Advancing Resilience:
Pathways to Improve Regional Water Quality in the Face of Climate Change
Environmental engineering and public finance professionals will discuss opportunities to improve the resiliency of local wastewater treatment infrastructure and surface water quality in light of climate change risks and adaption needs. The program will consist of two panel sessions.

**Agenda:**

8:00 – 8:30am  
Registration and Networking

8:30 – 8:45am  
Opening Remarks: Meiyin Wu and Dean Prezant, Passaic River Institute

8:45 – 10:00am  
Panel 1: Funding & Finance Opportunities for Wastewater Infrastructure Improvements

10:00 – 11:15am  
Panel 2: Recent Design & Construction Efforts to Improve Operational Resilience of Local Wastewater Infrastructure

11:15 – 11:30am  
Networking

11:30am – 12:00pm  
Tour of Montclair State’s new Center for Environmental and Life Sciences Building (CELS 120)

**Sponsors:**

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**Location:**

The Conference Center at Montclair State University

1 Normal Avenue  
Montclair, NJ 07043

**Register:**

Member - $75  
Non-Member - $85  
Government/Young Member - $55

**Sponsorship:**

$200  
(logo showcased on program website and signage)

**A breakfast buffet and beverages will be provided**

CE credits will be available for this program
Panel 1: Funding & Finance Opportunities for Wastewater Infrastructure Improvements

Infrastructure Improvements Using Green Bonds
Phillip Ludvigsen, PhD, First Environment, Inc.
Green Bonds are one of the fastest growing areas of fixed asset investing, and several municipalities have elected to use them to fund long-term infrastructure projects. Dr. Ludvigsen will present case studies and an analysis of potential benefits and risks unique to green bonds. He will also discuss good practice in issuing a green bond, including the Green Bond Principles and Climate Bonds Standard.

Funding Opportunities through NJ Environmental Infrastructure Trust (NJETI)
David Zimmer, CFA, New Jersey Environmental Infrastructure Trust
Mr. Zimmer will provide an introduction to the types of projects NJETI funds, as well as the benefits of funding through this vehicle. In addition, he will outline the ways in which NJETI is transitioning, including new aspects of the project review process. He will also provide recent examples of projects supported by the NJETI with State Revolving Fund (SRF) dollars. The administrative and application process to apply for a loan will also be discussed.

Current Status & Availability of Energy Resilience Bank Funding
Fred Fastiggi, CEM, DGCP, Shoreline Energy Advisors
Mr. Fastiggi will provide an overview of the New Jersey Economic Development Authority and Energy Resilience Bank. He will describe the ways these agencies’ strategies have evolved in the past year and their current grant and loan offerings. He will also roadmap the application process, overall requirements, funding limits, and timeframes.

Funding Resilience Using Federal Resources, including the New York State Revolving Fund (SRF) Program
Dan D’Agostino, EIT, U.S. Environmental Protection Agency (EPA), Region 2
The effects of climate change have sounded the alarm for urgent water infrastructure investment. Federal programs help close the gap, but none as successfully as EPA’s Clean Water and Drinking Water SRF programs. Mr. D’Agostino will provide an overview of these and how they integrate resiliency. He will also address EPA’s Water Infrastructure and Resiliency Finance Center, which offers financial expertise to communities financing drinking water, wastewater, and stormwater infrastructure projects.

Panel 2: Recent Design & Construction Efforts to Improve Operational Resilience of Local Wastewater Infrastructure

National and Regional Trends at Treatment Facilities to Improve Resilience in Light of Climate Change
Jane Madden, PE, BCCEE, CDM Smith
Ms. Madden will provide a high level assessment of what resiliency means to wastewater treatment facilities and the forms it can take based on regional impacts, available resources, and agency goals. These include resistance to sea level rise, preparation for extreme weather events, energy independence, etc. She will also address fiscal resiliency and the challenges agencies face accommodating new permitting requirements and future limits. Ms. Madden will provide case studies from local and regional authorities to portray how plants can have a dual role as resource reclamation facilities.

Bergen County Utilities Authority (BCUA) Energy Resiliency Project
Richard Cestone, PE, CHMM, Remington & Vernick
This presentation will provide a detailed case study of resiliency funding hard at work. Mr. Cestone will present how BCUA is establishing energy resiliency through projects such as a combined heat and power (CHP) cogeneration unit which enabled the facility to remain functional throughout Superstorm Sandy. He will also discuss how BCUA’s Energy Master Plan addressed potential energy resiliency projects such as adding fats, oils, and grease to anaerobic digesters to increase biogas generation. The audience will learn of the funding sources used to develop these projects (e.g., Energy Resiliency Bank, etc.).

Evaluating Risk in Setting Design Criteria for Protection from Coastal Flooding
Michael Tumulty, PE, STV
Mr. Tumulty will address the ways climate change and natural disasters influence design of our public infrastructure. He will discuss the need to evaluate risks, including human risk, probability of increased flood levels, and combined probabilities of rainfall and storm surge. With a myriad of storm event information, it is difficult to determine flood levels and other design criteria. Changing predictions for sea level rise make these questions yet more difficult to answer. Mr. Tumulty will address these challenges, providing case studies from the NY Metro area to exemplify how new federal guidance and other tools can help prioritize and guide design.

Overview of NYCDep’s Green Infrastructure Program
Kevin Dahms, EIT, New York City Department of Environmental Protection, Office of Green Infrastructure
Mr. Dahms will outline how the New York City Department of Environmental Protection (DEP) is meeting the 2012 Modified Order on Consent to reduce combined sewer overflows from its combined sewer system and improve the water quality of its surrounding water bodies in accordance with the Clean Water Act. He will provide an overview of DEP’s approach, including developing standardized designs and procedures in conjunction with an “area-wide” approach to design and construct thousands of green infrastructure practices in combined sewer areas throughout New York City.
Phillip Ludvigsen, PhD, First Environment, Inc.  
*Infrastructure Improvements Using Green Bonds*

Dr. Ludvigsen is a climate change and carbon consulting expert with experience in greenhouse gas emission reporting, carbon accounting systems/controls, emission baseline reduction, verification of carbon inventories and offsets, and environmental financing approaches, such as green bonds. Notably, he co-developed environmental, social, and governance due diligence work stream frameworks for some of the largest pension funds in North America. Dr. Ludvigsen also sits on the Climate Bond Standards verification working group and assisted in the development of the Climate Bonds Standard 2.0. He is currently the lead author for the Climate Bond Initiative’s Readiness Assessment Protocol, which will provide guidance for assessing pre-issued Climate Bonds for certification.

David Zimmer, CFA, New Jersey Environmental Infrastructure Trust  
*Funding Opportunities through NJ Environmental Infrastructure Trust*

Since November 2010, David Zimmer has served as Executive Director of NJEIT, a water infrastructure lending authority which partners with the New Jersey Department of Environmental Protection to provide low interest rate loans to local municipalities, utility authorities, and water companies to fund environmental infrastructure projects. He has focused on improving the efficiency and effectiveness of NJEIT by developing a modern, web-based loan management system; overhauling NJEIT’s credit policy; and introducing several new loan programs such as the short-term Construction Loan Program, SAIL disaster relief loan program, and NANO Loan Program. Mr. Zimmer is a Chartered Financial Analyst and holds a Master’s in Business Administration from the University of Notre Dame and a Bachelor’s of Civil Engineering from the University of Dayton.

Fred Fastiggi, CEM, DGCP, Shoreline Energy Advisors  
*Current Status & Availability of Energy Resilience Bank Funding*

Mr. Fastiggi has nearly three decades of experience in the power and energy sectors. As Managing Director of Shoreline Energy Advisors, he works with investor-owned utilities to develop business strategies, as well as with commercial and industrial energy users, lenders, investors, host sites and engineering firms to develop complex energy projects involving distributed generation, renewable energy, district energy, micro grids, and energy storage. He spent 13 years with PSE&G’s regulated and unregulated operations, where he was a founder of its entry into retail energy services post-deregulation. He has advised on and managed dozens of generation transactions encompassing over 5,000 megawatts of traditional and renewable generation capacity in wholesale and retail markets. Mr. Fastiggi is a Certified Energy Manager and Distributed Generation Certified Professional.

Dan D’Agostino, EIT, U.S. Environmental Protection Agency, Region 2  
*Funding Resilience Using Federal Resources, including the New York State Revolving Fund Program*

Mr. D’Agostino is an environmental engineer who started with U.S. EPA Region 2’s SRF Program Section in 2010. His work includes ensuring regulatory compliance, evaluating and reporting financial performance, conducting inspections, advancing national program priorities, and communicating program achievements. He has led and participated in outreach efforts such as working with NGOs to reduce plastic waste in oceans to planning and implementing meetings to promote energy efficient technologies in the water sector. During his time at EPA, he also worked with the Climate Ready Water Utilities program to provide training and assistance to assist water utilities in their efforts to plan for climate change. Mr. D’Agostino received a Master’s degree in Environmental Engineering from Manhattan College.

Jane Madden, PE, BCEE, CDM Smith  
*National and Regional Trends at Treatment Facilities to Improve Resilience in Light of Climate Change*

Ms. Madden is a Senior Vice President at CDM Smith with more than 30 years of experience, including on some of the most challenging wastewater treatment projects in the Northeast. Through this involvement she has gained unparalleled hands-on experience in wastewater engineering, nutrient removal, solids handling, sustainability and planning. Ms. Madden brings this technical excellence and a thorough understanding of regulatory and business issues to her role as national technical strategy leader for water reclamation at CDM Smith. She is a graduate of the University of Vermont and registered Professional Engineer in Massachusetts.

Michael Tumulty, PE, STV  
*Evaluating Risk in Setting Design Criteria for Protection from Coastal Flooding*

Mr. Tumulty is a leader in STV’s Resiliency Group and has been on the front lines of flood resiliency projects, including the feasibility study and design of coastal flood protection for Coney Island Yard, one of the largest railyards in the world. He has provided coastal engineering services—including computer modeling of storm surges routed into harbors and estuaries—for the U.S. Army Corps of Engineers and Federal Emergency Management Agency. He has also conducted investigation and design of shorefront structures in Alaska, New York, New Jersey, Dominican Republic, and Portugal. He received a Master’s in Environmental Engineering from the State University of New York at Stony Brook and Bachelor’s in Civil Engineering (Coastal Engineering focus) from Hofstra University.
Richard Cestone, PE, CHMM, Remington & Vernick
Bergen County Utilities Authority
Energy Resiliency Project

Mr. Cestone has more than 30 years of experience in air emissions compliance and design, energy master planning and energy analysis in the water and wastewater treatment industry and others. For the past 10 years he has provided assistance in developing biogas powered CHP cogeneration facilities at wastewater treatment facilities in New Jersey, including for BCUA. Mr. Cestone is a Senior Project Engineer for Remington & Vernick Engineers and a licensed Professional Engineer in New Jersey, New York, Pennsylvania and Delaware. He received a Master’s in Environmental Science and Bachelor’s in Chemical Engineering from Rutgers University.

Kevin Dahms, EIT, New York City Department of Environmental Protection, Office of Green Infrastructure
Overview of NYCDEP’s Green Infrastructure Program

Mr. Dahms is an Assistant Director in the New York City Department of Environmental Protection’s (DEP’s) Office of Green Infrastructure (OGI) and has worked as an engineer with OGI for two and half years. His primary responsibilities include managing “area-wide” design and construction contracts for right of way green infrastructure practices. He also contributed to the development of DEP’s green infrastructure standards and procedures and has worked closely with Office of Green Infrastructure staff on green infrastructure grant projects. Kevin is an EIT and has a Bachelor’s in Environmental Engineering from Dartmouth College.

Devin DeMarco, CHMM, CPEA, First Environment, Inc.
Moderator

Mr. DeMarco is a Senior Associate and Market Area Director for Federal Programs at First Environment. He has more than 15 years of experience providing diverse environmental consulting services to wastewater treatment and supply authorities in New York and New Jersey, most notably the New York City Department of Environmental Protection and Westchester County Department of Environmental Facilities. He possesses a broad range of experience in environmental compliance and management systems, state and federal NPDES permitting programs, and environmental data management. He received his Master of Science in Environmental Policy from the New Jersey Institute of Technology and his Bachelor of Science in Environmental Science from The University of Scranton. He has served on the Board of Directors for the New Jersey Chapter of the Air & Waste Management Association and the New Jersey Post Chapter of the Society of American Military Engineers.

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