Creating Resilient Infrastructure & Watersheds: Strategies for Planning, Implementation, & Funding

July 12, 2017 • UMASS Lowell Conference Center, Lowell, Massachusetts

2017 SPECIALTY CONFERENCE & WORKSHOP SERIES

PROGRAM AGENDA

8:00 – 8:45 AM — **Continental Breakfast and Registration**

8:45 – 9:00 AM — **Welcome and Opening Remarks**
- NEWEA President James Barsanti, NEWWA President Matthew Pearson, and NE APWA Past President Rick Merson

9:00 – 9:30 AM — **Keynote–Opening Remarks**
- Juliette Rooney-Varga, Director of the UMASS Lowell Climate Change Initiative and Associate Professor of Environmental Biology
- Alicia Hunt, City of Medford, MA

9:30 – 10:00 AM — **Coffee and Networking Break**

10:00 – 11:30 AM — **Panel Discussion**
- Adam Horst, Project Director—Boston Water and Sewer Commission
- Roy Schiff, Water Resources Scientist and Engineer—Milone & MacBroom for VTrans
- Nancy Durfee, Coastal Resources Officer—Scituate, MA
- Patricia Bowie, Coastal Resiliency Specialist—Massachusetts Office of Coastal Zone Management
- Kate Theoharides, Director of Climate and Global Warming Solutions—Massachusetts Executive Office of Energy and Environmental Affairs

11:30 – 12:30 PM — **Lunch**

12:30 – 2:00 PM — **I. Concurrent Technical Sessions (A & B)**

A. Coastal Community Resiliency
Moderators: Brian Creamer & Madeline DeClerk

Coastal Resiliency Challenges and Planning in Fairfield, Connecticut (12:30PM)
- Dana Huff, Tighe & Bond, Inc. and Joseph Michelangelo, Town of Fairfield, CT

Step 0—How Portland, Maine Is Working to Protect a Low-lying Neighborhood (1:00PM)
- David Senus, Woodard & Curran and Troy Moon, City of Portland, ME

Rhode Island South Shore Habitat and Community Resiliency Project—Ninigret Salt Marsh Restoration (1:30PM)
- Nils Wilberg, Fuss & O'Neill, Inc. and Caitlin Chaffee, RI Coastal Resource Management Council

B. Infrastructure Challenges and Opportunities
Moderators: Renee Bourdeau & Phil Forzley

Infrastructure for a Livable Future—Integrating Human and Natural Water Systems (12:30PM)
- Bruce Douglas, Natural Systems Utilities and Julie Wood, Charles River Water Association

Possible vs. Practical: Designing a Seawall for Sea Level Rise in Hampton, NH (1:00PM)
- Tristan Donovan, Tighe & Bond, Inc.

Climate Change Impacts on Stormwater Best Management Practices and Recommended Design Considerations (1:30PM)
- Cristina Kennedy, MA Coastal Zone Management

2:00 – 2:30 PM — **Break**

2:30 – 4:00 PM — **II. Concurrent Technical Sessions (C & D)**

C. Planning for Inland Flooding and Climate Change Impacts
Moderators: Sara Greenberg & Zach Henderson

When *Rolling Easements are Ineffective—Possessory Adaptation Alternatives to Sea Level Rise in Armored Urban Communities*
- Deirdre Hall, Quincy, MA DPW (2:30PM)

Enhancing Flood Resiliency in the Wood-Pawcatuck Watershed through Multi-Benefit, Ecosystem-based Approaches (3:00PM)
- Erik Mas, Fuss & O'Neill

Keeping the Lights On—Energy Facility Flood Mitigation and Resilience Takeaways for Protecting Critical Assets and Infrastructure (3:30PM)
- Jennifer Burke and Gary McAllister, GZA GeoEnvironmental

D. Utility System Upgrades & Operation in a Changing Climate
Moderators: Courtney Eaton & Rick Merson

Preparing for Extreme Weather (2:30PM)
- Ben Smith, NEIWPCC

Increasing the Coastal Resilience of Vulnerable Wastewater Infrastructure on Massachusetts Coast and Islands (3:00PM)
- Anastasia Rudenko, GHD

Resilience: State of Science and Practice
- Igor Linkov and Catherine Fox-Lent, U.S. Army Engineer Research and Development Center (3:30PM)

4:00 PM — **Adjourn**

Over

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TRAINING CONTACT HOURS (TCHs) : Certificates will be awarded for operator recertification for participating states. Certificiates may be used for PEs as well. **If you need TCHs, please sign-up at the end of the day (4:00PM) at the registration desk.** Certificates will be emailed to attendees following the conference.

PROCEEDINGS : In an effort to reduce/reuse/recycle, copies of today's presentations will be posted on the NEWEA website following the event. Attendees will be notified via email when the presentations are available.

PRESENTATION DESCRIPTIONS

A. Coastal Resiliency Challenges and Planning in Fairfield, Connecticut
- Dana Huff, Tighe & Bond, Inc. and Joseph Michelangelo, Town of Fairfield, CT

A. Step 0—How Portland, Maine Is Working to Protect a Low-lying Neighborhood
- David Senus, Woodard & Curran and Troy Moon, City of Portland, ME

This presentation will walk through the decisions Portland has made in planning for climate change in their Bayside neighborhood. It will address the challenges that many communities will face in this process, and how to get started planning for sea level rise in light of what we may or may not know about our own infrastructure.

A. Rhode Island South Shore Habitat and Community Resiliency Project—Ninigret Salt Marsh Restoration
- Nils Wilberg, Fuss & O'Neill, Inc. and Caitlin Chaffee, RI Coastal Resource Mgmt. Council

B. Infrastructure for a Livable Future—Integrating Human and Natural Water Systems
- Bruce Douglas, Natural Systems Utilities and Julie Wood, Charles River Water Association

Resiliency can be achieved using infrastructure that works with or replicates natural water, nutrient and carbon cycling processes; and integrates water and organics management

B. Possible vs. Practical: Designing a Seawall for Sea Level Rise in Hampton, NH
- Tristan Donovan, Tighe & Bond, Inc.

This presentation will go over the possibilities to consider when designing for sea level rise, and then look at the practical solutions. This is considered through a case study of a seawall replacement in Hampton, New Hampshire.

B. Climate Change Impacts on Stormwater Best Management Practices and Recommended Design Considerations
- Cristina Kennedy, MA Coastal Zone Management

This talk will describe how stormwater infrastructure is vulnerable to climate change impacts and will provide recommendations on how to increase resiliency with examples from recently funded projects.

C. When Rolling Easements are Ineffective—Possessory Adaptation Alternatives to Sea Level Rise in Armored Urban Communities
- Deirdre Hall, Quincy, MA DPW

This presentation explores other possible land possessory alternatives allowable under current laws that would support consistent and continued utility services for residents.

C. Enhancing Flood Resiliency in the Wood-Pawcatuck Watershed through Multi-Benefit, Ecosystem-Based Approaches
- Erik Mas, Fuss & O'Neill

The presentation will describe a two-year project to assess the vulnerability of the Wood-Pawcatuck watershed to inland flooding and develop a watershed-based management plan to enhance flood resilience and strengthen natural ecosystems.

C. Keeping the Lights On—Energy Facility Flood Mitigation and Resilience Takeaways for Protecting Critical Assets & Infrastructure
- Jennifer Burke and Gary McAllister, GZA GeoEnvironmental

A discussion on GZA's design work, protection strategies, review typical project constraints, and present a case study on construction methods.

D. Preparing for Extreme Weather
- Ben Smith, NEIWPCC

An overview of NEIWPCC's storm resiliency document and the trainings NEIWPCC has hosted to educate operators about the threats extreme weather events pose.

D. Increasing the Coastal Resilience of Vulnerable Wastewater Infrastructure on Massachusetts Coast and Islands: Two Case Studies
- Anastasia Rudenko, GHD

Pump stations in Wareham, Massachusetts and Oak Bluffs, Massachusetts are located within the newly defined 100 flood zone. Coastal resilience mitigation options for these two communities will be discussed through two case studies.

D. Resilience: State of Science and Practice
- Igor Linkov and Catherine Fox-Lent, U.S. Army Engineer Research and Development Center

This presentation will summarize the current state of resilience science and practice and will discuss how resilience is used in water-related infrastructure and applications.

NEWEA New England Water Environment Association — Working for Water Quality
New England Water Works Association — a Section of the American Water Works Association
New England Chapter APWA American Public Works Association
NEIWPCC New England Interstate Water Pollution Control Commission