

The Lower Hudson Coalition of Conservation Districts presents
The 17th Annual
Southeast New York
Stormwater Conference & Trade Show



Presentation Abstracts at 8/27/2017

PLENARY I

Lower Hudson Coalition of Conservation Districts Update
Mike Jastremski, CFM — LHCCD

Green Infrastructure Strategic Planning for the Capital District
Martin Daley — Capital District Regional Planning Commission
Bradley D. Grant — Barton & Loguidice
Nadine R. Medina, P.E., CPESC, LEED AP BD+C — Barton & Loguidice
Doug Clark, P.E., LEED AP — Ryan Biggs Clark Davis

Abstract:

Six Capital District communities, working collectively, with support from the Albany and Rensselaer County Sewer Districts, developed a joint Long Term Control Plan (LTCP) that will, through the implementation of more than 53 projects and programs, significantly abate Combined Sewer Overflow discharges in the Hudson River and demonstrably achieve water quality.

The LTCP, jointly funded and implemented by the six "Albany Pool Communities" includes several innovative Green Infrastructure (GI) strategies, including a Green Infrastructure Audit that evaluated the barriers and "gaps" to GI within local codes and land use plans, created model GI codes for the Pool Communities, performed a feasibility assessment for a "Green Infrastructure Credit and Banking System," and completed the development of pool-wide Green Infrastructure Tool Box. Presenters will share background of the joint LTCP and each of the GI strategies and programs developed by the Pool Communities.

Martin Daley: Coming Soon

Bradley D. Grant:

Mr. Grant's primary duties include serving as project manager for Town Designated Engineer (TDE) services for several communities, water and wastewater facilities projects, and general civil projects including project review and representation, utility design, site development, and stormwater management design. He is responsible for planning, engineering, design, and construction management of numerous projects.

Nadine R. Medina:

Ms. Medina has experience as a municipal engineer progressing stormwater, and water and wastewater projects from planning through construction and close-out. Her responsibilities include research, technical writing, data collection, and estimates. Projects have included MS4 program facilitation and preparation of annual reports to comply with DEC's General Permit GP-

02-02; preparation of maps, plans and cost estimates for site development, grant and funding applications, regulatory agency applications, environmental review documents, preparation of stormwater pollution plans, erosion and sediment control plans, and stormwater design calculations, permit applications, contract design drawings and specifications, and contract administration and construction services.

Doug Clark:

Doug is a principal consultant of civil and environmental design projects. His involvement assures that quality standards are maintained from initial contact through project closeout. Doug provides extensive design experience in public and private water systems, public and private wastewater treatment systems, street reconstruction, solid waste landfills and composting, bridges, dams and hydropower, site development and subdivisions, regulatory reviews and permitting, environmental impact studies, planning and consultant to municipalities for review of environmental studies, site plans and subdivisions.

Examining Recent Temperature and Precipitation Trends in Southeast New York and Their Impact on Flood Frequency

David Vallee — NOAA/NWS/Northeast River Forecast Center

Abstract:

Much of Northeastern United States has been experiencing an increasing trend in annual average temperature, annual average precipitation, and the number of heavy rainfall events over the past two decades. During this same time period, the region has experienced an increasing number of moderate to major flood episodes. These episodes have been associated with a variety of storm types and have affected the region at different times of the year. The common thread in each episode was the ability of each storm system to tap a tropical moisture source which resulted in very heavy rainfall on saturated ground. While severe droughts have become far less frequent, our most recent dry spell illustrates the "flashy" nature of its onset and while not nearly as long in duration as some of the famous droughts in the 1930s and 1960s, these "flash droughts" can have significant impact on ground water and agriculture. This presentation will examine these observed climate trends, the atmospheric connections to the increased rainfall intensity of our weather systems, and the impacts it is having on river flood frequency in the region.

David Vallee:

David is the Hydrologist-in-Charge of the National Weather Service's Northeast River Forecast Center. The center provides detailed water resource and life-saving flood forecasting services to National Weather Service Forecast Offices and the hundreds of federal, state and local water resource entities throughout the Northeast and New York. David has worked for the National Weather Service for almost 30 years, serving in a variety of positions including Senior Service Hydrologist at the Taunton Weather Forecast Office from 1993-2000 and as Science and Operations Officer from 2001-2006. David has extensive experience leading hydrometeorological forecast and warning operations and directing weather research and training programs. David has served as the NWS lead investigator with the State University of New York, at Albany, on a multi-year project addressing Land Falling Tropical Cyclones in the Northeastern United States. This has improved the forecasting of heavy precipitation associated with these land falling tropical cyclones as well as developing a better understanding the mechanisms which lead to the recurvature and rapid acceleration of tropical cyclones as they approach the Northeast. David led the initiative to develop a short-range ensemble river forecast system which leverages short range numerical weather prediction guidance to drive a suite of probabilistic river forecasts for the re-

gion. Recently, David has been leading an effort at the Northeast River Forecast Center to examine changes in precipitation and temperature patterns across New England and its impact on flood behavior.

BREAKOUT SESSION I

NYS Community Risk and Resiliency Act Update

Mark Lowery — NYS DEC Office of Climate Change

Abstract:

The purpose of the Community Risk and Resiliency Act (CRRA), enacted in 2014, is to ensure that certain state monies, facility-siting regulations and permits include consideration of sea-level rise, flooding and storm surge. This presentation will describe Department of Environmental Conservation's approach to implementing CRRA through adoption of State Flood Risk Management Guidance and state sea-level rise projections, and their incorporation into DEC programs. Discussion will focus on recommended flood-risk management guidelines. Additional CRRA guidance on the use of natural measures to enhance resiliency and consideration of flooding in public infrastructure smart growth assessments, and model local laws to enhance resiliency will be discussed.

Mark Lowery:

A 29-year veteran of the State Department of Environmental Conservation, Mark is a climate policy analyst in the Office of Climate Change. His areas of responsibility have included leading public outreach for the Regional Greenhouse Gas Initiative, State Sea Level Rise Task Force and state climate action planning. He oversees the Climate Smart Communities program and is currently leading implementation of the Community Risk and Resiliency Act. He serves as the office's lead on climate-change adaptation and municipal support programs, and sits on numerous work groups devoted to these topics. He holds a bachelor's degree from Franklin and Marshall College and a master's degree from the SUNY College of Environmental Science and Forestry.

Climate-Adaptive Design: Using Design to Inspire Climate Adaptive Action and Build Stakeholder Capacity Along the Hudson River

Libby Zemaitis — NYS DEC Hudson River Estuary Program

Abstract:

Since Sandy in 2012, the Hudson River Estuary Program, part of the NYS DEC, has been working closely with leading riverfront communities the help them adapt to flooding and other climate risks. The Climate-Adaptive Design (CAD) program links Cornell students in landscape architecture with flood-risk Hudson Riverfront communities to explore design alternatives for more climate resilient, beautiful and connected waterfront areas. Student designs consider changing conditions from today through year 2080, including the sea-level rise projections adopted by NYS in February 2017. The process engages local stakeholders and connects NYS funding programs, including the Local Waterfront Revitalization, Climate Smart Communities and Brownfield Opportunity Areas. This presentation will introduce the CAD program, highlight a case study from the City of Kingston, including specific designs to adapt their waterfront areas to future flooding and sea-level rise, and conclude with lessons learned on engaging stakeholders and getting to implementation. You can watch our short video on CAD here: <http://tinyurl.com/CSCvideoCAD>

Libby Zemaitis:

Libby is the Climate Outreach Specialist at the Hudson River Estuary Program, NYS Department of Environmental Conservation. Her work focuses around helping communities adapt to climate change, particularly flooding and sea-level rise. Libby is a native of the Hudson Valley where she received her education and has focused her work ever since. She has over 12 years experience managing projects and consulting internationally on cleantech and climate adaptation and mitigation. She holds a M.B.A. in Sustainable Business and M.S. in Climate Science and Policy from Bard College, and a B.A. in Geology from Vassar College.

Town-Scale Road-Stream Crossing Management Planning

Mike Jastremski, CFM — LHCCD

Nicole Laible — Rockland County Soil and Water Conservation District

Abstract:

LHCCD member Soil and Water Conservation Districts and a variety of other partners have been working for the past several years to assess bridges and culverts in the Lower Hudson region to identify flood risks and barriers to fish and wildlife movement. A tremendous amount of useful information has been collected, and partners are now working to share it with appropriate jurisdictions and agencies in ways that are most likely to lead to action.

Many problem structures are on local roads. LHCCD and Rockland County SWCD are piloting an approach for integrating the results of road-stream crossing assessment into local highway infrastructure and natural hazard mitigation planning in the Town of Stony Point. This project has created a town-scale Road-Stream Crossing Management Plan for Stony Point, while developing a planning process and document template that can be replicated in other towns across the region. The Management Plan document will contain supporting information including common problems with road/stream crossings, Best Management Practices, and resources for town highway managers and decision makers; a comprehensive inventory of town-managed structures including ground-verified mapping, photo documentation, physical measurements for each structure, aquatic and terrestrial passability scores and the results of hydraulic capacity modeling where available; a town-scale prioritization of replacement projects developed in cooperation with town staff and officials, NYS DEC Hudson River Estuary Program and other partners; and a conceptual design/implementation strategy for a high-priority replacement project that uses the Stream Simulation Design method created by the US Forest Service.

Mike Jastremski: Coming Soon

Nicole Laible: Coming Soon

Lake George Sustainability Projects: Stormwater Treatment, Porous Asphalt & Advancing the Technologies

Thomas Baird, P.E. — Barton & Loguidice

Abstract:

The NYSDEC Lake George Beach Day Use Area consisted of nearly 5 acres of impervious surfaces that drained directly to the Lake and nearby tributaries. The NYSDEC Day Use Area and Lake George is one of the most popular summer vacation destinations in the northeast United States. The lake is considered an impaired waterbody and is on the NYSDEC 303d list for silt and sedi-

ment from urban runoff and erosion. Sodium and other salt levels have been rising as well. Water generated recreation is the lifeblood of this region economically and the long term vitality of the lake is aggressively pursued by many local and regional environmental groups and the NYSDEC. As the county roadway and the beach facility previously drained directly to the lake, measures to improve the quality of runoff were of utmost importance. Combining the environmental, transportation, operational, and safety improvements, the two projects are a banner cooperative project for the region and a model to other communities.

This presentation will discuss green infrastructure, a very practical and eye opening overview of porous asphalt and the quality control protocols developed, how transportation and pedestrian improvements tied into the GI practices, using what was learned to enhance cultural resource preservation, innovative water borne invasive species protection, and recreational boat facilities. The presentation incorporates these elements and lessons learned using short video clips, over 100 photos, real world comparisons and will provide information that will help to significantly improve the project owners long term sustainability. An overview of the engineering basis of design and science behind modern porous asphalt and concrete pavement design, its environmental benefits, applicability, construction methods, quality control, and expected long term impacts relative to water quality preservation will also be discussed.

Thomas Baird:

Mr. Baird has more than 26 years of experience in transportation and environmental design for various state agencies, municipalities and private industry with his experience in highway design, trail design, transportation and environmental design extending over a wide range of project types. Mr. Baird's experience also includes the design of green infrastructure and stormwater management systems specializing in porous asphalt and materials and has presented at more than 50 conferences and seminars over the last 4 years at the local, state, national, and international levels. He is a Licensed Professional Engineer (PE) in New York and Vermont.

Assessing Green Infrastructure: Kingston Uptown Parking Lots

Emily Vail — NYS Water Resources Institute at Cornell University

Abstract:

Although green infrastructure has become increasingly accepted as a technique to reduce runoff and improve water quality, questions remain about its effectiveness in the field. The ability of green infrastructure practices to manage water quantity in particular has implications for localized and riverine flooding, managing extreme storms, reducing combined sewer overflows, and improving stream ecology/geomorphology that may be harmed by flashy runoff patterns. My research focuses on assessing the effectiveness of two municipal parking lots in Kingston, NY. Between August and October 2016, these parking lots were retrofitted with several green infrastructure practices, including five bioretention areas, 3 sections of pervious pavement, and five dry wells, with a goal of having no runoff leave the site.

This project has three components:

1. A quantitative assessment of runoff reduction in five bioretention areas and five dry wells. On-set HOBO pressure transducers in each of those practices record water level every minute, which creates detailed hydrographs for each practice.
2. A qualitative assessment of design features of the overall site, along with observations on performance and adaptive management over time. This information can help design professionals and municipal staff understand the implications of certain features, especially when green

infrastructure retrofits are installed in urban areas.

3. A review of the history of the Tannery Brook watershed in Kingston. This small urban stream has provided numerous ecosystem services to Kingston over time, and this history can help provide context for today's restoration practices (like green infrastructure or stream daylighting) to improve water quality or flooding.

Emily Vail :

Emily is the Watershed Outreach Specialist for the NYS Department of Environmental Conservation's Hudson River Estuary Program, in collaboration with the New York State Water Resource Institute at Cornell University. For the past 7 years, she has worked with watershed groups, inter-municipal councils, municipalities, and other partners to support community-based watershed planning and conservation. Emily previously worked with the Environment & Energy Program at Cornell Cooperative Extension Dutchess County. She holds a BA in Environmental Studies from Vassar College, and is currently working on her Masters of Science in Natural Resources from Cornell University.

PLENARY II

City of Ithaca Stormwater User Fee Program

Aaron Lavine, Esq. — City of Ithaca

Abstract:

The City of Ithaca is the first municipality in New York state to implement stormwater user fees, a progressive funding mechanism that aligns financial incentives with environmental impact while expanding the funding base for crucial municipal services beyond always-scarce tax revenues. Join Ithaca's City Attorney, Ari Lavine, for a tour of how Ithaca took this leadership role in the state, and how it has fared.

Aaron (Ari) Lavine :

Ari is currently serving in his sixth year as City Attorney for the City of Ithaca. As chief legal advisor to the Mayor, legislature, and departments of the City, Lavine oversees a legal staff handling litigation, legislation, management advising, and policy-making on a broad range of issues. Lavine chaired the City's Stormwater Taskforce, convened by the Mayor to overhaul the financing of costly stormwater infrastructure, and similarly chaired the City's Sidewalk Taskforce, which overhauled the financing, repair and construction of sidewalk citywide. Prior to joining the City, Lavine practiced law in other contexts, predominantly with the Manhattan office of Sullivan & Cromwell LLP. A *magna cum laude* graduate of Cornell Law School, Lavine served as a law clerk to Judge Richard C. Wesley of the U.S. Court of Appeals for the Second Circuit.

Green Infrastructure in NYC Streets

Erin Cuddihy — NYC Department of Transportation

Adriana Kocovic — NYC Department of Environmental Protection

Abstract:

Adriana Kocovic of New York City Department of Environmental Protection and Erin Cuddihy of New York City Department of Transportation will introduce the NYC Green Infrastructure Plan and Program, as well as how numerous City agencies work together to install GI in the right-of-way and within City properties. The various agencies have differing siting restrictions, permit requirements, drawing review processes, and often competing needs. After an introduction to characteristics of the NYC GI program, the presenters will focus specifically on the challenges and prob-

lems that have been encountered while implementing GI in the right-of-way in NYC, and some of the innovative solutions that have been developed to deal with these issues. In addition to learning about our experiences, the professionals in the audience may participate by providing their own insight gained while working on municipal-scale or smaller-scale green infrastructure programs.

Adriana Kocovic :

Adriana currently serves as an Accountable Manager for NYC DEP's Green Infrastructure Program. She has been with DEP for 3 years and has been influential in the expansion of the program, including the development of standard designs, specifications, procedures, and manuals. She also oversees all contracting activities pertaining to the implementation of green infrastructure in the right of way in New York City.

Erin Cuddihy:

Erin Cuddihy is Director of Green Infrastructure at New York City Department of Transportation. She and the DOT Green Infrastructure team look for green infrastructure opportunities within DOT Capital projects and other DOT projects. In addition, she manages the DOT reviews of DEP Green Infrastructure Right-of-Way program drawings. Prior to NYC DOT, Erin designed streets and sidewalks as a Site Civil Engineer.

BREAKOUT SESSION II

Using Trees as an Ultra-Urban Stormwater BMP

AI Key — DeepRoot Green Infrastructure

Abstract:

This course will review academic research, basic applications, notable projects and storm water mitigation potential for urban trees, with a focus on suspended pavement systems. The primary installation discussed will be redevelopment of the Metropolitan Museum of Art in NYC.

Suspended pavement makes two very important functions possible in urban settings: urban tree growth and on-site stormwater management. At Metropolitan Museum of Art, both the city and NYCDPR have committed to large volumes of loamy soils beneath pavement to benefit trees and stormwater. The mitigation value of the site will be evaluated and modeled on research data from North Carolina State University. The integration of green utilities like soil, trees and water into our urban areas substantially improves their design sustainability and helps alleviate some of our most pressing ecological challenges – including air and water quality, rising temperatures, and flooding and erosion from daily rainfall events.

AI Key:

Mr. Key has been involved in the green industry for 20+ years as an owner of DeepRoot Green Infrastructure, LLC. As Vice President he has been instrumental on projects such as the Martin Luther King Memorial in Washington DC, Celebration FL, South Temple Square (Salt Lake City), The LINQ Promenade (Las Vegas, NV), Lincoln Center, Yankee Stadium, and most recently, the Metropolitan Museum of Art (NYC). He has written for the Journal of Arboriculture and Civil Engineering News, and is also a registered CEU provider with Landscape Architect Continuing Education Service or "LACES" (<http://laces.asla.org/>). Together with his partners, he has received one of several patents for their inventions which address trees and storm water management in the urban setting. Mr. Key is a Board Member of Trees NY and has a Masters in Business Administration

from Santa Clara University.

Stream Buffer Protection for Stormwater Management

Beth Roessler — NYSDEC and NYS Water Resources Institute (Cornell University)

Abstract: Coming Soon

Beth Roessler: Coming Soon

Construction of Paved and Unpaved Roads Using Geogrids

William Maier – Tensar

Abstract:

Attendees will learn to incorporate geogrids into roadway design to reduce the requirement for excavation and placed aggregate fill, to construct stiffer more robust paved and unpaved roads that reduce erosion and sediment, and that perform longer with less maintenance upkeep. Geogrid reinforced roadways are longer lasting and less expensive to construct. The surface of a stabilized roadway is much more resistant to seasonal breakdown and precipitation related rutting/surface deterioration, particularly during construction. Roadways that can be constructed with reduced excavation are faster to complete and produce a greatly reduced environmental impact. Geogrid reinforced unpaved roads are effective ways to build low impact access roads in wetland and wooded areas, which can often be removed if necessary. This presentation will include many project profiles and photographs that are relevant to the topic.

William Maier: Coming Soon

Making Sense of Manufactured Treatment Device Madness

Derek Berg — CONTECH Engineered Solutions LLC

Abstract:

Properly vetting innovative stormwater best management practices (BMPs) has long been a source of frustration for all walks of stormwater professionals. Forced to sort through performance data and claims of varying degrees of quality and quantity with limited time and expertise, regulators at all levels of government know all too well how trying the task can be. The task can be particularly difficult when vetting manufactured treatment devices (MTDs) since different providers often have very different views on testing, reporting of results and sizing of said practices. In many cases this has either resulted in limitations on the use of MTDs that stifles future innovation or in some areas relatively unrestricted use that often results in inappropriate sizing and deployment of these solutions.

This presentation will focus on the current state of policy relative to MTDs and other innovative BMPs. An overview of nationally recognized programs and resources will be provided along with a discussion of key policy considerations for the successful deployment of innovative practices.

Derek Berg: Coming Soon