

CONCURRENT TECHNICAL SESSION 1 | OCTOBER 16, 2019 11 AM

CONCURRENT SESSION 1
WEDNESDAY, OCTOBER 16, 2019 | 11:00 am

TRACK 1 | STRUCTURAL ELEVATION & FLOODPROOFING

Title: Helical Piles: Design and Application – A Functional Perspective

Presented by:

Moncef Souissi | Cantsink

Abstract:

Over the past 30 years, helical piles have become increasingly common and widely used as a result of their wide range and versatility in foundation application. A helical pile is basically a factory manufactured steel foundation consisting of a central shaft with one or more helical shaped bearing plates (helices) affixed to it. The helical bearing plates serve as the individual bearing elements to resist both compression and tensile forces from the elevated structure. In addition, helical pile capacity can be predicted from the capacity-torque correlation, and therefore can be successfully used a quality assurance during construction.

Capacity-torque correlation has been considered the greatest attribute of helical pile foundation. To this date, the capacity torque ratio used in the helical pile industry is based on the published values in AC 308, an acceptance criterion issued by ICC-ES. These published values are a function of pile shaft diameter only. In this presentation, a new capacity- torque correlation is presented. It is based on the study and analysis of over 800 field load tests. The new formula takes into consideration the effect of shaft size and shape, helix configuration, axial load direction and installation torque. In addition, the presentation will show how helical piles can provide a low-cost alternative to rebuilding in flood plain regions due to their versatility, ability to support structures located near bays or beaches, and where access, vertical and horizontal clearances are limited

Title: Designing a Dry Flood Proofing System – Beyond the Design Flood Elevation
Presented by:

Jeffrey Roushey, PE, CFM | Engineering Manager, ILC Dover, LP
Remy Victoria | Design Engineer, ILC Dover, LP.

Abstract:

Often dry flood proofing systems are specified only by the protection height required per the FIRM and local code requirements. Evidence from past flood events show this is often an insufficient means of specifying flood barriers, especially in an urban environment. In cities, the built environment can vary dramatically within the same block or property highlighting just how difficult it is to use the one size fits all specification of design flood elevation. Other requirements such as limited storage space when not in use, ease and speed of deployment, limits on encroachment into the public right of way when deployed, and realistic debris impact forces and it can be seen how innovative designs of flood barrier systems will be required to protect the growing flood threat in our cities.

This discussion will expand upon the session's previous presentation by Thornton Tomasetti by covering the effect of design considerations besides just the design flood elevation. Debris impact, water velocity, deployment time, storage location and space, maintenance, and installation constraints of barrier systems must be considered in order to provide the protection critical facilities require, especially in an urban environment. The utility vaults at a medical research facility in a major healthcare campus in New York City will be used as a case study to highlight the influence on the design of a flood barrier system, when more than the DFE is considered.

Title: Designing a Dry Flood Proofing System – Beyond the Design Flood Elevation
Presented by:

Aditya Bhagath, PE | Senior Project Director, Thornton Tomasetti Inc.

Abstract:

Extreme weather events are increasing in intensity and frequency leading to concerted efforts by regulatory authorities on mitigating the impacts on people, property and businesses. As designers and engineers tasked with improving the resilience of infrastructure in the urban environment, we rely on guidance from codes like ASCE24 and ASCE7 to help inform mitigation measure design. Current building codes specify a flood elevation to which a structure is to be designed, but this does not ensure the long-term resilience of a structure given rising sea levels. Many other aspects are left open to interpretation.

This presentation delves into consideration of site-specific flood parameters, projected sea level rise, floating debris impact and applying performance based criteria for flood mitigation components to ensure a resilient flood mitigation strategy. This discussion will use a flood mitigation project case study focused on protection of utility vaults in a medical research facility, which is part of a major medical campus in New York City. The protection of these vaults is a critical component of the flood mitigation strategy for the wider campus and the study explores how it was assessed in terms of risk due to flooding, site-specific flood loading and the process of choosing a flood barrier that met the design constraints. Following this discussion will be a presentation by ILC Dover with an in depth look at how these design considerations affect the development of flood barriers with a focus on an innovative flood barrier system, custom designed to protect the utility vaults.

TRACK 2 | COMMUNITY RATING SYSTEM (CRS)

Title: NJ Counties CRS Assistance Programs

Presented by:

Joe Barris, PP | Assistant Director Monmouth County Division of Planning

Abstract:

Because there are no “unincorporated lands” in New Jersey, counties are not eligible to participate in the NFIP’s CRS program. However, being non eligible does not equate to being non involved. Monmouth, Ocean, and Morris Counties have all initiated their own CRS municipal assistance programs to help towns either enter into or advance within the national CRS program. Although each county takes a similar approach in providing assistance, each faces distinct physical, technical, and political challenges in offering this type of service.

This session will explore how each county program works and the types of support they provide CRS communities in their jurisdiction.

Title: Creating Effective Public Outreach Materials

Presented by:

Susanna Pho, CFM | Forerunner

Abstract:

Participation in the Community Rating System (CRS) is an increasingly popular option for communities facing high flood insurance costs. While many CRS coordinators find

value in customizing their outreach campaigns, producing marketing assets can be a challenge. Beyond criteria fulfillment, CRS outreach represents a crucial interaction point between your municipality and community members. Well designed materials with clear messages can have a huge effect on engagement with your floodplain management programs.

In this session we'll discuss defining your target audience, messaging, effective graphic designs, and accessibility. The lessons-learned will be applied to materials that communities commonly create for 300 series activities.

Title: NFIP CRS and What NJ Communities Need to Know

Presented by:

Marianne Luhrs, AICP | FEMA Region 2

Abstract:

No community can have a 100% perfect record when it comes to NFIP enforcement, can they? Answer: No. So what are the expectations FEMA has when conducting a Community Assistance Visit (CAV) specifically to assess a community's readiness for joining the Community Rating System (CRS)? What does FEMA regard as a "substantive program deficiency" and what can a community do to correct them? What is a "substantive violation", and, again, what can a community do to remedy them? What does it mean to resolve compliance matters "to the maximum extent practicable"? As the national CRS program evolves – with a sharper focus on NFIP compliance – what can communities – both those already in CRS and those aspiring to be – do to improve their odds of getting in – or staying in – CRS?

TRACK 3 | FLOOD & STORM HAZARD MITIGATION

Title: Resilient Infrastructure

Presented by:

Thomas R. Decker, P.E., M.S.C.E. | Director – Water Resources, Jacobs Engineering Group Inc.

Abstract:

Resiliency is the ability to anticipate, mitigate against and recover quickly from the effects of climatic and extreme weather events. Impacts to our Infrastructure is of utmost importance. The presentation will provide an overview of the current trends and direction on Climate Change/Resiliency. A sampling of design guidelines, infrastructure

project examples, and strategies for future planning and design projects will be presented.

Title: Development of a New Decision Support Tool for Multi-Hazard Resilience Assessment of Coastal Structures

Presented by:

Ross Nazari, PhD | Coastal Resiliency Group, Rowan University

Abstract:

Coastal and inland flooding has been a problematic occurrence, specifically over the past century. Global warming has caused an 8 inch sea level rise since 1990, which made the coastal flood zone wider, deeper and more damaging. Additionally, riverine flooding is extremely damaging to the coastal communities' substructure and economy as well which causes river banks to overflow, inundating low-lying areas. Low-lying coastal areas at severe risk for flood hazard, sea level rise, land depletion, economic loss, property damage, destroy habitat destruction, and also threaten human health and safety which are the main study area of this work. A decision making framework is being built to help mitigate the impacts of the environmental and economical dangers of storm surges, sea level rise, flashfloods and inland flooding. With vigorous research and the use of innovative hydrologic modeling, this tool can be utilized to help with resiliency planning for coastal communities. This will allow the individuals living in a coastal community to understand the details of climatic hazards in their area and risks associated to their communities. This tool also suggest the best solution for the problem each community faces. The results and benefits from the simulation and modeling techniques, allow coastal communities to choose the most appropriate method for building a long lasting and sustainable resilience plan in the future.

Title: The Future of Mitigation

Presented by:

Camille Graham | Floodproofing.com

Abstract:

This course provides insight into the importance of proper foundation flood vents and compliance with Building Codes and FEMA standards and how they can effectively prevent major damage to buildings due to flooding. The course will review applicable codes pertaining to foundation flood venting, including a complete review of FEMA's new Technical Bulletin TB-1.

After the course, participants will have a thorough understanding of the difference between non-engineered openings and engineered openings and the important role they play in designing a sustainable structure.

Learning Objectives:

- Describe floods, floodplains, and the potential hazards to buildings.
- Explain the differences between wet and dry floodproofing techniques and acceptable applications.
- Describe the role of flood openings in flood events to ensure resilient structures.
- Analyze the role of building compliance in securing reduced flood insurance rates and what mitigation.

TRACK 4 | HABITAT RESTORATION

Title: Floodplain Restoration on NJ Blue Acres Property

Presented by:

Christine Pollack | Princeton Hydro

Abstract:

Princeton Hydro, in collaboration with the NJDEP Blue Acres Program, City of Linden, Rutgers University, Phillips 66, National Fish and Wildlife Foundation, and Enviroscapes is undertaking one of the first ecological restoration projects within Blue Acres acquired properties, which are located in Union County's City of Linden Tremley Point neighborhood. This project increases storm resiliency by reducing flooding and stormwater runoff by improving the ecological and floodplain function within the former residential properties acquired by the NJDEP Blue Acres Program.

This presentation will highlight the green infrastructure techniques employed including restoration of native coastal forest and meadow. Key points will be identified that discuss permissible restoration activities and the process for restoring Blue Acres acquired properties as well.

Title: The Creation of a Living Shoreline – 30 Hubbard Park, Red Bank, NJ

Presented by:

Kelly Klein | Princeton Hydro

Abstract:

Recent storms along the coast of New Jersey, sea level rise and nuisance flooding are causing increased erosion of New Jersey's shoreline and elimination of shoreline vegetation and marshes. This has manifested itself in the form of destruction of the existing bulkhead structure on the 30 Hubbard Park property located in the Borough of Red Bank, Monmouth County, New Jersey. As such, the Navesink River shoreline in the area of the site is rapidly eroding and in need of repair.

Many of the properties in the area have opted for the traditional "hard" shoreline stabilization. While these structures have been successful in stabilizing the shoreline, they have a number of undesirable impacts on the shoreline and critical inter-tidal and nearshore habitats. 30 Hubbard Park, LLC proposes a living shoreline in order to reduce erosion by mimicking features of the natural environment through the incorporation of natural and ecologically sound practices.

The current design for the living shoreline at 30 Hubbard Park creates a 20-foot-wide strip of marsh along the Navesink River that smoothly transitions into a restored upland area extending an additional 30 feet landward. A variety of native vegetation is proposed to be planted. A marsh sill is proposed as the primary structural measure to protect the restored marsh and will serve to dissipate wave energy caused by wind and wake.

This project will serve as a demonstration project for public education as well as serve as a model project for private homeowners looking to establish living shorelines.

Title: Evaluating Design Criteria for Channel Improvements

Presented by:

Julie E. Greenfield | HDR

Abstract:

The United States Department of Housing and Urban Development awarded the New Jersey Department of Environmental Protection funds to develop a pilot flood risk reduction project in the Meadowlands, NJ. Subsequently, HDR joined the team to assist in conducting a Feasibility Study and supporting the development of an Environmental Impact Statement. The development, refinement and screening of drainage improvement alternatives in the five-township, 5,500-acre project area was followed by the selection of a preferred alternative. This alternative includes the design and construction of channel improvements to the East Riser Ditch (ERD). These improvements consist of channel excavation, associated re-vegetation, and bridge/culvert replacements along a 4,200-ft reach. The ERD is highly urbanized and the channel banks are constricted laterally by parking lots and industrial buildings. In

addition to a slight longitudinal slope, there is limited vegetation and steep slopes creating potential bank stability issues.

This presentation summarizes the methods used to advance design of the channel by establishing specific evaluation criteria, which were tied to the project purpose and need, and fell into the following categories: flood risk reduction, built human environment, natural environment; construction, operation and maintenance; benefits and cost. Specific constraints include easements and real estate, O&M access, overcut requirements, buildings (clearance, possible stabilization needs), structure upgrades, constructability considerations, channel bank stability, hydraulic capacity, and vegetation selection. This presentation will focus on the iterative process developed to advance design while maintaining pre-established hydraulic conveyance capacity improvements, maximizing ecological enhancements, and coordinating technical input from an interdisciplinary team of subject matter experts.

TRACK 5 | TRAINING

Title: HEC RAS Training

Presented by:

Michael Horst, PE, PhD | The College of New Jersey

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Hours

Monday—Friday: 9:00AM–5:00PM

ANNUAL CONFERENCE

This year's event also includes a pre-conference training session on floodplain management concepts and principles, as well as ethics training for Professional Engineers and Certified Floodplain Managers.

SEARCH

Search for:

CONCURRENT SESSION 2
WEDNESDAY, OCTOBER 16, 2019 | 2:00 pm

TRACK 1 | FLOOD HAZARD ID AND MAPPING

Title: Navigating Through Difficult Terrains – A Stream Safety Survey

Presented by:

Joseph Messina, PLS | The Nader Group

Wassim Nader, PE | Nader Group

Abstract:

This session will describe the development and use of the Index Point System (IPMS) and Surveying in unpredictable stream corridors can be unforgiving, especially in remote and hard to reach areas. Safety is paramount. Analyzing the mission in hand and preparing for it is essential to its ultimate success. Survey crews are required to attend a safety course specifically geared to familiar and non familiar streams and rivers. They have to study access in and out of streams and realize emergency routes. They have to investigate remote cellular access and ensure all equipment is in complete operating order. this equipment may include but not limited to life safety vests, ropes, boats, motors, ores, waders, and all traditional survey equipment. The team has to review aerial photography to analyze presence of rapids and falls and mark their location on their maps to avoid surprises that can lead to injury. A minimum of two people are required for any stream survey mission. sometimes three people. Never send one person alone.

The Nader Group performs these missions on a regular basis and have developed a procedure to ensure that safety is achieved to its maximum potential in every condition. We are happy to engage surveyors with any questions to assist them in understanding the potential risks associated with stream surveys and avoid dangerous and difficult situations. There are never any guarantees, however, preparation is the best guarantee.

Title: The Art of Resilience – Including Cultural Resources in Coastal Resilience Plans

Presented by:

Joe Barris, PP | Assistant Director Monmouth County Planning Division

Abstract:

When towns or regions prepare mitigation plans, they often overlook the importance arts, historic, and cultural (AHC) resources have in recovery efforts. In many ways, these assets are a definitive source of community expression and pride. Their presence or function after a disruptive event often represents a return to “normalcy”. Providing continuity of culture is necessary to the long-term health of a community. Identifying AHC resources at risk from coastal flood hazards, and working with the agencies and organizations responsible for their stewardship, can provide hope and optimism to residents during times of fear and frustration.

In this session, you will learn how the Monmouth County (NJ) Division of Planning incrementally incorporated AHC resources into their planning and policy documents. You will also hear how local organizations and towns leveraged these resources in the post superstorm Sandy environment to reduce conflict, improve resilience, and better prepare for the next inevitable disruption.

Title: New York and New Jersey Coastal Re-study Update

Presented by:

Elena Drei-Horgan, PhD | AECOM

Christopher J. Bender, PhD, PE, D.CE | Taylor Engineering

Abstract:

Accurate coastal flooding risk assessment results not only from the use of best available data but, especially, from the application of methodologies and approaches in the field of coastal modeling that are based on the most up-to-date and advanced modeling techniques. The ongoing coastal restudy for the New York City and New Jersey shorelines is an example of a Flood Insurance Study where updated FEMA methodologies and best practices are coupled with the state-of-the-art science in order to model storm surge and wave propagation, the behavior of tropical and extratropical cyclones, and compute nearshore hazards that are reflective of specific coastal morphologies ranging from gently-sloping beaches, along barrier islands, to heavily developed metropolitan armored shoreline.

This presentation will focus on describing the advanced methodologies implemented in the ongoing New York and New Jersey Coastal Restudy, highlighting differences between the current study and the 2009 FEMA Region II Coastal Surge Project to include unique techniques and innovation adopted such as GIS desktop analyses, tide/surge interaction, and JMP-OS/EST statistical approaches. The talk will also present innovative outreach solutions that include earlier engagement of local stakeholders, from the very beginning of the study, and their participation in the study's review. An overall project update will also be provided as part of this presentation.

TRACK 2 | THE FUTURE OF FLOOD INSURANCE

Title: How Communities Can Prepare for Risk Rating 2.0

Presented by:

Tom Little | Risk Reduction Plus

Abstract:

Tom will use his experience with Cities that have embraced higher standards which will offer them a glide path to RR 2.0 changes. This includes explanations on how the lines between an "X" zone and an "A" will start to blur as true risk and models are incorporated into the NFIP rating program. If you are a Floodplain Manager who is worried about rates and risk you can't miss Toms talk.

Title: Private Flood Insurance – Do's and Don'ts

Presented by:

Tyler Ardron | Risk Reduction Plus

Abstract:

Tyler's agency sells multiple private flood insurance products along with NFIP, and will discuss the pros, cons, and unknowns of an ever-changing flood insurance market so you can offer guidance to your residents. As the NFIP flood insurance rates increase private carriers are offering competitive pricing with comparable products, but are these products really comparable. Will these products pay a claim? What if there is a huge storm and they go bankrupt. Will you be dropped without a chance to purchase a reasonably priced NFIP Policy? How will RR2.0 affect a private policy? Bring your questions and be prepared for an open forum discussion.

Title: CAT Flood Modeling – Showcasing the True Risk

Presented by:

Holly Widen, PhD | RMS

Abstract:

Both private and now the NFIP RR 2.0 use flood models to predict risk. RMS, the leading global risk modeling and analytics firm, announces the release of its US Inland Flood High Definition (HD) model. In this presentation Holly will explain how flooding is the most frequent and widespread peril in the U.S. and has historically been difficult to model and insure due to its relative complexity and the lack of quality data available. RMS has leveraged extensive expertise in flood modeling to bring to market an innovative solution that solves for these existing market challenges. The new RMS US Inland Flood HD Model accounts for all types of inland floods, including those induced by both tropical cyclone and non-tropical cyclone rainfall, and is coupled with the RMS North Atlantic Storm Surge Model to provide a comprehensive view of inland flood risk alongside hurricane-driven coastal flood and wind risk. The market demand for flood insurance is growing, but to date the industry has lacked a tool to enable a rigorous and comprehensive treatment of all sources of flood risk. We are excited that our investment of over 60 man-years of development effort have culminated in a tool that meets this broad market requirement." RMS HD Inland Flood Model also takes the challenge of data availability head on, with first-of-its-kind capabilities to account for key drivers of flood risk, including employing intelligent modeling techniques to account for key structural attributes such as first floor height and basement characteristics. The model also includes the first market-wide solution to account for the presence of all defenses that help mitigate flood risk, even in the absence of this information being available in public datasets.

TRACK 3 | OUTREACH AND EDUCATION

Title: Land Use Enforcement for Floodplain Managers

Presented by:

Pete Keledy | NJDEP Coastal & Land Use Enforcement

Abstract:

Discussion will provide an overview of regulated areas and activities covered by the Flood Hazard Area Control Act, and its overlap with freshwater wetlands and CAFRA regulations. We will also provide a brief overview of GeoWeb (an important tool in determining the likelihood of a proposed activity being within a regulated area), the procedure for requesting an investigation by CLUE through the DEP Hotline, an overview of common violations and how they are addressed through the enforcement process, and how to achieve compliance with enforcement documents through either restoration and/or the land use permitting process. Real-world examples will be provided throughout the presentation to demonstrate what violations, restoration, and compliance looks like.

Title: FEMA Riverine Non-Regulatory Products for New Jersey

Presented by:

George Ibrahim | NJDEP

Abstract:

A workshop to build local capacity for implementing mitigation actions using the newly released FEMA riverine non-regulatory products. Communities can now use new tools to know their flood risks, create strategies to reduce flood risks and search for funding opportunities.

Title: The Earth is a Planet Water

Presented by:

Benny Tafoya | City of Ocean City

Abstract:

Water is not a resource, water is life and needs to be protected.

About 71 percent of the Earth's surface is water-covered, and the oceans hold about 96.5 percent of all Earth's water. Water also exists in the air as water vapor, in rivers and lakes, in icecaps and glaciers, in the ground as soil moisture and in aquifers, and even in you and your dog.

All of the water that has ever existed is still here but it needs to be treated with the reverence it deserves, without water there is no us.

TRACK 4 | STORMWATER UTILITIES

Title: When it Rains, it Pours – Clean Stormwater and Flood Reduction Act

Presented by:

Eleni Giannikopoulos | Suburban Consulting

Abstract:

The Clean Stormwater and Flood Reduction Act provides municipalities, counties, utilities and authorities the tool to proactively address and/or manage flooding, improve existing stormwater conveyance infrastructure and address adverse impacts of inadequate stormwater management due to budgetary limitations.

This panel will discuss the history of stormwater management in the State of New Jersey and creation of this bill, dive into the Municipal Finance benefits and implications when forming a Stormwater Utility and the technical considerations when assigning fair and equitable approximation of the proportionate contribution of stormwater runoff from any property served by the utility. While this Bill is not a mandatory requirement, the presentation will outline the regulatory requirements included in the Bill for the formation of a stormwater utility and present guidelines utilized in the formation of over 1,500 stormwater utilities across the country over the past 30 years.

Title: Advantages and Limitations of a Stormwater Utility: Example from Dayton, Ohio

Presented by:

Scott Homes, PE | Mott MacDonald

Abstract:

This presentation will explore the transition to and over twenty years of experience that the City of Dayton, Ohio has in operating a stormwater utility (SWU). Reviewing and understanding Dayton's SWU experience can provide New Jersey stormwater managers insight regarding the advantages and limitations of a SWU. Before 1997, Dayton's stormwater infrastructure was managed by the City's Department of Public Works (PW) and now Dayton's SWU is managed by the City's Department of Water (Water). The transition from PW to Water required four plus years to complete and some of the decisions made during the transition included responsible City Department, billing methodology, and initial operating budgets. Early SWU advantages included steady source of funds for operations, focus on stormwater management, and opportunities to educate citizens. Early SWU challenges included dual role (regulatory compliance vs city development), changing operational tasks (street sweeping), billing exemptions, limited funds for capital improvements, and operating budget adjustments. Some of the lessons from the first 20 years include maintenance of stormwater infrastructure (gray or green) is critical to making it last, citizens expect service because they are paying a SWU bill, and ensure your NPDES permit clearly defines the responsibilities of your SWU (challenge the permit if there are items that your SWU is not doing because typical MS4 definitions include roads, curbs/gutters and roadside ditches – will these continue to be maintained by PW or become the responsibility of the SWU). Dayton's SWU is still

maturing. Their last rate study looked at giving credits for optional green infrastructure and charging users for non-stormwater connections.

Title: Is a Stormwater Utility in my Future?

Presented by:

Elizabeth Treadway | Wood Plc

Abstract:

With recent legislative action, the potential to establish dedicated funding for stormwater/ flood mitigation is now a reality. Stormwater user fees have been used throughout the US for over 45 years. This session will focus on the success and failures with a specific focus on process steps for implementation. Topics covered will include governance, public engagement, program development, financial modeling, data management and billing procedures. There is no need to reinvent the wheel – learn how to take the first step to success for funding all-things stormwater.

TRACK 5 | TRAINING

Title: HEC HMS Training

Presented by:

Michael Horst, PE, PhD | The College of New Jersey

CONCURRENT TECHNICAL SESSION 3 | OCTOBER 17, 2019 11:00 AM

CONCURRENT SESSION 3

THURSDAY, OCTOBER 17, 2019 | 11:00 am

TRACK 1 | STORMWATER MANAGEMENT

Title: Stormwater Resilience – Anywhere, Anytime

Presented by:

Manny Montero | Xylem Inc

Abstract:

Knowledge and decision making is critical during storm events when the weather conditions can change rapidly. Cloud based SCADA systems are ideal for this. The Cloud based SCADA can remotely communicate with the local devices to understand the condition and operation of a stormwater pump station. No matter where your personnel are or when they want to view the condition of your utility, they can do so by using any mobile device.

Two-way communication is required for these remotely located stormwater pump stations so that quick decisions can be made. A Cloud-based SCADA solution can collect data from all of the remote devices, but to pair a Cloud-based SCADA solution with an Intelligent Pump Station Manager, which collects more reliable data, allows the utility to be proactive towards stormwater management.

The result is the implementation of a predictive monitoring and control system. The predictive program can analyze the collected data and inform the utility staff about what is going to happen. This is crucial when operating equipment during a heavy storm, because it saves staff from having to travel during harsh storms. By increasing it to the next step of predictive programming you are also actively preventing stormwater overflows and minimizing wear on the equipment to increase asset longevity.

The discussion will be to educate the audience on why implementing a cloud-based SCADA solution is the best fit for stormwater resiliency. We will do so by providing some examples of how this has been implemented previously in New Jersey.

Title: Improved Stormwater Management Through Wastewater Pumping Best Practices

Presented by:

Ryan Booth | PSI Process

Abstract:

We propose to increase storm water pump station resiliency, reliability and redundancy incorporating the best practices of wastewater pumping stations into the design of storm water pump stations and other storm control assets. We have had several stations that have adopted additional features ranging from formed intake and screening to remote monitoring and controls to the end users' benefit.

Title: County Route 530 South, Pemberton
Road Improvement Project, Phase 2

Presented by:

Lori Wade, PE | Michael Baker

Abstract:

Burlington County started construction on County Route 530, South Pemberton Road, in December 2017. The project was a top priority for Burlington County due to the high crash rate history including 600 traffic accidents during a recent eight-year period with 17 fatalities. Michael Baker provided preliminary and final design services for the project which included roadway design, drainage design and analysis, hydraulic analysis for culvert replacement, MPT design and extensive stormwater management design and environmental permitting. Stormwater management facilities include thirteen (13) bioretention swales, 6 (six) detention/infiltration basins, and several water quality treatment devices designed in accordance with NJDEP and NJ Pinelands Commission regulations. Hazardous material investigation was also necessitated by the presence of gas stations and underground and above ground storage tanks (UST/AST), as well as the performance of asbestos surveys due to building demolition. Additionally, roadway development impacts to adjacent farmlands required extensive coordination

efforts with NJDEP, Burlington County, and the Pinelands Commission for the acquisition of farmland protected under Pinelands regulations.

TRACK 2 | FLOOD MODELING

Title: 1D or 2D Modeling...Let's Determine!

Presented by:

Rebecca Starosta, PE | AECOM

Abstract:

FEMA Flood Insurance Study (FIS) Regulatory guidance is predominantly focused on one-dimensional (1D) models, leaving some interpretation when it comes to flood studies developed using fully two-dimensional (2D) or hybrid 1D/2D methods. Recent advancements in 2D modeling techniques and the release of HEC-RAS Version 5 have resulted in more frequent use of 2D modeling, ultimately leading to questions on the development of standard regulatory products (such as FIS profiles, floodways etc.), and how to best manage 2D floodplains while taking advantage of the regulatory and non-regulatory information available. This presentation will help the audience make decisions when selecting approaches for projects on whether 1D or 2D is more appropriate. This will also discuss what is necessary to incorporate 2D results into regulatory products, and how to use results, the regulatory products.

Title: CAT Flood Modeling – Showcasing the True Risk

Presented by:

Holly Widen, PhD | RMS

Abstract:

Both private and now the NFIP RR 2.0 use flood models to predict risk. [RMS](#), the leading global risk modeling and analytics firm, announces the release of its [US Inland Flood High Definition \(HD\) model](#). In this presentation Holly will explain how flooding is the most frequent and widespread peril in the U.S. and has historically been difficult to model and insure due to its relative complexity and the lack of quality data available. RMS has leveraged extensive expertise in flood modeling to bring to market an innovative solution that solves for these existing market challenges. The new RMS US Inland Flood HD Model accounts for all types of inland floods, including those induced by both tropical cyclone and non-tropical cyclone rainfall, and is coupled with the [RMS North Atlantic Storm Surge Model](#) to provide a comprehensive view of inland flood risk alongside hurricane-driven coastal flood and wind risk. The market demand for flood insurance is growing, but to date the industry has lacked a tool to enable a rigorous and comprehensive treatment of all sources of flood risk. We are excited that our investment of over 60 man-years of development effort have culminated in a tool that meets this broad market requirement.” RMS HD Inland Flood Model also takes the challenge of data availability head on, with first-of-its-kind capabilities to account for key drivers of flood risk, including employing intelligent modeling techniques to account for key structural attributes such as first floor height and basement characteristics. The model also includes the first market-wide solution to account for the presence of all

defenses that help mitigate flood risk, even in the absence of this information being available in public datasets.

TRACK 3 | HAZARD MITIGATION GRANT APPLICATION GUIDANCE

Title: FEMA Benefit-Cost Analysis Tips and “Tricks

Presented by:

Jon Cubuju | NJOEM

Abstract:

Learn from experts at NJOEM on how to improve and better support your Benefit-Cost Analysis (BCA) for HMA. As a major component of a subgrantee’s application, the BCA can make or break your proposed project. This session will complement your basic understanding of the FEMA BCA module.

Title: Putting your best foot forward – Hazard Mitigation Assistance Applications

Presented by:

Chris Testa | NJOEM

Jillian Stokley | NJOEM

Abstract:

The New Jersey Office of Emergency Management (NJOEM) receives grant applications with a range of quality. Learn from the reviewers how to improve your application. The presenters from NJOEM will use examples from “prized” applications and from those that didn’t measure up.

Moderated by:

Brad Waugh | State Hazard Mitigation Officer

NJOEM

TRACK 4 | FLOOD HAZARD IDENTIFICATION & MITIGATION

Title: Mapping the Future of FEMA Products in New Jersey

Presented by:

Shudipto Rahman | FEMA Region 2

Abstract:

Find out the status of FEMA products and innovation in this information session. You will get an update on the ongoing flood hazard analysis and mapping on New Jersey’s coast, and generally, the future state of flood hazard mapping (including future conditions) for all zones. Learn about the latest in all hazard risk assessments. Big changes are coming flood insurance pricing – you’ll be educated early on Risk Rating 2.0. Come with questions.

Title: Promoting Advanced Collaborations in Support of Communities Managing Substantial Damage Under the NFIP

Presented by:

Scott Duell | FEMA Region 2

Abstract:

Join FEMA Region II's Floodplain Management and Insurance Branch Chief to examine your community's important change in assessing impacts to structures post disaster. You can better prepare during "blue sky" days to be effective – this session will teach you how, including what resources are available. Learn how to estimate the repair costs and defend your substantial damage determination. Stay ahead of the storm by collaborating with the Region, NJDEP and fellow communities in preparing your game plan.

Title: Sector Approaches to Mitigation

Presented by:

Jack Heide | FEMA Region 2

Abstract:

Are you incorporating risk and mitigation actions for all sectors of your community? Jack Heide, Community Planner with FEMA Region II, will examine best practices and examples of incorporating different sectors into mitigation projects and planning. Broaden your connectivity when updating your multi-jurisdictional Hazard Mitigation Plan and in developing mitigation projects. Use the planning process to engage diverse stakeholders. County OEM coordinators and planning departments, municipalities and consultants are encouraged to attend this session.

TRACK 5 | NEW JERSEY'S FLOOD HAZARD AREA CONTROL ACT RULES

Presented by:

Vince Mazzei, PE | NJDEP, Division of Land Use Regulation