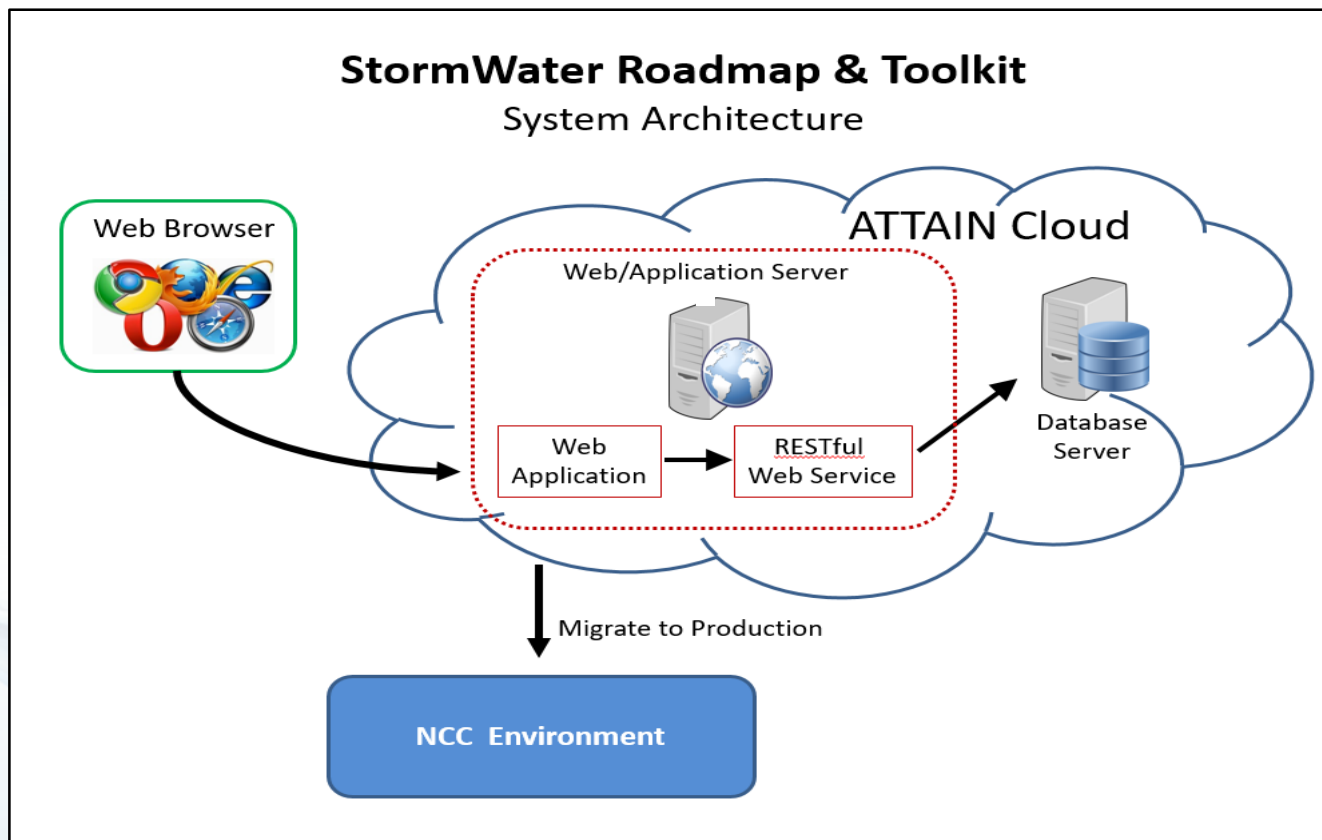
User Test

Done

Ice Box

Mobile Web App Development: 2016 - 2017

- Public Server staging and production testing (Summer 2017)



SWC:

Site Parameters and Embedded GIS Data-sets

- **Location:** Bing Maps
- **Soils:** NRCS SSURGO (*web service*)
- **Slope:** NRCS SSURGO
- **Hydraulic Conductivity:** NRCS SSURGO
- **Precipitation and Temperature:** National Climate Center (NCDC)-NOAA (*EPA's BASINS Model*)
- **Evaporation:** Calculation based on meteorological data
- **Climate Change Future Scenarios:** Precipitation & evaporation (*EPA's CREAT 2.0*)
- **Land-Cover/Use:** User provided
- **LID Practices (*new costing module available*):** User provided

SWC Mobile Web App Tour (Chicago, IL)

Location:

The screenshot displays the EPA National Stormwater Calculator mobile web app interface. The top navigation bar is teal with the EPA logo and the text "National Stormwater Calculator". To the right of the logo are links for "NEW", "SAVE", "OPEN", "RESOURCES", and "CONTACT".

On the left side, there is a vertical toolbar with icons for location, map, and various weather-related functions. The main content area shows a map of Chicago with a large orange polygon highlighting a specific site area. A teal location pin is placed on the map near N Clybourn Ave. A sidebar on the left contains the following sections:

- Location**
- Directions** (with a dropdown arrow):
Bring your site into view on the map and then mark its exact location by clicking the mouse pointer over it or entering your address or zip code below.
- Use this polygon drawing tool to draw your project area on the map.** (with a polygon icon)
- Search by address or zip code**
Chicago, N. Clybourn Ave and W. Wrightwood
- Enter number of acres for your site**
3.6439258677656756

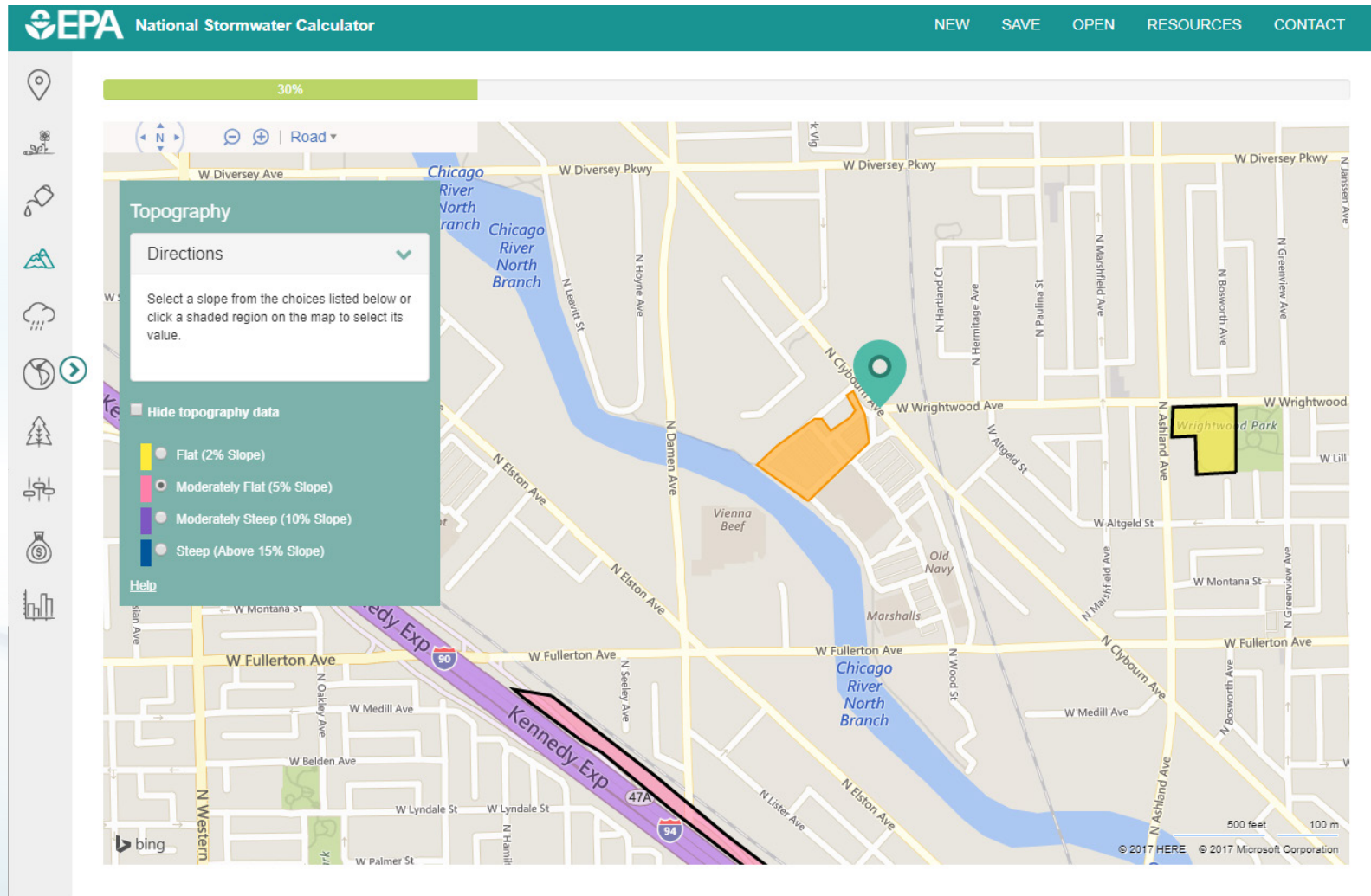
The map shows the Chicago River North Branch flowing through the city. A scale bar at the bottom right indicates 100 feet and 25 meters. The bottom of the map includes copyright information: "© 2017 HERE © 2017 Microsoft Corporation Pictometry Bird's Eye © 2017 MDA Geospatial Services Inc."

Soil Drainage:



SWC Mobile Web App Tour (Chicago, IL)

Topography:



SWC Mobile Web App Tour (Chicago, IL)

Historical Weather:

EPA National Stormwater Calculator NEW SAVE OPEN RESOURCES CONTACT

40%

Precipitation/Evaporation

Directions

Select a rain gage location to use as a source of hourly rainfall data and a weather station to use as a source for evaporation rates.

Rain Gage

CHICAGO MIDWAY AP

Weather Station

CHICAGO MIDWAY AP

Rainfall Information

Record Start Date: 1994/12/31
Record End Date: 2006/12/31
Annual Rainfall: 44.26"

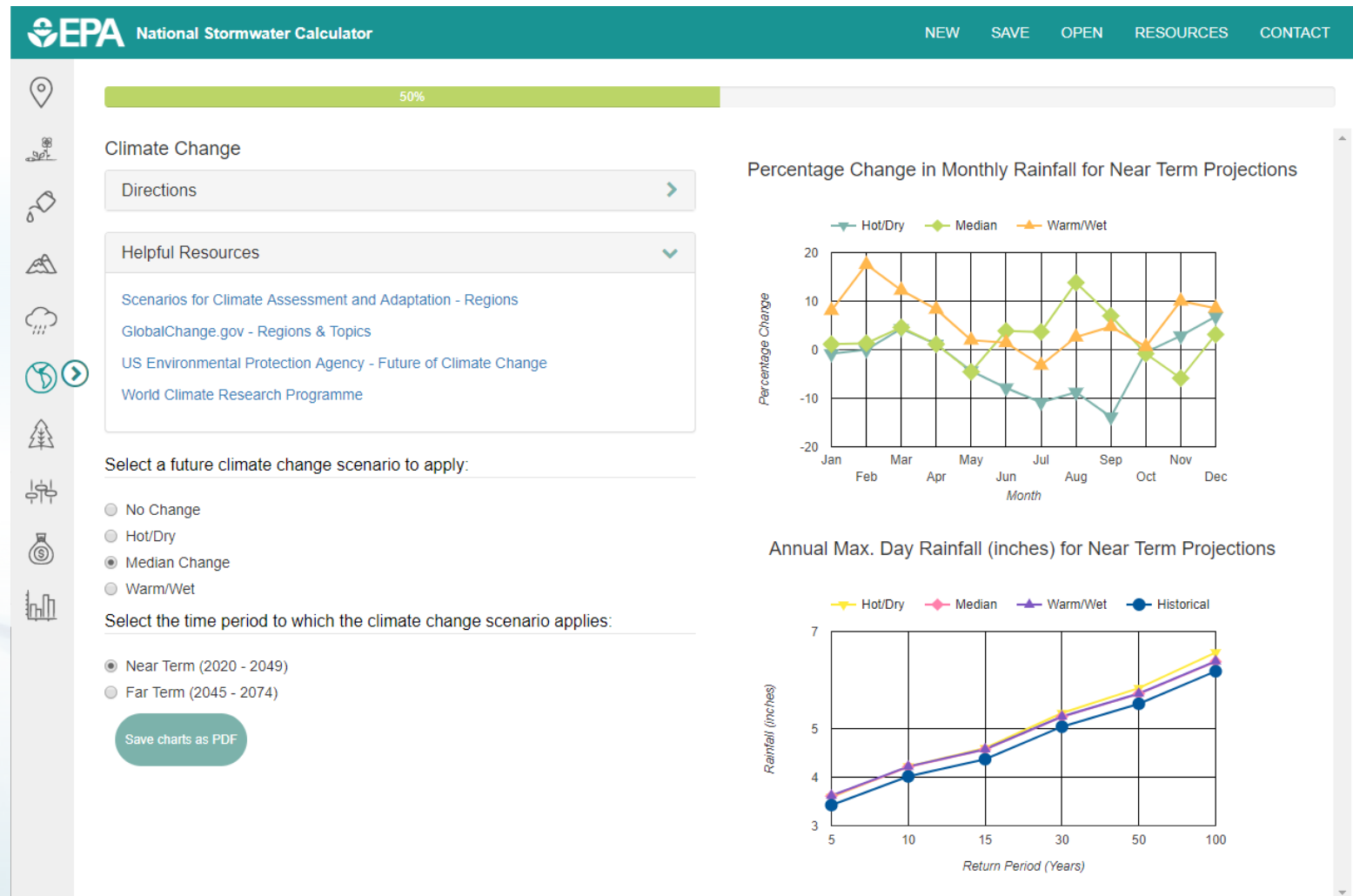
Download rainfall/evaporation data

Help

<https://swcweb.epa.gov/stormwatercalculator/calculator.html?siteName=Chicago+redevelopment+project#>


SWC Mobile Web App Tour (Chicago, IL)

Climate Change Scenarios & Extreme Storm Events:

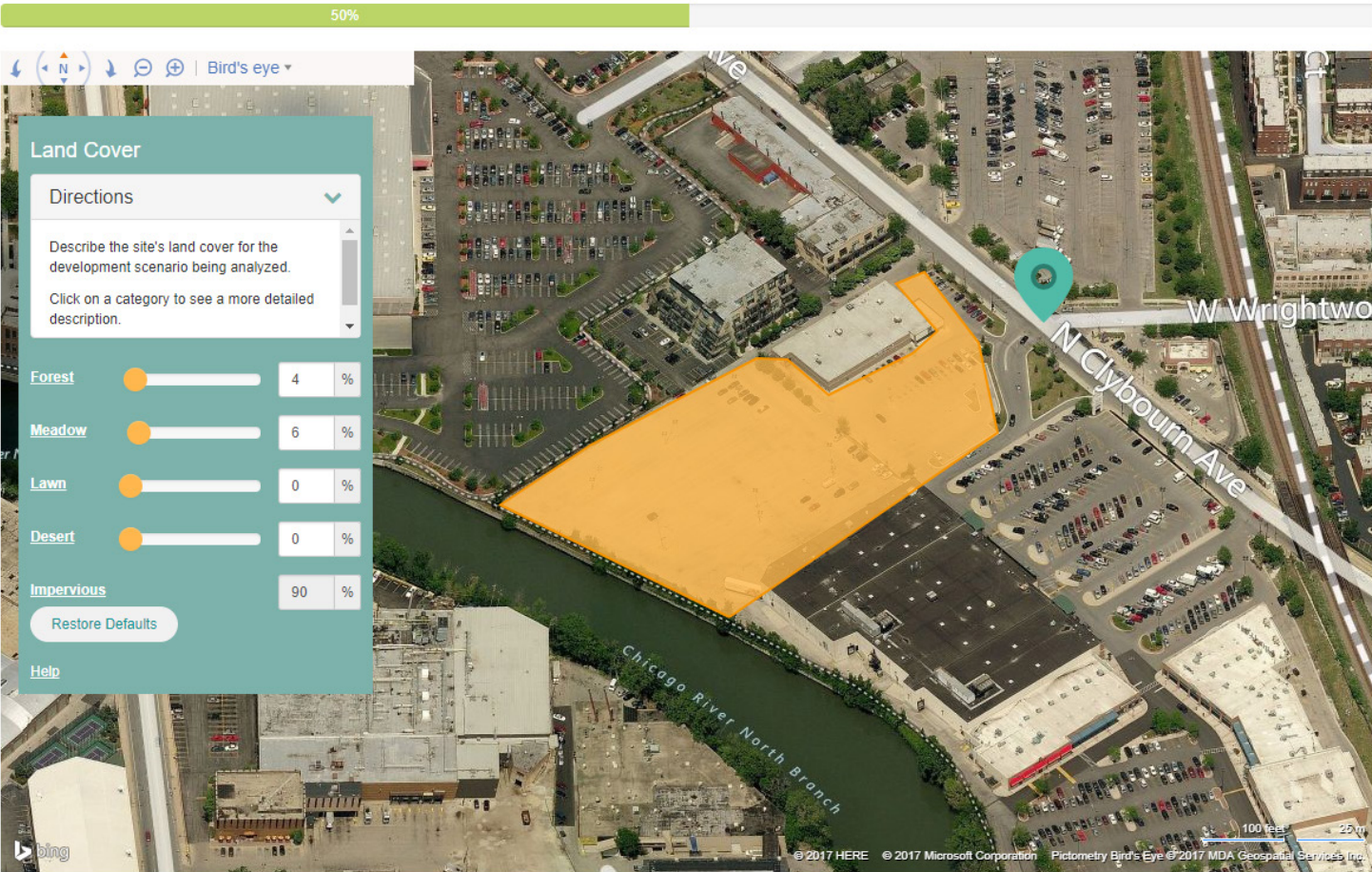



SWC Mobile Web App Tour (Chicago, IL)

Land Cover:

 **National Stormwater Calculator**

NEW SAVE OPEN RESOURCES CONTACT



50%

Land Cover

Directions

Describe the site's land cover for the development scenario being analyzed.

Click on a category to see a more detailed description.


Forest	<input type="range"/>	4	%
Meadow	<input type="range"/>	6	%
Lawn	<input type="range"/>	0	%
Desert	<input type="range"/>	0	%
Impervious	<input type="range"/>	90	%

Restore Defaults














Help

SWC Mobile Web App Tour (Chicago, IL)












































LID Controls:

 **National Stormwater Calculator**

NEW SAVE OPEN RESOURCES CONTACT



60%



SWC Mobile Web App Tour (Chicago, IL)

Project Cost (Development Type):

The screenshot displays the EPA National Stormwater Calculator mobile web app. The interface features a teal header with the EPA logo and navigation links (NEW, SAVE, OPEN, RESOURCES, CONTACT). A sidebar on the left contains icons for various project types and site suitability. The main content area shows the 'Project Cost' section with a 'Directions' dropdown and a 'Verify cost estimation variables below' instruction. Below this, there are three sections: 'Choose a Project Type' with radio buttons for 'Re-Development' (selected) and 'New Development'; 'Choose your Site Suitability' with radio buttons for 'Poor', 'Moderate' (selected), and 'Excellent'; and 'Choose your Cost Region' with a dropdown menu set to 'Chicago(13 miles)'. A 'Regional Multiplier' of 0.92 is displayed at the bottom. A modal window titled 'Re-Development' is open, providing a definition: 'Re-Development is construction that is a change in existing development (land cover, land use, or similar development alteration) which requires new or alteration of existing stormwater management facilities.' It also includes a paragraph about costs: 'Costs of removal, decommissioning, or alteration of existing structures or additional (new) infrastructure is typically required to connect existing structures and results in costs that are greater than what would be anticipated with a new development site.' Two side-by-side images labeled 'before' and 'after' show a street scene. The modal also contains a paragraph explaining that re-development and extensive retrofit costs are typically higher than new development costs and that selecting 'Re-development' influences site complexity and cost estimation. A 'Close' button is at the bottom right of the modal. The background is an aerial view of a city street with labels for 'W Wrightwo' and 'Clybourn Ave'.

EPA National Stormwater Calculator

NEW SAVE OPEN RESOURCES CONTACT

75%

Project Cost

Directions

Verify cost estimation variables below. Click on each option to learn more.

Choose a Project Type

- ☒ Re-Development
- ☐ New Development

Choose your Site Suitability

- ☐ Poor
- ☒ Moderate
- ☐ Excellent

Choose your Cost Region

Cost Region

Chicago(13 miles)

Regional Multiplier 0.92

Re-Development

Re-Development is construction that is a change in existing development (land cover, land use, or similar development alteration) which requires new or alteration of existing stormwater management facilities.

Costs of removal, decommissioning, or alteration of existing structures or additional (new) infrastructure is typically required to connect existing structures and results in costs that are greater than what would be anticipated with a new development site.

Re-development and extensive retrofit costs are typically higher than new development costs because existing structures might have to be removed or new structures may be required but may not be located in a preferred location.

Selecting "Re-development" on the "Project Cost" tab of the National Stormwater Calculator influences the site complexity, and shifts the costs towards a higher complexity cost estimation.

Re-development combined with information on site suitability, topography, and soil drainage determines whether complex, typical, or simple cost curves apply. See User Guide for more information.

Close

SWC Mobile Web App Tour (Chicago, IL)

Project Cost (Site Suitability):

The screenshot displays the EPA National Stormwater Calculator interface. On the left, a sidebar contains navigation icons. The main content area is divided into two panels. The left panel, titled 'Project Cost', includes a 'Directions' dropdown, a note to 'Verify cost estimation variables below', a 'Choose a Project Type' section with radio buttons for 'Re-Development' (selected) and 'New Development', a 'Choose your Site Suitability' section with radio buttons for 'Poor', 'Moderate' (selected), and 'Excellent', a 'Choose your Cost Region' dropdown set to 'Chicago(13 miles)', and a 'Regional Multiplier' of 0.92. The right panel, titled 'Moderate Site Suitability', explains that site suitability is a measure of construction feasibility and lists characteristics: few physical obstructions, few utility conflicts, and other features that may make construction challenging and costly. It includes an aerial image with labels for 'Parking closures', 'Few physical obstacles', and 'Underground utilities present'. Below this, it states that moderate suitability may result in higher costs due to the need for additional excavation and accommodation for physical obstructions. It also notes that selecting 'Site Suitability - Moderate' on the 'LID Controls' tab influences site complexity and cost estimation. The bottom of the right panel mentions that moderate site suitability combined with development type, topography, and soil drainage determines whether complex, typical, or simple cost curves apply. A 'Close' button is at the bottom right of the right panel. The background is an aerial view of a city street intersection, with labels for 'W Wrightwo' and 'N Clybourn Ave'.

EPA National Stormwater Calculator

NEW SAVE OPEN RESOURCES CONTACT

75%

Project Cost

Directions

Verify cost estimation variables below. Click on each option to learn more.

Choose a Project Type

- ☒ Re-Development
- ☐ New Development

Choose your Site Suitability

- ☐ Poor
- ☒ Moderate
- ☐ Excellent

Choose your Cost Region

Cost Region: Chicago(13 miles)

Regional Multiplier: 0.92

Moderate Site Suitability

Site suitability is a measure of construction feasibility and includes factors such as topography, soil type, slope, and other physical features that might result in higher implementation costs.

Moderate site suitability refers to sites that have several of the following characteristics:

- Few physical obstructions,
- Few utility conflicts,
- Other features that may make construction of stormwater management infrastructure challenging and likely more costly, but less than a site with poor site suitability.

Parking closures

Few physical obstacles

Underground utilities present

Sites determined to have moderate suitability for LID practices may result in higher costs because of the potential need for additional excavation, accommodation for physical obstructions including utilities, required retaining walls, moderately challenging access, limited dewater, the addition of engineered or custom media blends, or need to address geotechnical or groundwater concerns.

Selecting "Site Suitability - Moderate" on the "LID Controls" tab of the National Stormwater Calculator influences the site complexity, and may shift the costs towards a higher complexity cost estimation compared to.

Moderate site suitability combined with information on development type, topography, and soil drainage determines whether complex, typical, or simple cost curves apply. See User Guide for more information.

Close

W Wrightwo


N Clybourn Ave

100 feet 25 m


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SWC Mobile Web App Tour (Chicago, IL)


Project Cost (Bureau of Labor Statistics Cost Region):

 **National Stormwater Calculator**

NEW SAVE OPEN RESOURCES CONTACT



75%

 Bird's eye ▾

Project Cost

Directions ▾

Verify cost estimation variables below. Click on each option to learn more.

Choose a Project Type

☒ Re-Development
☐ New Development

Choose your Site Suitability

☐ Poor
☒ Moderate
☐ Excellent

Choose your Cost Region

Cost Region

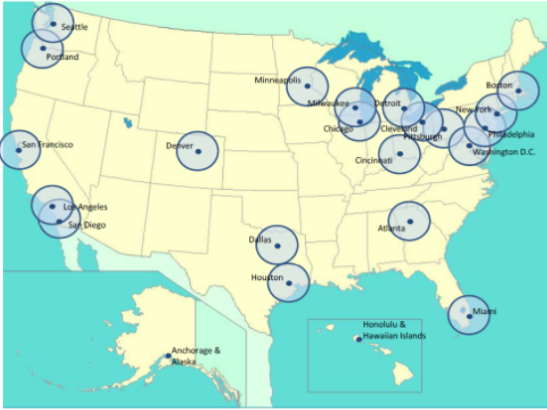
Chicago(13 miles) ▾

Regional Multiplier


0.92


Cost Regions ✕


Your "region" has been determined from the Location tab. Using data from the Bureau of Labor Statistics (BLS) a multiplier has been computed representing the relative regional differences in costs for your nearest region (unless "National" is shown) compared to National costs. Three regions are reported from 20 of the major cities for which BLS data is available. Users can select another region or select "National" to apply a multiplier of 1, representing a national average. If you prefer to apply your own multiplier, select "Other" and enter the multiplier in the Regional Multiplier field (a multiplier >1 would adjust above the National average, while a multiplier < 1 would adjust below the National average). The default multiplier for your region is shown in the Regional Multiplier box. The light blue circles in the figure below represent areas within a 100-mile radius of each major city. See User Guide for more information.



Close




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 United States
Environmental Protection
Agency











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SWC Mobile Web App Tour (Chicago, IL)

Results (Summary):

 National Stormwater Calculator

NEW SAVE OPEN RESOURCES CONTACT



100%

Results

Directions

Options:

Years to analyze:
20

Event threshold (inches):
0.00

☐ Ignore Consecutive Days

Actions:

Refresh Results

Use as Baseline Scenario

Remove as Baseline Scenario

Print Results to PDF File

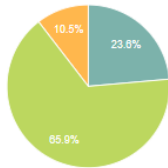
Display a report:

- Site Description
- Summary Results
- Rainfall / Runoff Events
- Rainfall / Runoff Exceedance Frequency
- Rainfall Retention Frequency
- Runoff Contribution by Rainfall Percentile
- Extreme Event Rainfall / Runoff
- Cost Summary

Current Scenario

Annual Rainfall: 27.06 inches


Runoff Infiltration Evaporation












Statistic	Current
Average Annual Rainfall (inches)	27.06
Average Annual Runoff (inches)	6.40
Days per Year With Rainfall	96.55
Days per Year With Runoff	83.18
Percent of Wet Days Retained	13.85
Smallest Rainfall w/ Runoff (inches)	0.01
Largest Rainfall w/o Runoff (inches)	0.08
Max Rainfall Retained (inches)	6.34

SWC Mobile Web App Tour (Chicago, IL)

Results (Cost Summary):

 **National Stormwater Calculator**

NEW SAVE OPEN RESOURCES CONTACT



100%

Directions >

Options:

Years to analyze:
20

Event threshold (inches):
0.00

☐ Ignore Consecutive Days

Actions:

Refresh Results

Use as Baseline Scenario

Remove as Baseline Scenario

Print Results to PDF File

Display a report:

☐ Site Description

☐ Summary Results

☐ Rainfall / Runoff Events

☐ Rainfall / Runoff Exceedance Frequency

☐ Rainfall Retention Frequency

☐ Runoff Contribution by Rainfall Percentile

☐ Extreme Event Rainfall / Runoff

☒ Cost Summary

Cost Summary
[Tabular View](#) | [Graphical View](#)

Estimate of Probable Capital Costs (estimates in 2016 US.\$)

Estimate of Annual Probable Maintenance Costs (estimates in 2016 US.\$)

Note: Site complexity variables that affect cost shown below:

 United States Environmental Protection Agency

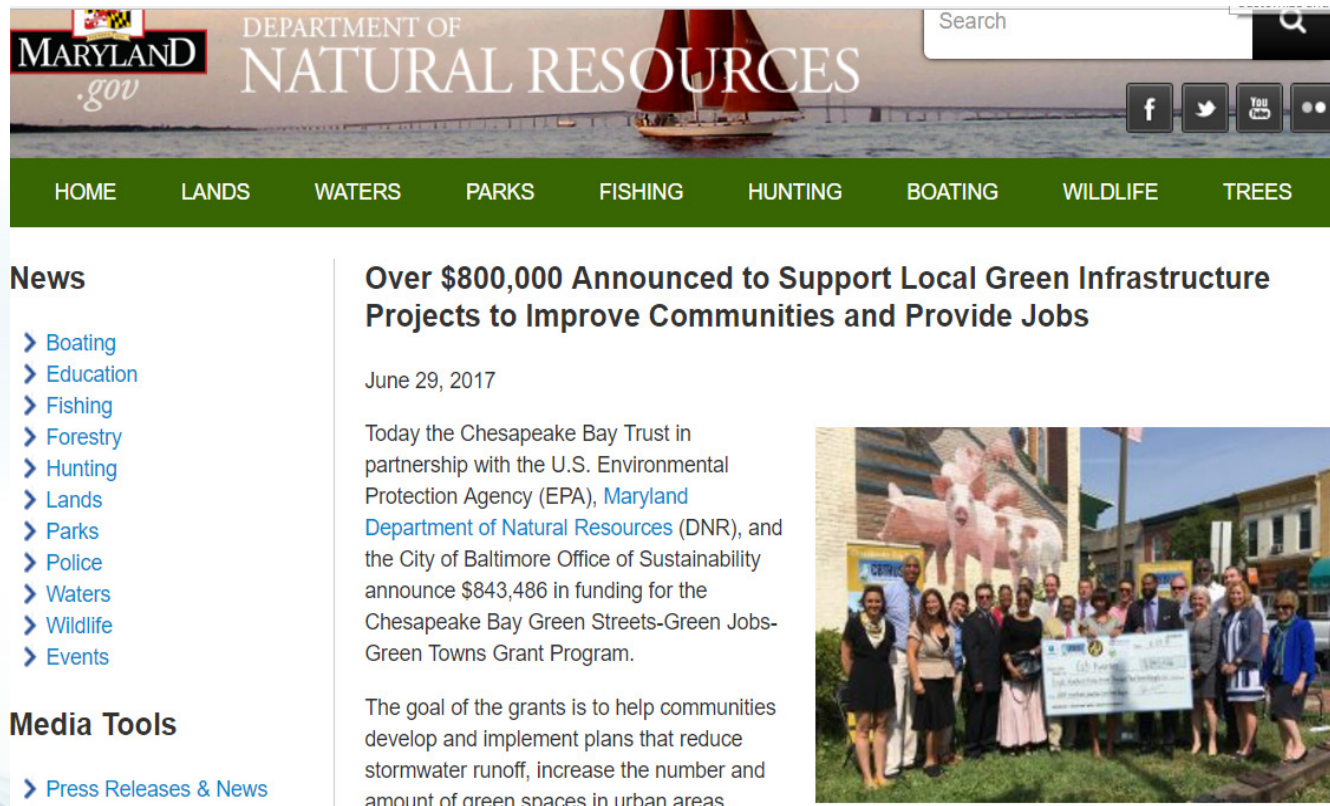
28

Interpreting the Results

- Informing next steps for finalizing costs of stormwater projects and construction plans/designs
- Comparing the relative magnitude of planning level costs for different stormwater management solutions
 - Finding least cost option(s) while meeting performance goals
- Comparisons may be made between national and regional cost estimates:
 - Using local knowledge in selection of regional BLS cost multipliers

SWC Analysis: Potential Next Steps

- Sharing planning results with decision-makers
- Applying for funding
- Developing construction plans/designs
- Final construction costs
- Construction



The screenshot shows the Maryland Department of Natural Resources (DNR) website. The header features the Maryland state logo and the text "DEPARTMENT OF NATURAL RESOURCES". A search bar is located in the top right corner. Below the header is a green navigation bar with links to HOME, LANDS, WATERS, PARKS, FISHING, HUNTING, BOATING, WILDLIFE, and TREES. The main content area displays a news article titled "Over \$800,000 Announced to Support Local Green Infrastructure Projects to Improve Communities and Provide Jobs" dated June 29, 2017. The article text states that the Chesapeake Bay Trust, in partnership with the U.S. Environmental Protection Agency (EPA), the Maryland Department of Natural Resources (DNR), and the City of Baltimore Office of Sustainability, announced \$843,486 in funding for the Chesapeake Bay Green Streets-Green Jobs-Green Towns Grant Program. The goal of the grants is to help communities develop and implement plans that reduce stormwater runoff, increase the number and amount of green spaces in urban areas. To the left of the article is a "News" sidebar with a list of categories: Boating, Education, Fishing, Forestry, Hunting, Lands, Parks, Police, Waters, Wildlife, and Events. Below the "News" sidebar is a "Media Tools" section with a link to "Press Releases & News". To the right of the article text is a photograph of a group of people standing in front of a large pink pig sculpture, holding a banner that reads "CHESAPEAKE BAY GREEN STREETS-GREEN JOBS-GREEN TOWNS GRANT PROGRAM".

News

- > Boating
- > Education
- > Fishing
- > Forestry
- > Hunting
- > Lands
- > Parks
- > Police
- > Waters
- > Wildlife
- > Events

Media Tools


- > Press Releases & News

Over \$800,000 Announced to Support Local Green Infrastructure Projects to Improve Communities and Provide Jobs

June 29, 2017

Today the Chesapeake Bay Trust in partnership with the U.S. Environmental Protection Agency (EPA), [Maryland Department of Natural Resources](#) (DNR), and the City of Baltimore Office of Sustainability announce \$843,486 in funding for the Chesapeake Bay Green Streets-Green Jobs-Green Towns Grant Program.

The goal of the grants is to help communities develop and implement plans that reduce stormwater runoff, increase the number and amount of green spaces in urban areas.



<http://news.maryland.gov/dnr/2017/06/29/over-800000-announced-to-support-local-green-infrastructure-projects-to-improve-communities-and-provide-jobs/>

SWC Next Steps

- Training on using the mobile web app
- Updating historical weather data (web services)
- Improving mobile web app based on user feedback
- Phasing out of the SWC desktop application

Discussion and Questions

Thank You!

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National Stormwater Calculator Website:

<https://www.epa.gov/water-research/national-stormwater-calculator>

Contact: SWC@epa.gov