



ASHE
Southern New Jersey

Spring 2017 Newsletter

Upcoming Events

Thursday, April 20
A Joint Meeting of ASHE
North Central & Southern
New Jersey
**Project of the Year
Awards**
at the Cranbury Inn
21 S. Main Street, Cranbury, NJ
08512

INSIDE THIS ISSUE:

Sponsor Spotlight — Michael Baker International, Inc. Services: Pavement Design, Management and Technology	2,3
Sponsor Spotlight — Arora and Associates, PC: Route 54 Route 322 over Cape May Point Branch	4,5
February 15, 2017 Meeting Highlight — Environmental Monitoring and Archaeological Monitoring During Construction	6
March 20, 2017 Meeting Highlight — Field Trip to NJDOT Rt. 168 Newton Lake Dam	7
Rowan University Student Chapter Update	8,9
Sponsorships	10
Executive Board Nominations	11
Upcoming Events	12
Thank you to our sponsors!	13

Message from the President

Carrie Strehle, ASHE SNJ President 2015-2017

Happy Spring! 2017 is moving along quickly and I hope you have all been able to enjoy ASHE SNJ's recent programs and events.

Just a reminder that we are looking for volunteers for the 2017-2018 Board. We are in the need of committee members for Programs, Membership, and PR so please reach out to me if interested.

We kicked off January with a brand new event - the joint Scholarship Fundraiser with ASHE Delaware Valley. We raised a little over \$400, which was split between the two Sections. The event was held at Winterfest in Philadelphia and we hope to make this an annual tradition. Even though we had to change the date due to cold and rainy weather, everyone in attendance seemed to enjoy themselves in the relaxed atmosphere.

Our loyal member, Richard Grubb, from RGA, Inc., stole the spotlight during February as the "Anxious Contractor". Richard and Amy Greene, President of Amy S. Greene Environmental Consultants, Inc., along with members of their staff presented on "Environmental and Archaeological Monitoring during Construction". The format was a mock pre-construction meeting and it was both entertaining and informative.

As I mentioned in our previous newsletter, ASHE SNJ is committed to the success of our ASHE Rowan Section. We held a joint Field Trip/Presentation on the NJDOT - Route 168 Newton Lake Dam Project with the Rowan Students on March 20th. We had 8 students in attendance and received an update regarding recent and upcoming activities from their President, Johnathan Grande, and Vice President, Kayleigh McDevitt.

During the March meeting, ASHE SNJ recognized a few individuals for their dedication and support leading to the establishment of the ASHE Rowan Section: ASHE Rowan's founding President, Godfrey Joyner; Rowan University Faculty Advisor, Parth Bhavsar; and ASHE SNJ member, Richard Grubb.

For those of you who are not already aware, we have posted the resumes of the ASHE Rowan students on our website. This is a benefit to the members of ASHE SNJ so I hope you take advantage of the amazing talent that is available for full-time employment and/or summer internships.

Thank you for your continued support and participation! I hope to see you at the upcoming Project of the Year Awards program next month!

Carrie Strehle
President, ASHE SNJ

Spotlight on Michael Baker International, Inc. Services: Pavement Design, Management and Technology

Contact: Magdy M. Hagag, P.E. (609) 807-9528

Michael Baker International presents a full range of pavement design, management and technology services for state, regional, county, and local transportation agencies nationwide.

Understanding that pavement is the largest asset of such agencies, Michael Baker maintains a team of qualified pavement engineers to assist these agencies in selecting the most economical and practical approaches to pavement preservation, rehabilitation and management. Michael Baker's team of professionals maintains a broad array of technical capabilities including:

Pavement Management Systems (PMS)

- Michael Baker utilizes state-of-the-art digital video imaging, automated pavement distress identification and high speed profiling for pavement inventory data collection, as well as advanced PMS software for project prioritization and budget analysis.
- A PMS network level evaluation includes a condition assessment, budget analysis, preventative maintenance, and rehabilitations.
- Pavement data is geo-referenced and GIS compatible.

Laser Crack Measurement System (LCMS) and Video

Imaging

- Automated crack detection including "Type and Severity" classification.
- Pavement Condition Index (PCI) per ASTM D6433.
- Longitudinal Profiling (IRI).
- Transverse Profiling (Rutting).
- Macrotexture and Raveling Index.
- Grade and Cross-Slope.
- Captures 2D and 3D images as well as video images of the roadways.

Pavement Design / Plans / Specifications

- Project Level Pavement Condition Survey, Rehabilitation Recommendation, Final Design, Plans, Instruction, LCCA, Estimates & Specification

Ground Penetrating Radar (GPR)

- Pavement Thickness
- Bridge Deck Deterioration
- Void Detection
- Utility Detection

Falling Weight Deflectometer (FWD)

- Pavement & Subgrade Strength
- Remaining Service Life Analysis

Pavement Smoothness (IRI Measurement)

- Ride Quality and Acceptance

Digital Video Pavement Condition Survey

- Distress Identification
- Pavement Condition Index (PCI)
- Repair Locations

Pavement / Asset Management Systems

- Network Level Pavement Condition Survey, Budget Estimating & Optimization
- Asset Inventory (Signs, Utilities, Pavement Markings, etc.)
- HPMS Data Collection and Reporting

Pavement Failure Forensic Analysis

- Material & Non-Destructive Testing

High Speed Profiling

- Provides high-speed roadway profiling services to measure the roadway smoothness in terms of International Roughness Index (IRI), longitudinal slope, cross slope, and rutting (NCAT Certified).
- All data is geo-referenced and GIS compatible.
- Michael Baker developed a pavement smoothness pay adjustment method for NJDOT to award contractors for smooth final pavement surface or to enforce penalties for poor workmanship.

Ground Penetrating Radar (GPR)

- GPR is an efficient technology for continuous measurement of the pavement thickness at highway speed without interrupting normal traffic patterns.
- Capable of detecting voids below pavement.
- Used to effectively determine the extent of deterioration of bridge decks with or without an asphalt overlay.

Falling Weight Deflectometer (FWD)

- FWD testing for pavement evaluation and determining the structural strength of the pavement and subgrade, pavement layers moduli, concrete joint performance, voids under joints, and remaining service life. FWD testing is highly recommended by AASHTO for pavement evaluation and design recommendations.

Life Cycle Cost Analysis (LCCA)

- LCCA including user delay costs to identify the most economical pavement rehabilitation alternative for each project, and supports long term budgeting and planning.



Spotlight on Arora and Associates, PC: Route 54 Route 322 over Cape May Point Branch Folsom Borough, Atlantic County

By Michael Wright, PE, PP, PMP, Vice President



The Route 54 Route 322 over Cape May Point Branch project exemplifies how social, economic and sustainable development considerations that add to a project's complexity can be successfully and economically addressed during design and construction. NJDOT's goals were to reconstruct three highway bridges and upgrade the NJ Route 54 and US Route 322 interchange with new pavement, signing and striping, lighting, drainage, stormwater management facilities and utility relocations.

The project is in the heart of NJ Pinelands National Reserve and surrounded by forest, wetlands, vernal pools, flood plains, and potentially ten threatened or endangered species and their habitats. Two of the bridges span the former Atlantic City Railroad and are contributing elements to the historic district, which is still an active railroad corridor, owned by NJ Transit and operated by Conrail. US Route 322 is a coastal evacuation route, a major arterial to Atlantic City and experiences high traffic volumes in the summer, the prime construction season. Failure to address the deteriorated bridges would have resulted in either expensive maintenance to keep them in service, or their eventual closure and disruption of traffic. These constraints introduced complexity into the project because the design had to address competing and sometimes conflicting objectives of stakeholders such as:

- Environmental permitting rules and regulations of NJDEP and Pinelands Commission
- Historic preservation rules and regulation of the State Historic Preservation Office
- Design and operational requirements of Conrail and NJ Transit
- The contractor's constructability needs
- NJDOT's traffic operation requirements for seasonal shore traffic
- Maintenance of the coastal evacuation route
- Needs of local residents and the Borough of Folsom

ARORA laid out retaining walls parallel to the roadway to reduce the project footprint and avoid embankment encroaching into and destroying wetlands, forest and habitat. During construction, T&E species were monitored and protected to ensure that they were not harmed. Stormwater impacts were mitigated by constructing two on-site stormwater recharge basins within the previously disturbed areas in the interchange infields. Encroachment into the floodplain of Hospitality Creek was avoided. Impacts to stream buffers were mitigated by restoration of stream buffer on an off-site parcel on US Route 322. Freshwater Wetlands GP #10b and 11, and Flood Hazard Area permit and a Pineland Development Approval were obtained for the project from NJDEP and the Pinelands Commission.

Two of the bridges (NJ Route 54 over NJ Transit and Hospitality Creek, and US Route 322 over Cape May Branch) span the former Atlantic City Railroad and are contributing elements to the historic district. Rehabilitation of the bridges was eliminated as an option due to their deteriorated condition. Maintaining compatibility with the historic district was required. Working with NJDOT SME's and the State Historic Preservation Office, ARORA incorporated special architectural parapets and fences into the bridge design to acknowledge their historic setting. All work in the active railroad corridor was coordinated with Conrail and NJ Transit to ensure safety of the trains and construction workers.



US Route 322 is a coastal evacuation route and experiences high traffic volumes in the summer, the prime construction season. Traffic delays must be avoided during construction. Working with NJDOT's Southern Traffic Operations Unit, ARORA optimized the allowable lane closing times using



actual traffic count data to avoid delays while giving the contractor adequate time to accomplish his work. Allowable lane closings and staging schemes were agreed with NJDOT during design. Coordination continued during construction to address MPT needs of additional construction operations.

The project design and construction were completed on time, within budget and with no claims. The innovative techniques to avoid and mitigate impacts to the historic district and

environmentally sensitive areas while maintaining seasonal traffic during construction demonstrate that social, economic and sustainable development considerations can be economically addressed when designing and constructing large complex engineering projects. This encourages public confidence that the engineering profession is aware and will successfully and economically address these important social considerations.



February 15, 2017 Meeting Highlight— *Environmental Monitoring and Archaeological Monitoring During Construction*

Presentation by:

Amy Greene, President, Amy S. Greene Environmental Consultants
Craig Metzgar, Senior Project Manager, Amy S. Greene Environmental Consultants
Harry Stano, Project Manager, Amy S. Greene Environmental Consultants
Paul McEachen, Director of Archaeological Services, RGA Inc.
Richard Grubb, Director of Archaeological Services, RGA Inc.



THANK YOU TO OUR MEETING SPONSORS,

AMY S. GREENE ENVIRONMENTAL CONSULTANTS, RGA,, AND WISS!

March 20, 2017 Meeting Highlight— Joint Meeting with ASHE SNJ and the Rowan Student Chapter Field Trip and Dinner Presentation on the NJDOT Rt. 168 Newton Lake Dam



Presentation by:

Lee Adams, PE, CME - Hardesty & Hanover, LLC
Eric J. Ditchey, PE - McCormick Taylor, Inc.
Mehdi Khazamipour - NJDOT Resident Engineer



THANK YOU TO OUR MEETING SPONSORS,
PROMATECH, INC. AND HARDESTY & HANOVER!

ASHE SNJ WELCOMES THE
FOUNDING MEMBERS OF THE



AMERICAN SOCIETY OF HIGHWAY ENGINEERS SOUTHERN NEW JERSEY
STUDENT CHAPTER

FOUNDING EXECUTIVE BOARD:

Godfrey Joyner, President
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Austin Gould, 2nd Vice President
Plaban Das, Secretary
Dylan Livingston, Treasurer
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Jeff Dib, Student Representative

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Abraham Oyewole
Harshdutta Pandya
Matthew Paugh
Eric Pluckhorn
William Reichard
Samuel Rosfjord
Nicholas Schlageter
Michael Simeone
Kevin Takacs
Mark Vail
Zachariah Wenig



AN UPDATE FROM ROWAN'S STUDENT PRESIDENT

Recent Events

We held a day of service in the Borough of Folsom to clean up several streets.

The student chapter welcomed guest speakers Thomas P. Di Chiara and Brad Summerville at one of our general meetings, where they went over the recent ASCE Infrastructure Grade Report, and the impact of Hurricane Sandy on infrastructure.

The student chapter co-hosted a joint meeting with ASHE SNJ for the NJ Route 168 Newton Lake Dam Rehabilitation Project field trip.

A guest speaker is planned for every meeting until the end of the Spring semester.

Resumes

Many of us are still looking for jobs, check out our resumes at
www.southernnj.ashe.pro/Resumes

Upcoming Events

We have two service projects coming up! One of them is the Seneca Robotics Competition, where some of our members are volunteering. And the other is a volleyball tournament, where all proceeds go to the Habitat for Humanity.

Student Chapter Goal

Our plan for the future, since the club is so new, is to do as many fun projects as we can so that we can raise the number of members. With more members, we will have more opportunities as a club, which means more networking as future engineers.

The Rowan University Student Chapter is always looking for guest speakers. If you are interested in volunteering, please contact Richard Grubb at rgrubb@rgaincorporated.com

SPONSORSHIPS ARE NOW AVAILABLE

ASHE SNJ has three levels of Annual Sponsorships:

PLATINUM LEVEL - \$1 ,000

- Web-posting of Classified ads on www.southernnj.ashe.pro
- Company Logo & Featured Sponsor on main page of www.southernnj.ashe.pro and on Sponsorships page
- Opportunity to display a project photograph with recognition of sponsor firm on www.southernnj.ashe.pro
- Full page feature article on your firm (topic of your choice) in the ASHE-SNJ Newsletter (article provided by the sponsor firm)
- Special Recognition at ASHE SNJ Regular and Special Events on presentation screen
- Two Annual ASHE SNJ Memberships (Include member names in the comment section below)

GOLD LEVEL - \$750

- Web-posting of Classified ads on www.southernnj.ashe.pro
- Company Logo and link on www.southernnj.ashe.pro Sponsorships page
- Opportunity to display a project photograph with recognition of sponsor firm on www.southernnj.ashe.pro
- Recognition display at each ASHE SNJ Event
- One Annual ASHE SNJ Membership (Include member name in the comment section below)

SILVER LEVEL - \$500

- Web-posting of Classified ads on www.southernnj.ashe.pro
- Company name and link on www.southernnj.ashe.pro Sponsorships page
- Opportunity to display a project photograph with recognition of sponsor firm on www.southernnj.ashe.pro
- Recognition display at each ASHE SNJ Event

MONTHLY DINNER SPONSORSHIP

DINNER SPONSORSHIP - \$250

- 5 minute presentation to all attendees to promote your firm or product
- Recognition display on slideshow and each dinner table
- Opportunity to display and distribute materials/pamphlets about your firm or product before, during, and after the meeting
- A seat at the head table with guest speakers for the evening (includes cost of one registration and dinner)

BECOME ACTIVE IN YOUR ASHE SOUTH JERSEY CHAPTER!

**CONTACT YOUR BOARD MEMBERS
TODAY
TO SEE HOW YOU CAN GET *INVOLVED!***

We are currently taking nominations for the Executive Board for the 2017-2018 term. If you are interested, please contact Carrie Strehle at cstrehle@promatechinc.com

UPCOMING EVENTS SAVE THE DATE!!

Thursday, April 20

**ASHE North Central and Southern New Jersey
Present**

PROJECT OF THE YEAR AWARDS

At the Cranbury Inn
21 S. Main Street, Cranbury, NJ 08512

Wednesday, May 3

**NJDOT Route 46 Over Hackensack River
Bridge Rehabilitation at the Hamilton Manor**
At the Hamilton Manor



June 14-18, 2017

ASHE National Conference

Sheraton Times Square Hotel

www.2017conference.ashe.pro

Stay tuned for the June meeting date and the Annual Golf Outing to be announced shortly!



Thank you to our sponsors for the 2016-2017 year!

PLATINUM LEVEL



SILVER LEVEL

HDR

JMT

NJ Asphalt Pavement Association

Promatech

Remington & Vernick Engineers

RGA

Urban Engineers