

**19th Annual  
Southeast New York  
Stormwater Conference  
*and*  
Trade Show**



**October 16th, 2019**

*Presented by:*

**The Lower Hudson Coalition of  
Conservation Districts**



**[www.lhccd.net](http://www.lhccd.net)**

# SENY STORMWATER CONFERENCE

## PRESENTATION ABSTRACTS

### Factors Influencing the Establishment of Stormwater Utilities in the U.S.

Linda J. Allen, PhD, PE

#### **Abstract:**

Communities throughout the U.S. struggle to provide basic public services to their residents, including stormwater management services and national level regulations associated with municipal storm sewer systems have only added to this challenge. Increasingly, stormwater utilities are being established to fund stormwater management programs. As of 2018, there were an estimated 1,800 to 2,000 stormwater utilities in the U.S., a substantial increase from the approximately 60 utilities that existed in late 1980s. However the establishment of these utilities has varied both temporally and spatially across the country. Research was conducted to examine the factors at the national, state, and local-levels that give rise to this variation. Data sources included interviews (semi-structured) with professionals and government representatives, and secondary sources such as state laws, ordinances, and utility reports. Data were collected from a random sample of 43 communities in eight states: Alabama, Arkansas, Idaho, Kansas, Minnesota, New Hampshire, Ohio, and Utah.

Overall, research findings indicate that a lack of clear legal authority, presence of stormwater regulations, and political and public opposition all influence the establishment of a stormwater utility, however the influence of these factors is more nuanced than shown by previous research. Moreover, this research identified several factors that

influence the setup of utilities that had not been previously identified, including variations in state-level implementation and enforcement of stormwater regulations, general public attitudes, and the robustness of a community's baseline stormwater management program. These different factors come into play to varying degrees in individual communities and whether a community succeeds or fails in setting up a utility depends on the final balance of these factors. This research has several implications for both policymakers and practitioners to create a context more supportive for establishing stormwater utilities.

### **New York State's MS-4 Permit: An Update**

Natalie Brown and Adedayo Adewole | *NYS Department of Environmental Conservation*

#### **Abstract:**

We are 11 years past the date the MS-4 permit had to be fully implemented. Some MS-4s are still struggling to come into compliance. We will discuss the common issues that MS-4 are experiencing and how to comply with the current MS-4 permit. Common questions surrounding SWPPP review and compliance will be addressed.

## Two New DEC Online Interactive Mappers

Scott Donnelly, Cathy Kittle, Ingrid Haeckel | NYS Department of Environmental Conservation

### **Abstract:**

This session will introduce two new online interactive mappers available from the NYS Department of Environmental Conservation (DEC): the DECinfo Locator and the Hudson Valley Natural Resource Mapper. Launched to the public in July, DECinfo Locator is an interactive mapper with more than 50 interactive data layers, allowing users to download permits, view former industrial site cleanup plans, see water quality reports and much more, based on where they live, work, or play. Selecting a map feature can bring up links to database records for petroleum bulk storage facilities, oil wells, or permitted mines. Users can also view potential environmental justice areas and Climate Smart Communities or find out what local wastewater facilities are doing to reduce their impact on New York's waterbodies. The Hudson Valley Natural Resource Mapper was launched in 2018 and contains over 30 interactive data layers identifying important habitats, water resources, and scenic and recreation areas in the 10-county Hudson River Estuary watershed. Whether planning at the site level or at the town-wide scale, having information about natural features such as stream habitat, floodplains, wetlands, and large forests can guide how to conserve natural areas in meaningful ways to achieve multiple community benefits.

Presenters will provide live demos of both mappers highlighting layout and functions, as well as information about data sources. Examples of applications for local planning and stormwater management will be provided. Come learn all the capabilities of these new tools and how DEC is increasing access to its public information.

## The Evolution of Turf Reinforcement Mat Technology

Tim Lancaster | GrassWorx LLC

### Abstract:

Climate change is ushering in more frequent, higher intensity storm events, subjecting drainage channels, streams, riverbanks, and shorelines to greater flow discharges and erosive forces more often today than ever before. Historically, turf reinforcement mats have proven to be effective vegetative alternatives to traditional rock and concrete materials for stabilizing many of these areas. Turf reinforcement mats reinforce the root and stem structures of vegetation, allowing that vegetation to withstand much higher flows than unreinforced turf. Users of turf reinforcement mat technology have benefitted with substantial cost savings over hard armor solutions, and also by being able to employ a green solution that was not previously viable. Turf reinforcement technology is less than 50 years old, and has evolved significantly since its introduction in the 1970's. This presentation will review the introduction of this technology, and how it has gradually evolved over time. Major emphasis will be placed on the role of independent product testing and important innovations that have been introduced throughout the years, along with the development of industry standards that have helped move this innovative technology into the forefront of a growing erosion control industry. Attendees can expect to leave this session with a better understanding of turf reinforcement technology for providing effective erosion control under challenging conditions.

## **Drainage! Drainage! Drainage!**

Shawn Lipscomb | ABT, Inc.

### **Abstract:**

A veteran contractor once wisely stated, “As you walk a new jobsite, the main three obstacles you need to contend with are drainage, drainage and drainage.” Few would argue that drainage considerations are critical to any successful project involving earth disturbance. In fact, drainage has been part of project planning since ancient times. For example, many roads built during the Roman Empire period remain in service to this day. Led by veteran drainage professional Shawn Lipscomb, this session will present the basic principles underlying a solid drainage plan, and will also take a close look at both traditional responses and the latest technological advancements in modern drainage.

With drainage such a critical component of any jobsite plan, it is very important to have a firm understanding of the strengths and weaknesses of both traditional and emerging solutions. This session should be highly relevant to civil engineers, landscape architects and government officials.

# Strategize, Prioritize and Capitalize! Advancing Municipal Green Infrastructure Programs

Rebecca A Minas, IEAust, CPEng | Barton and Loguidice, D.P.C.

## Abstract:

Municipalities across the state are advancing their green infrastructure programs to improve the quality of stormwater discharging to local waterways. This presentation includes a case study which steps through the process undertaken to develop a Green Infrastructure (GI) Capital Improvements Feasibility Plan, assisting a local municipality to develop a strategy to advance GI project readiness, based on a robust prioritization of projects. The strategy was developed with the aid of a planning grant awarded by the New York State Department of Environmental Conservation's (NYSDEC) Hudson River Estuary Program (HREP), with a focus on increased integration of gray and green infrastructure, with an aim to reduce localized flooding and potential storm sewer overflows (SSO) through the implementation of GI, primarily within downtown/infill locations in the Village and more densely developed areas of the Town.

The study includes a review of GI application and existing resources, benefits and SSO mitigation, site suitability screening and prioritization, selection of priority sites and feasibility analysis for the development of two "funding ready" projects. The study also presents implementation strategies that are transferable and adaptable to municipalities across the state, including Land Use Considerations, Maintenance Framework, Existing Municipal Resources and Incentivizing GI on Private Property. Finally, the presentation will include a review of funding opportunities and lessons learned for realizing municipal GI implementation goals, and opportunities associated with public and stakeholder outreach to build broad support for progressing GI implementation.

# **Gowanus Lowlands: A community-based master plan for a network of vibrant public spaces, high-performing green infrastructure, and an accessible, resilient waterfront**

Amy Motzny | Gowanus Canal Conservancy

## **Abstract:**

The future of Gowanus is entering a critical phase with the confluence of several major long-standing efforts: the federally mandated clean-up under the Canal's Superfund status; related cleanups at the state and city levels; and a neighborhood rezoning that will cue both private development and city investment in the public realm. Through the Gowanus Lowlands Master Plan, Gowanus Canal Conservancy seeks to ensure the community has a key role in shaping a watershed that is accessible, active, and clean for all.

The Master Plan builds on years of close collaboration with the community, landowners, elected officials and agency representatives to identify priorities for the future of Gowanus. It envisions a network of parks, public spaces, and green infrastructure centered on the Gowanus Canal and connected to the surrounding watershed. The most important feature of this vision is to ensure that new development does not contribute additional CSO. Currently the Canal receives more than 377 million gallons of Combined Sewage Overflow (CSO) each year. While planned infrastructure through the Superfund process will reduce this annual volume by 65%, the impact of added density throughout the watershed remains unaddressed. To close this gap, GCC is advocating for innovative green and grey infrastructure improvements and the development of an integrated water management plan. By engaging agencies, elected officials, and landowners, we are developing recommendations that could support strategic wa-



tershed planning. This presentation will discuss the development of Gowanus Lowlands and GCC's advocacy for strategic watershed planning in New York City.

## Manufactured Water Quality Solutions and Best Management Practices

Peter M. Hanrahan | *EJ Prescott*

### Abstract:

The EPA Clean Water Act and NYSDEC SPDES Permit require engineers and owners to consider the effects of development and built environments on the pre-existing ecology. Specifically, increases in stormwater runoff must be attenuated or retained on-site, and possibly treated for TSS and/or phosphorus removal, depending on pre-existing site conditions relative to the proposed development. The advent of manufactured treatment devices has provided engineers with a wider variety of solutions to these challenges while also maintaining an economically viable design for their clients. However, navigating and staying up to date on all of the many options available provides a new set of challenges for engineers, as new technologies are continuously be released. This course intends to provide an overview of the current NYSDEC regulations pertaining to new- and re-development projects and the current options available to meet the requirements of these regulations.

The objective of this course is to familiarize engineers with the current regulations and provide an overview of the current technologies available to meet these requirements. We will be discussing the importance of designing to an industry standard and the benefits of providing multiple, in-series methods of stormwater treatment

(“Treatment Train”) in order to improve overall system performance and maintenance cycles while reducing total maintenance costs. We will also cover the difference between flow-based and volume-based designs in water quality systems and how to reduce a project’s budget by analyzing the stormwater management system as a whole. Presentation will be followed by some local project profiles and solutions with time for questions and conversations among the participants

## A decade of improvements and lessons learned on porous asphalt installations in New York State

Kyle E. Thomas, P.E., LEED APBD+C | Natural Systems Engineering, PLLC  
Bruce Barkevich | New York Construction Materials Association, Inc.

### **Abstract:**

Porous asphalt is becoming an increasingly more utilized type of porous pavement and green infrastructure. Properly designed, the technology allows for effective stormwater management and provides a durable and less costly driving surface when compared with other porous pavements. The relative novelty of the technology, however, means that lessons are still being learned about the technology including preparation of the subgrade, acceptable infiltration rates, the use and type of filter fabrics, the profile of the infiltration basin, the mix and thickness of the pavement course(s), susceptibility to frost heave, and of course proper maintenance procedures. Over the past 10+ years, Natural Systems Engineering and the New York Construction Materials Association, respectively, have designed or otherwise been involved with numerous porous asphalt installations in Central New York and across New York State. This presentation will discuss the evolution of porous asphalts as applied in New York State, the current state of the practice and perspectives on data gaps where additional research is perhaps necessary for improvements to the technology, with respect to mix design and the infiltration section.



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