



TECHNOLOGY SERVICES

Stormwater Tools™ Software Platform

Operationalize BMP Asset Management to Improve Watershed Health

Regional and municipal water managers across the country are turning to web applications to support stormwater management programs. Stormwater Tools meets this need with specialized tools for Best Management Practices (BMP) asset management and watershed planning. While assets and associated observations may vary by region, common data management objectives do not. These objectives—maintaining consistent BMP asset inventories across jurisdictions, rapidly assessing BMP condition, tracking maintenance activities, and determining the performance of BMP assets relative to Total Maximum Daily Load (TMDL) and watershed plan requirements—are the core building blocks of ESA's modular web application.

Effective stormwater planning and management inevitably calls for coordinated efforts among various municipalities and water districts in a given region. Stormwater Tools gives regional stakeholders a shared view of what is happening and what is possible, providing a starting point for richer collaboration, adaptive management, and regional decision making.



Benefits



1. Foster Collaboration

Establish a centralized source of shared data for regional stakeholders

2. Improve Analysis

Quickly Assess BMP performance and delineate catchment areas

3. Guide Planning

Model stormwater pollutant loading scenarios to compare water quality improvement strategies

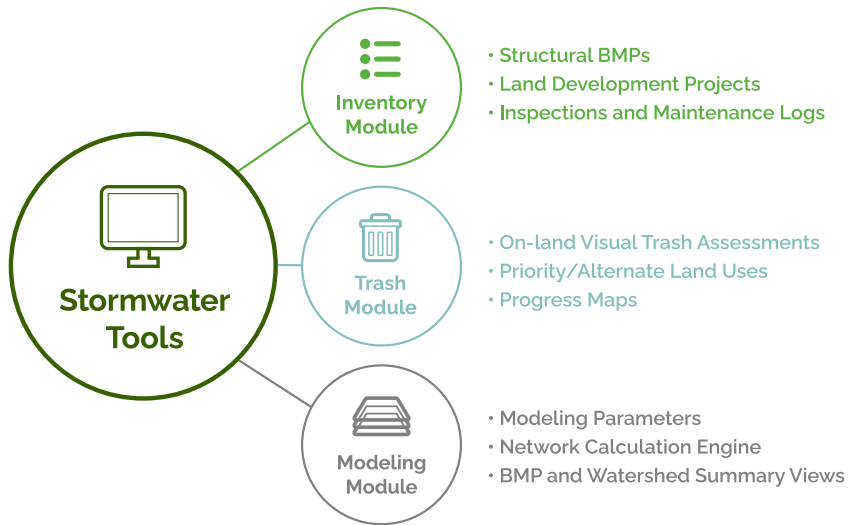
"The Lake Tahoe Info Stormwater Tools software is alarmingly intuitive!"

Jason Burke | Stormwater Program Coordinator, City of South Lake Tahoe

Monitor, Model, Plan

A Platform for Stormwater Management

The Stormwater Tools web application is perfectly suited for multi-jurisdictional collaboration while facilitating inter-operability with other data systems. The platform includes the Inventory Module, Trash Module, and Modeling Module.



Key Platform Functionality

MONITOR	MODEL	PLAN
<ul style="list-style-type: none">→ Track Best Management Practices (e.g., swales, ponds, filtration devices, and infiltration basins) and document their impact→ Standardize asset inventory and performance assessment methodologies→ Quantify stormwater capture and pollutant load reduction directly from the BMP inventory and development sites→ Track progress towards compliance with TMDLs→ Increase operational efficiencies for inspections and maintenance records→ Make implementation and asset management plans more data-driven→ Easily configurable by system administrators to add new BMP types or observations→ Leverage platform data to prioritize and track maintenance activities→ Support watershed delineations with fully integrated geospatial analysis→ Document progress toward goals and share results with program managers and the public		

Key Clients



Tahoe Regional Planning Agency
EIP Project Tracker



Nevada Division of
Environmental Protection



Nevada Tahoe
Conservation District

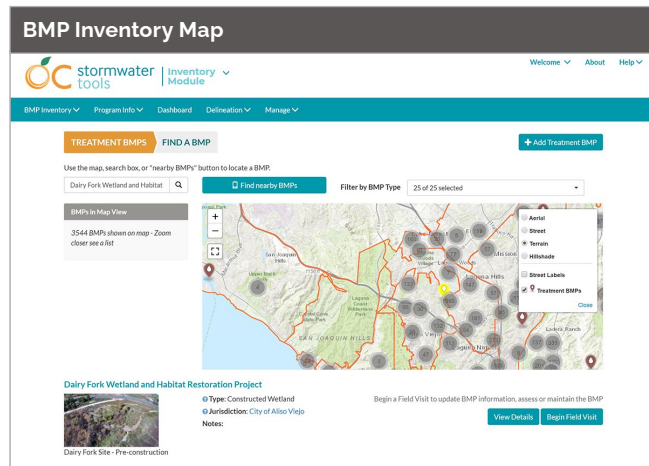


Orange County
Public Works



City of Long Beach

Stormwater Tools Features



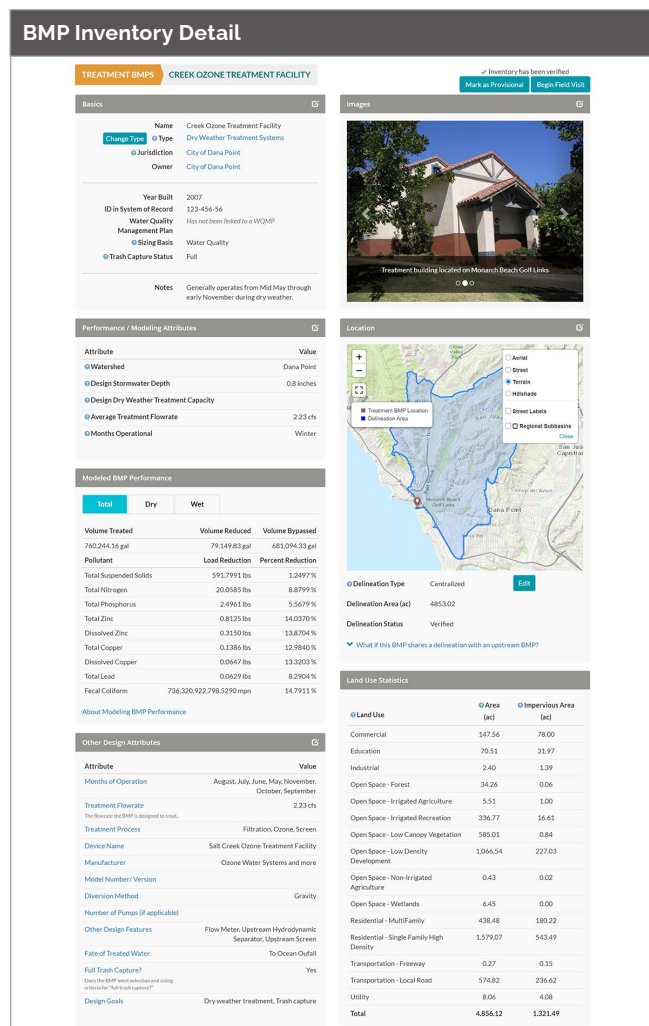
Manage BMP Assets with the Inventory Module

Key Benefits

- Develop and maintain a complete record of BMPs
- Record rapid visual assessments
- Get automated BMP condition scores
- Track BMP maintenance

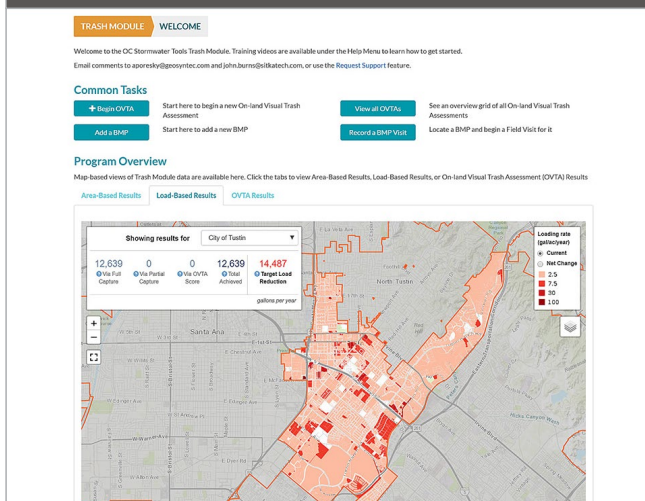
Features

- Single, centralized storage for BMP asset data along with attributes, performance parameters, and related inspection and maintenance logs
- Automated BMP Assessment Scores use rapid visual observations, benchmarks, and thresholds to weight the observations using a built-in pass/fail methodology
- System administrators are able to configure and add BMP types, attributes, benchmarks, thresholds, and weighting
- Supports both desktop and mobile workflows including field-optimized workflows to collect BMP photos and attributes.
- Track parcel-based private development BMPs
- Development Site Inventory and Operations & Maintenance Verification provides a central repository for attributes, locations, and associated files for new development and significant redevelopment projects



Stormwater Tools Features

Load-Based Trash Assessment



Assess Efforts and Results with the Trash Module

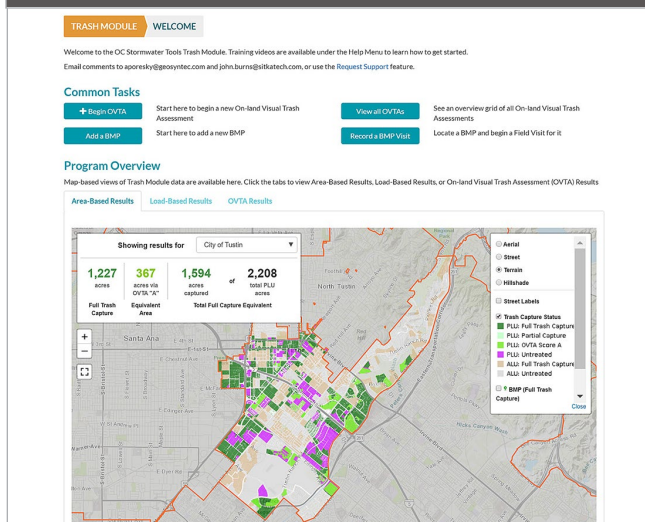
Key Benefits

- Determine progress towards trash reduction goals in real-time
- Perform On-land Visual Trash Assessments (OVTAs)

Features

- Combine asset information with GIS mapping resources
- Manage jurisdictional land use layers for both priority and alternate land uses
- Track progress towards compliance with TMDLs
- Assign attributes to inventoried BMPs
- View current progress reports in multiple ways, including Area-Based (priority land use acres), Load-Based (gallons per year), and OVTAs (acreage of full capture equivalent)

Area-Based Trash Assessment



Guide Planning and Prioritization with the Modeling Module

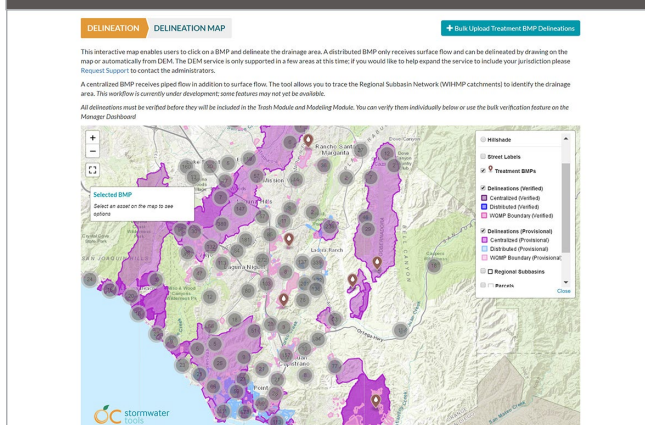
Key Benefits

- Quantify stormwater capture and pollutant load reduction directly from BMP inventory and development sites
- Produce reliable and repeatable performance estimates

Features

- Modeling engine calculations leverage data for catchments, BMPs, and flow paths to recalculate results in real-time each time users update the asset inventory
- Calculations account for the cumulative benefit of nested stormwater treatment facilities
- Automatically calculate the subset of the watershed affected by an asset inventory update
- Calculate reductions for multiple regulated stormwater pollutants including bacteria, metals, TSS, and nutrients
- Quantify urban runoff captured during dry and wet weather

Delineation of Watershed Drainage Areas



Open-Source Software Benefits

Our clients see an advantage to open source solutions because they avoid vendor lock-in and are available for anyone to modify, enhance, and update over time. Open-source software additionally encourages users to participate in an open user-community to guide platform roadmap and feature implementation.

TOPIC OF COMPARISON	STORMWATER TOOLS PLATFORM	PROPRIETARY SOFTWARE
Customization	Additional improvements and refinements can be implemented to meet specific needs	When available you must adapt to vendor's conventions and are often subject to vendor's product roadmap
Third-Party Integration	External tools can be readily integrated using standards-based web services	Functionality varies; often you must conform to proprietary product's requirements
Privacy	FISMA/NIST 800-53 information security standards certified	Typically handled; may not be based on standards
Data Export	Export data to Excel or GIS file; alternatively, external systems can request data on-demand via web services	Functionality varies; you may not be able to get data out in a readily usable format
Ongoing Costs	You control the software and can choose a different vendor or hosting arrangement at any time	You do not control the software; cost to switch to a different platform or solution may be high

Plug into a Community of Like-Minded Organizations

Because Stormwater Tools is open source, upgrades and new features added by one organization benefit all organizations.

Learn More

See Case Study of Stormwater Tools Deployment

- Orange County Stormwater Tools:
esassoc.com/projects/oc-stormwater-tools

Visit Stormwater Tools Deployments Online

- Lake Tahoe Info Stormwater Tools:
stormwater.laketahoeinfo.org
- Orange County Stormwater Tools:
ocstormwatertools.org

Schedule a Demo

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