



ASHE

Scanner

Winter 2015

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I-579 Crosstown Boulevard Bridge Preservation Project

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New Pedestrian Bridge, Tampa, FL

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After Superstorm Sandy

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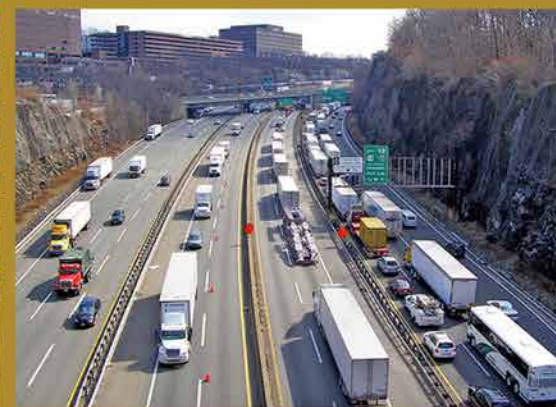
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Provide a forum for members and partners of the highway industry to promote a safe, efficient and sustainable highway system through education, innovation and fellowship.

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Samir Mody, PE

ASHE National President 2014-2015



New Directions

As I approach the halfway mark of my tenure as the ASHE National President, I want to thank the membership and my colleagues from the Executive, National, Region and Section Boards for their hospitality, support and fellowship during my travels over the past five months. It has been such a humbling experience to meet so many wonderful highway industry professionals who are dedicated and committed to making ASHE such a great organization.

I have found the time spent at each venue to be extremely rewarding from the standpoint of listening to the challenges each Section/Region is facing within their organization, while sharing some best practices that may be of use for greater success. A brief snapshot of my travels over the past quarter includes:

ASHE – ASCE Fall Conference: September 11

- The Phoenix-Sonoran Section members celebrated five-year anniversary as ASHE's first Section (#40 overall) in the Rocky Mountain Region.
- The Section has tripled its membership, despite not being "right around the corner" from its neighbors, but they have seamlessly assimilated themselves into the ASHE family.

Southern NJ – North Central NJ Joint Meeting: September 17

- These two Sections based in New Jersey, and formerly part of the "Region 6" organization, have produced two past National Presidents—Rodney Pello and James Charles—during their history.
- Both Sections are approaching milestones in the next couple of years: North Central's 25th anniversary in 2015 and Southern NJ's 30th anniversary in 2016.
- Congratulations to Rodney Pello, PE, for attaining a Life Member status from the North Central Section.

New York Metro Section Dinner: September 30

- The Section celebrated its 10-year anniversary September 8. Originally chartered with 80 members, the current roster includes 133 members (a 66% increase) since 2004.
- They are poised to host our National Conference in 2017 in New York City.

Past President's Banquet: October 18

- Gail and I enjoyed this event when the Past Section Presidents were honored for their contribution and commitment to the growth and sustainability of the Pittsburgh Section.
- The Pittsburgh Section was chartered in 1966 with a long legacy of success and contributions to ASHE. From 1973 to the present, five National Presidents were elected from Pittsburgh, including James Weaver, Sr., G. Michael Tiani, John DeRoss, Albert Kozel, and Kevin Duris.
- Five National Conferences were hosted at Pittsburgh in 1969, 1974, 1984, 1995 and 2005. They will host the upcoming 2016 Conference when the Section will celebrate its 50th anniversary.
- Pittsburgh, the largest Section in the organization, has won countless attendance awards at the National Conference.

Ohio Transportation Engineering Conference (OTEC): October 28

- OTEC celebrated its 68th anniversary, and the event was attended by 3,300 professionals.
- The Great Lakes Region (formerly known as Region 1) has nominated many individuals who have led this organization, including:
 - Three past National Presidents—Roland Nesslinger, David Jones and Frank O'Hare
 - Bob Hochevar—former Region 1 President and current National First Vice President
 - National Directors Carolyn Duffy and Tom Bolte

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View of bridge from shore, ped bridge on left

Bridging Enhanced Quality of Life with Improved Public Safety in Florida

ASHE Tampa Bay Section

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I-579 Crosstown Boulevard Bridge Project Completed in

by Cheryl Moon-Sirianni, PE, PennDOT District 11-0, and John Tricini, PE, PLS, Michael

I-579, known as Crosstown Boulevard, connects to most of the attractions in and around downtown Pittsburgh, PA, and to the main thoroughfares that lead to the city's neighborhoods and suburbs. In 2010, the Pennsylvania Department of Transportation (PennDOT), District 11-0, launched a \$37.8 million preservation program along the I-579 corridor to extend the life of 25 bridges and a 100-year-old retaining wall that had deteriorated over time from age. With the assistance of Michael Baker International (Baker), SAI Consulting Engineers (SAI), Infrastructure Engineers, KTA-Tator, Inc., Monaloh Basin Engineers, M.A. Beech Corporation and Trumbull Corporation (Trumbull), the project was designed and constructed in less than four years.

Project Overview

I-579 begins at the interchange with the Boulevard of the Allies and ends at the interchange with I-279 and SR 28, providing access to the city's hockey arena, convention center, central business district and other attractions on the city's North Shore. I-579 also provides a downtown connection to I-376 that leads to the Pittsburgh International Airport. Approximately 72,000 vehicles use I-579 daily.

The project consisted of the in-depth inspection of and repairs to 25 bridges of varying ages and the rehabilitation of a 30,000-square-foot, 100-year-old retaining wall that extends from I-579 to the top of a bluff occupied by the Duquesne University campus. PennDOT let the construction contracts for the repairs to the bridges in two

phases, and Trumbull was the successful low bidder for both phases. The first phase of the project included repairs to nine structures at the southern end of I-579. The second included the remaining 16 structures and the retaining wall.

Bridge repairs included painting of the steel superstructure, deck repairs and replacements, structural steel repairs, concrete substructure repairs, bearing replacements, replacement of expansion dams, drainage system repairs and retrofitting pin-and-hanger assemblies. Retaining wall repairs included hydromolition, shotcrete and waterproof coating.

A secondary benefit of the project was the widening of the sidewalk on the Centre Avenue Bridge. The City plans improvements around CONSOL Energy Center along Centre Avenue.



Preservation Record Time

Baker International, **ASHE North East Penn Section**

This prompted the decision to widen the five-foot sidewalk on the south side of the bridge to eight feet. The City project will then widen the remaining sidewalk on Centre Avenue to match the sidewalk on the bridge, helping to safely mitigate heavy pedestrian traffic during events at CONSOL.

Project Challenges

The design phases of the project were on an accelerated schedule. The design team completed the preliminary design for the rehabilitation of the 25 bridges within three months and the final design of the first phase within six months of preliminary design approval. A project of this magnitude usually requires a year for preliminary design and 18 months for final design.

Except for the main spans of the Veterans Bridge over the Allegheny River and the three overpass bridges near CONSOL, construction could only be performed using short-term closures during nights and weekends due to the heavy

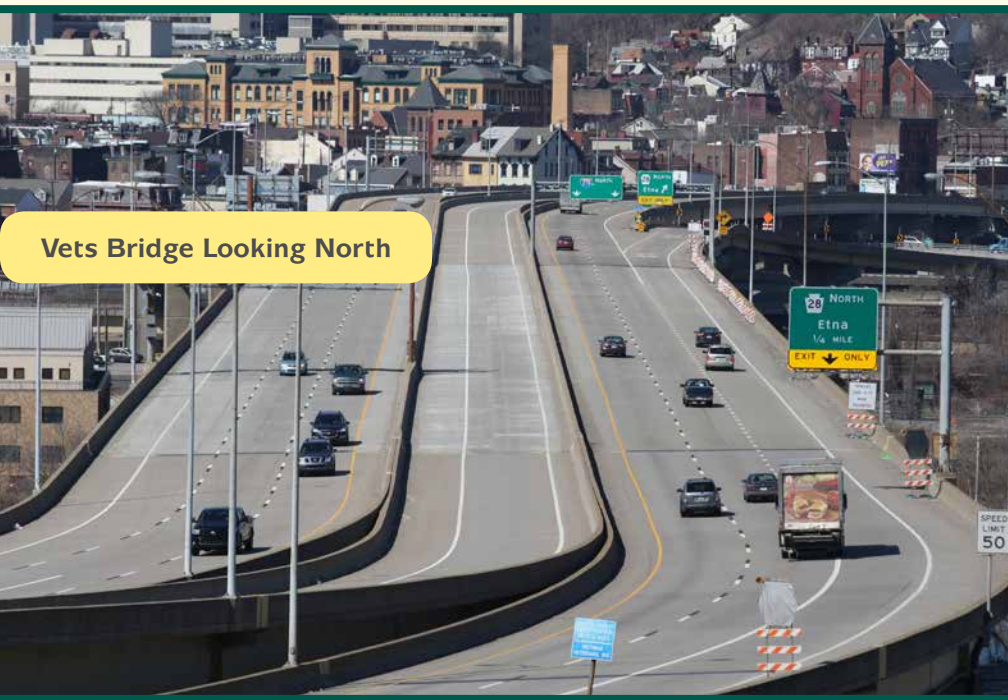


Bridge No. 10 (Webster Ave) Demolition



Finished Bridge No.11 (Center Ave)

Vets Bridge Looking North



traffic volumes. The construction phasing plans had to be coordinated so that closure or construction on one bridge did not create traffic delays on adjacent roadways and to ensure that enough hours were available for construction crews to complete the project. Construction phasing and traffic control also had to be coordinated with multiple stakeholders, including City officials, police and emergency services; the county transit authority; and extensively with the Pittsburgh Penguins (hockey team) and its events promoters. To avoid traffic tie-ups following the nearly 150 events held at CONSOL each year, off-duty uniformed police officers were enlisted to move traffic quickly out of the parking lots surrounding the arena. The Penguins also posted PennDOT's press releases regarding traffic disruptions on their website during construction.

Three of the structures that were rehabilitated either pass through or are directly adjacent to a downtown parking garage, and the support columns for the structures actually pass down through several levels of the parking garage. Close coordination with the owner of the parking facility was required during design and construction to provide adequate room for the contractor to complete the bridge repairs while minimizing impacts to the parking facility and its customers.

Engineering Innovation and Complexity

Some of the older steel girder bridges on I-579 included antiquated pin-and-hanger assemblies, which had been used to construct the bridges when the space between two bridge piers was too wide to be spanned by a single set of girders. Because these pin-and-hanger assemblies are fracture-critical, and because recent advances in bridge design allow for construction of longer spans, pin-and-hanger assemblies are no longer used on new bridges. The rehabilitation design included the retrofit of the pin-and-hanger assemblies with new stainless steel pins and high-strength steel hangers to reinforce the girder plate connections and somewhat reduce the maintenance requirements for these fracture-critical bridge elements.

The use of hydrodemolition, latex-modified concrete and crack sealer for bridge deck repairs proved to be more cost-effective than the application of a rapid-set latex overlay. Crews used hydrodemolition to scarify the top quarter-inch of the deck surface, then paved the bridge decks with latex-modified concrete and applied crack sealer.

The 1,050-foot-long, eight-lane Veterans Bridge, constructed in 1988, is the newest Allegheny River crossing and the most heavily traveled of the

I-579 bridges. Construction crews had to work in limited areas of the bridge, surrounded by traffic, to complete the repairs. The Federal Highway Administration requested the use of latex-modified concrete, instead of a fast-curing overlay. The use of the slower-curing overlay required the closure of one lane in each direction at a time. Construction crews were able to limit the single-lane closures to 15 days in each direction.

The protective slope facing wall that covers the Duquesne University bluff serves as a gateway to the eastern part of the city's central business district from the suburbs. Constructed in 1926, the 30,000-square-foot retaining wall reinforces the bluff and prevents rocks and mud from sliding down onto the roadway. An in-depth inspection of the wall revealed severe deterioration, due to the wall's age and exposure to weather, corroded rock anchors, severe spalling and clogged drains. Due to the size of the retaining wall and the depth of the repairs, PennDOT decided to use hydrodemolition and shotcrete. Crews used hydrodemolition to remove the wall's facade, exposing the drainage structures beneath for repair. They installed a wire mesh, and then sprayed 15,000 cubic feet of shotcrete, followed by a surface treatment, onto the mesh. Workers used hand tools to finish the surface, replicating the original 1926 design of the facade.

The project team successfully completed the design and construction of extensive repairs to 25 bridges and a large retaining wall within four years, despite the challenges posed by working in a constrained urban area in heavy traffic and the need to coordinate with multiple stakeholders. Careful construction phasing and contractor and stakeholder coordination made it possible to expedite the completion of the project with minimal disruptions or delays to the traveling public. 🇺🇸



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ASHE Members on the Move!



New York City Office Welcomes Elmoraly as Civil Department Manager

Mahmoud Elmoraly, PE, has joined Gannett Fleming as the Manager of the Civil Department in the New York City office. With 15 years of experience in all phases of project development and

construction, Elmoraly guides clients through the planning, design, permitting, coordination and construction of civil/site and highway projects. He works closely with Gannett Fleming practice and market sector leaders to plan and implement cost-effective and environmentally conscious development projects.

Elmoraly will leverage his industry experience to lead the growth and operations of the Civil Department. Throughout his career he has helped to plan, control and monitor the execution of multimillion dollar infrastructure projects, including assignments with The Port Authority of New York & New Jersey (PANYNJ), New York City Department of Design and Construction and the New York City Department of Transportation. With Gannett Fleming, Elmoraly is serving as project manager for a design-build toll system upgrade for PANYNJ.

Through these and other experiences, Elmoraly gained a broad range of knowledge in flood mitigation, asset hardening and protection, RFP development, roadway design, utility design, site construction management, planning and scheduling, cost estimating and claims avoidance and resolution.

"Mahmoud focuses on quality service, client satisfaction and delivering projects that are managed efficiently and effectively," said Giuseppe (Joe) Tulumello, AIA, LEED® Green Associate, business unit leader of Gannett Fleming's New York City office. "His outstanding technical and organizational skills provide a strong foundation to grow our civil site client base in New York City and throughout the Northeast."

Elmoraly is a registered professional engineer in New York and holds a Bachelor of Science in Civil Engineering from Alexandria University, Alexandria, Egypt. He also earned a Master of Civil Engineering from City College/The City University of New York (CUNY) and a Master of Business Administration from Baruch College/CUNY. He is a member of the American Society of Civil Engineers and the American Society of Highway Engineering. He resides in Syosset, Long Island, New York.

Gannett Fleming is a global infrastructure firm that provides planning, design, technology and construction management services for a diverse range of markets and disciplines. Founded in 1915, Gannett Fleming had \$313 million in revenues in 2013, and has 2,000 employees in more than 60 offices around the world. It is proud to be ISO 9001:2008 Certified.



Dewberry Appoints New Assistant Transportation Department Manager

Dewberry, a privately held professional services firm, has hired **Andrew Schueller, PE, CFM**, as the Assistant Transportation Department Manager in the firm's New York City office. He

will be responsible for managing transportation projects, mentoring junior staff and overseeing business opportunities in the New York area for both private- and public-sector clients.

Schueller has more than 26 years of engineering and construction experience related to transportation and infrastructure. His portfolio includes civil and roadway facility design, project management, civil design and business development in the areas of stormwater management, water quality design and utility and infrastructure design on highways, roadways, bridges, airports, rail and transit facilities, waterfront structures and land development projects. Prior to joining Dewberry, he served as transportation manager at TY Lin International, working on large-scale infrastructure and transportation projects with clients such as the Port Authority of New York and New Jersey, the New York State Department of Transportation and the New Jersey Turnpike Authority.

Schueller received both his Bachelor's and Master's degrees in Civil Engineering from the New Jersey Institute of Technology. He is a member of the American Society of Civil Engineers, the American Society of Highway Engineers and the New Jersey Association for Floodplain Management.

About Dewberry

Established in 1956, Dewberry is headquartered in Fairfax, VA, with more than 40 locations and 2,000+ professionals nationwide. To learn more, visit www.dewberry.com.



Genesis Grows Transportation Engineering Services in Florida

Genesis has announced the expansion of its transportation engineering practice in Florida. President and CEO Mark T. Llewellyn, Sr., PE, announced that as part of this expansion, **Andy Núñez, PE**, has come on board as Vice President of Transportation Services in the firm's Tampa office. Llewellyn said, "Andy will lead the growth of the transportation engineering practice in central and southwest Florida."

Núñez brings more than 39 years of experience in transportation, traffic and ITS consulting, program management and business development to Genesis. He was formerly co-founder and president of Florida-based TEI Engineers & Planners, where he served as Project Principal, Manager or Engineer on a wide variety of transportation projects. Previously, he had served in lead project management roles in all Florida Department of Transportation districts around the state. Núñez earned Bachelor's and Master of Science degrees in Civil/Transportation Engineering from Georgia Institute of Technology. He is licensed to practice in Florida and is a resident of St. Petersburg, Florida.

Bruce Kaschyk, AICP, Genesis' Tampa Division Manager, added, "We have provided transportation engineering in Florida since 1987. Expansion of our transportation services in this region, where we have an established, full-service team of engineers, planners, landscape architects and CE & I professionals, is the right move at the right time. We now offer our central and southwest Florida clients the complete range of Genesis services. Andy brings outstanding capabilities to Genesis that will complement our statewide teams."

Genesis is a Florida-based, multidiscipline firm offering engineering, planning, landscape architecture, urban design, GIS and construction engineering and inspection (CE&I) services for clients in the private and public sectors. It operates from offices in Tampa, Tallahassee, Jacksonville, Ocala, Pensacola and Crestview, Florida. More information about Genesis and Genesis CE&I is available at www.genesisgroup.com and www.genesiscei.com.



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On Track All the Way to Completion: The Loyalsock Creek Bridge Replacement



by Jason Shura, PE, and Brian Wiser, PE, Keller Engineers, Inc., Hollidaysburg, PA;
John Conrad, PE, Railroad Consulting Engineer, Tyrone, PA, **ASHE Altoona Section**

The Loyalsock Creek Railroad Bridge, located in the borough of Montoursville and Loyalsock Township, Lycoming County, PA, is a vital link for the Lycoming Valley Railroad (LVRR) between Williamsport and Muncy. The bridge carries nearly 18,000 railcars per year. The original six-span steel bridge, constructed in 1927, was substantially damaged by floodwaters from Tropical Storm Lee in September 2011. The bridge was immediately taken out of service, and a design of the replacement bridge was initiated. Despite loss of the bridge, rail service was maintained to all existing clients on this rail line through a second, but more distant, connection to the Norfolk Southern Railroad. The additional costs for this detour were borne by the bridge owner, SEDA-COG Joint Rail Authority (JRA), and its private operator, the LVRR.

The LVRR is one of six shortline railroads owned by JRA and operated by the North Shore Railroad Company, making it one of the nation's earliest examples of a public-private partnership. The JRA was established in 1983 to preserve rail lines targeted for abandonment in central Pennsylvania in order to continue and expand rail service to private industries that relied on these services. Today, the authority manages over 200 miles of track in eight counties and provides service to more than 80 customers employing more than 8,000 people.

The LVRR is an integral part of this system, serving over 40 industries in Lycoming and Clinton counties. The LVRR is an important supply line for companies pursuing natural gas exploration in Pennsylvania's Marcellus Shale region, hauling frac sand and transporting other products used by the gas industry. The LVRR also assists local industries with the shipment of a wide array of finished and raw materials, including plastics, utility poles, railroad ties, coal, grain, steel, aggregate and agricultural products.

Federal, state and local funds were quickly dedicated to the replacement of the bridge, with numerous funding sources including the Federal Rail Administration (FRA), Pennsylvania Department of Transportation Bureau of Rail Freight, Lycoming County and FEMA. John Conrad, PE, railroad consulting engineer, and Keller Engineers, Inc., were retained to design the replacement structure, and Jannotti Rail Consulting was retained to design all track construction. Design of the replacement bridge not only needed to return rail service on the LVRR as quickly as possible, but also needed to consider frequent flooding that impacts the borough of Montoursville, as well as minimizing impacts to Loyalsock Creek, which is used by the surrounding community for such recreation as fishing and boating. Other considerations included the numerous utilities on-site, including an overhead electric transmission line, two gas lines and two sanitary sewer lines. Relocation of many of these utilities would have been costly, and the decision was made to maintain the utilities in their current location. Finally, this project included rehabilitation and realignment of LVRR Bridge 195.77, which is within the limits of track reconstruction, and reconstruction of the borough of Montoursville's Mill Street with a new grade crossing to accommodate the new rail alignment.

A three-span structure with steel through-girder approach spans and a through truss main span was selected to minimize the number of piers in the creek and to allow work to be completed under the electric transmission lines. Tropical Storm Lee, which exceeded the 100-year storm, was used as the design storm. The resulting raise in track was nearly three feet, requiring almost one-half mile

(continued on page 16)

- The following Sections, recognized during the ASHE Luncheon, were presented with certificates for achieving anniversary milestones: Central Ohio (30 years), Triko Valley (25 years) and Central Dacotah (20 years).

Regional Meetings:

I attended Regional Board meetings held in the Great Lakes Region on September 3rd and October 28th and the Southeast Region on October 2nd to add support for their efforts and offer my assistance. I hope to attend a Mid-Atlantic and Northeast Region meeting during my future travels.

In continuing with the efforts and focus to strengthen the Regional level of the organization spearheaded by immediate Past President Tom Morisi, I am pleased to report that all of the active Regions have embraced the goals and objectives established by the National Board and are in different stages of development. The Regional Oversight Committee is charged to provide each Region with direction, purpose, best practices and organizational guidelines to be successful. In time, it is our hope that the Regions will assume many of the duties, within their respective area, that were previously performed at the National level. Early discussions have begun at the Executive Board level, which emanated from our SWOT workshop, to review the current governance structure of the National Board, and prepare for the future. (Please refer to the **organization chart on page 15** that provides the interrelationships between all levels of the organization.)

Switching gears to promote current activities engaged by the National Board, I would like to feature the important contributions made by the Strategic Plan and New Section committees.

The Strategic Plan Committee is chaired by David Rast and composed of Bob Hochevar, Larry Ridlen, Bob Peda and me. Our committee is charged with facilitating the development of the 2012-2015 Strategic Plan (adopted October 12, 2012) and monitoring progress of the action items identified in the plan. The primary goals of the plan are summarized below for your convenience:

- Improve Internal Communications
- Improve External Communications
- Establish Strategic Alliances
- Expand and Retain Membership Strength and Viability
- Promote Education and Technology Transfer

The committee focuses on the implementation of the action items and works in collaboration with other ASHE committees to ensure that the goals and action items remain a priority. The goals to implement the plan are twofold:

The first goal is to provide a renewed emphasis on all of the action items that were developed with the current plan and ensure that other committees within ASHE take action.

The second goal is to re-evaluate the current Strategic Plan and action items in preparation for the development of the three-year update commencing in January 2015.

On October 10, 2014, the Strategic Plan Committee

conducted a comprehensive four-hour workshop in unison with the Executive Board, focusing on completion of the current 2012-2015 Strategic Plan while promoting the growth, viability and relevance of ASHE, and providing effective internal and external communication to our membership.

The 2015-2018 update will be similar to the current plan, with the exception of the action items attached to each goal. To the greatest extent practical, each action item will more clearly reflect the goals of the organization and include measurable success metrics by which the committee can report and track. It is expected that the resulting plan will provide clearer direction and more measurable benefits to the membership of ASHE. More details on this new plan will be forthcoming over the next few months.

The New Sections Committee is led by co-chairs Perry Schweiss and Timothy Matthews and composed of the following members: Michael Hurtt, Tom Bolte and Caroline Duffy. The geographic expansion of ASHE in the Rocky Mountain Region appears promising on the horizon. Arrangements are being finalized to host an introductory meeting in Denver, CO, on December 11, 2014, for prospective members to attend a presentation about the RTD I-225 Rail Line project and the merits of establishing a local presence of ASHE in this region. Michael Cates, who is based in Denver, is spearheading this initiative with assistance from the New Sections committee. After previous unsuccessful attempts to charter a Section in Denver, I look forward to joining Mike and Tim Matthews at their introductory meeting to welcome our guests to the organization.

I am pleased to report that we are also making significant progress in promoting ASHE in the Lone Star State, thanks to the energy and persistence of Jennifer Yoder, who recently moved to the Dallas-Fort Worth area (DFW). Texas has been on our radar for many years, and with Jenn and Adam Jack (who is championing our expansion in Beaumont, TX) at the helm, ASHE has never been better positioned to get that Lone Star to shine!

ASHE will be promoted through networking with partnering organizations, SMPS (Dallas), WTS (DFW) and Texas Public Works Association, during the annual Pre E-Week Transportation Forum, which Jenn is moderating, scheduled in February 2015. The forum for the Future of Transportation Funding is:

Transportation is essential to keep people and the economy moving—but current funding falls far short of what is needed to maintain and improve our current infrastructure. Because this is a nationwide issue, some states are looking to user fees to solve the problem, such as tolling and vehicle miles traveled; others are focused on local option taxes and public-private partnerships (P3's). Join us as we kick off E-Week with a presentation by a pioneer in congestion charging, electronic road pricing and road user charging throughout the world. Then, participate through live text message polling in a panel discussion on these issues and potential solutions.

I extend my thanks and appreciation to the entire membership for your efforts during the year. Your dedication, hard work and professionalism make ASHE great. 🇺🇸



Shirley Stuttler
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There are five other geographic areas including the North Central, Northwest, Pacific Northwest, Rocky Mountain, and South Central Regions which are inactive at this time due to the lack of Sections in the represented areas to make it viable.

*Central Dacotah Section of the North Central Region, presently covered by the Great Lakes Region

**Phoenix Sonoran Section of the Rocky Mountain Region, presently covered by the Southeast Region



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of track realignment. An open deck system was selected to minimize the required track raise and to permit access to the steel floorsystem for maintenance. Given that the cause of the original bridge failure was stream scour and undermining of the piers, all foundations were supported on steel piles driven to bedrock, even though bearing soils could have supported spread footings.

Bids were received June 5, 2013, and the project was awarded to Glenn O. Hawbaker, Inc., (GOH), of State College, PA, on June 30, 2013, with a total bid of \$9.1 million. High Steel Structures, Inc., (HSSI) was the steel fabricator, and K.W. Reese performed all track construction. Construction started immediately to meet the 12-month construction schedule, and several challenges were encountered that required immediate coordination between the contractor, engineer and owner to maintain the schedule.

These challenges included:

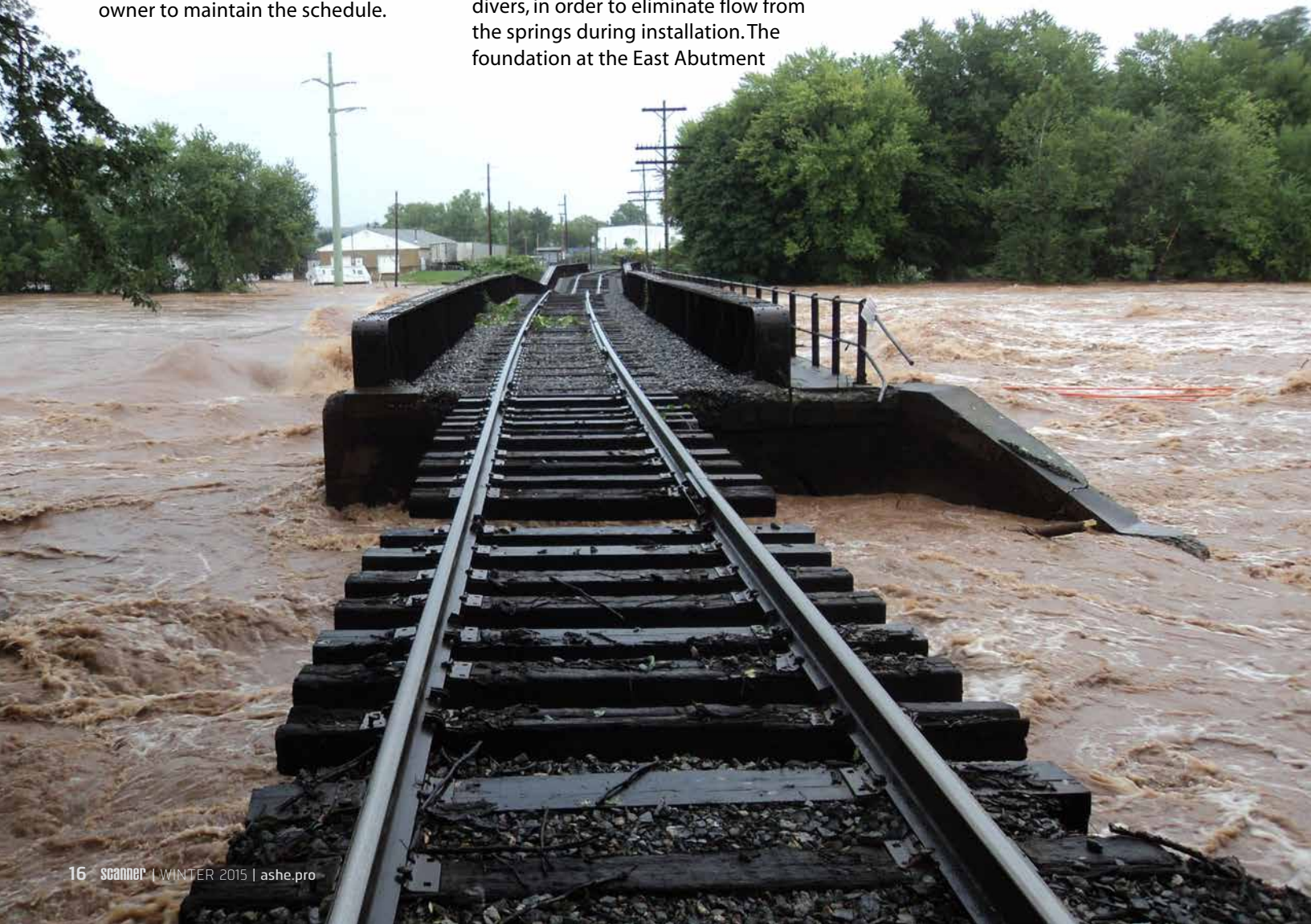
Dewatering

Artesian springs were encountered at the East Abutment and Pier 1, requiring that 6,000 to 8,000 gallons per minute be pumped from the excavations. The surface soils at the project site prevented infiltration of this volume of water, and alternate methods for discharging the pumps were explored. After discussing many options, DEP approval was quickly obtained to install a dewatering pond within Loyalsock Creek. Turbidity curtains were utilized to prevent sedimentation within the creek, and the pond was cleaned periodically throughout construction. Additionally, the pile cap was raised two feet, and a concrete tremie seal was poured to facilitate construction of Pier 1. The excavation was flooded after pile driving was completed, and the tremie seal was poured underwater, using divers, in order to eliminate flow from the springs during installation. The foundation at the East Abutment

was over-excavated, and large perforated pipes were installed with R-3 rock between the piles to direct water to four sumps to dewater the excavation.

Frequent Flooding of Loyalsock Creek

Frequent flooding of Loyalsock Creek caused numerous delays throughout construction. One of these flooding incidents was a six-foot increase in the water surface within a three-hour period when ice melt caused a release of water from a wetland upstream. Frequent overtopping of the construction causeway required that equipment and material be cleared regularly and that predicted rainfall be monitored to adequately plan operations. Sheet pile cofferdams were constructed for all excavations and left in place at the piers as additional scour protection. Temporary supports to facilitate truss erection were



founded on steel pipe piles to eliminate the risk of erosion damaging the towers.

Winter Operations

The original construction schedule included a winter shutdown; however, delays due to dewatering operations necessitated winter work to maintain the project schedule. In addition to form insulation, internal cooling pipes were utilized in the pier stems to minimize internal temperatures and temperature differentials for the 350-cubic-yard placements. A thermal control plan was provided by the contractor, and internal temperatures of the concrete in the larger pours were closely monitored during curing periods.


Shop Fabrication and Steel Erection

Streamlined shop drawing submissions were accepted to meet the aggressive construction schedule. All steel fabrications were detailed, using three-dimensional software, and shop drawings were limited to typical connection and member details. These drawings provided

enough information to convey 3D model accuracy and to allow the third-party shop inspector to complete all inspections. Individual component details and assembly tickets were not reviewed by the engineer. Steel erection proceeded from the East Abutment and worked west with no significant delays or problems encountered. Each through girder span was erected in five days, and the truss span was erected in six weeks. Tension control bolts were used to reduce the time needed to perform final torque on all bolts.

Constant communication between the engineer, contractor and owner allowed all of these items to be addressed quickly, thus maintaining the completion date and controlling costs, without sacrificing quality. The bridge was completed on time, and the first train ran July 2, 2014, culminating in the largest project that the JRA has completed to date. The final construction included over 1.5 million pounds of steel, 2,300 cubic yards of reinforced concrete, 13,000 feet of steel piles

and over one-half mile of new track construction, and was completed in 12 months. This structure was an almost all-Pennsylvania bridge, with the designer, contractor, fabricator and nearly all material provided from within the Commonwealth. The completed project allowed the Authority to fulfill its mission of providing uninterrupted service to its clients, continuing to encourage economic growth within JRA's member communities. The bridge consists of a light green steel structure setting on concrete piers and abutments that are both textured and stained.

The authors thank the following partners for their dedication to this project: George Fury, SEDA-COG JRA Project Manager; Jeff Stover, SEDA-COG JRA Executive Director; Paul Jannotti, PE, for track design; URS Corporation for H&H analyses; and Bud Dover, GOH Project Manager. Questions regarding this project may be forwarded to John P. Conrad, PE, jpconrad@aol.com, or Jason Shura, PE, at jshura@keller-engineers.com. 




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Pennsylvania Contractors/PennDOT/ASHE Meeting Results in Valuable Communication

by Bryce Miller, EIT, and Robert E. Schmidt, PE, ASHE Mid-Allegheny Section



Bob Latham, Executive Vice President of Associated Pennsylvania Contractors



Alicia Kavulic, PennDOT District 10-0 Geotechnical Engineer



Bryce Miller, ASHE Mid-Allegheny Section Vice President, and Paul Koza, PennDOT District 10-0 Assistant District Executive for Construction

Annually, the ASHE Mid-Allegheny Section joins with PennDOT District 10-0 and the Associated Pennsylvania Constructors (APC) to participate in a Liaison meeting. This year's gathering on Friday, November 7, included over 160 attendees and speakers from multiple sectors of the highway industry.

APC/PennDOT District Liaison meetings are a regular occurrence typically orchestrated between PennDOT and APC throughout the state. The meetings provide an opportunity to increase communication between PennDOT, the contractors and the designers/inspectors throughout the state, improving the quality of design and construction on the state's road and bridge structure network. Though there is a general agenda, the meetings provide an open format for both the private and public sectors to discuss district-specific and statewide issues relative to our highway industry.

Each fall, the Mid-Allegheny Section is asked by District 10-0 to participate in one of these meetings to aid in coordination of the meeting agenda, registration of guests, venue accommodations and to provide a technical speaker. This meeting gives the Section members opportunity to highlight ASHE to a diverse base of contractors, consultant designers/inspectors and PennDOT design, construction and maintenance personnel.

The 2014 meeting included a 45-minute networking social, followed by a five-hour technical program with

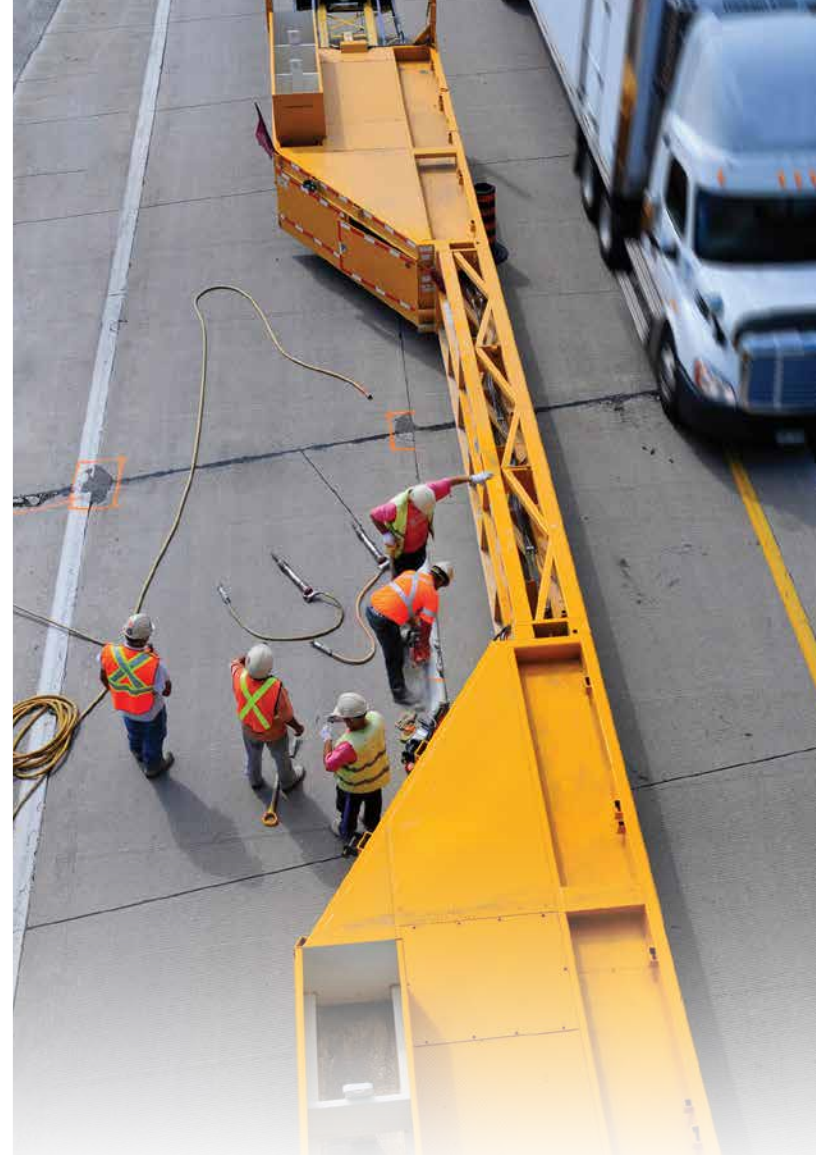
18 speakers and many mid-stream discussions between attendees and speakers on the topics presented. Paul Koza, PE, District 10-0 Assistant District Executive for Construction, provided opening comments and served as the meeting's general facilitator.

The program began with two presentations focused on geotechnical engineering and constructability. Alicia Kavulic, PE, District 10-0 Geotechnical Engineer, gave a presentation on Reinforced Soil Slope Construction, followed by the ASHE presentation from HDR Engineering's Don Splitstone, PE, who provided an overview of design and case history of micropiles. The program also touched on several topics and industry concerns, including changes and updates to Specifications (PennDOT Publication 408), materials review, deck cracking metric, project documentation, utilities and environmental permits.

One point of discussion was design versus as-built cross slopes on pavement and what construction tolerance is reasonable to expect from the contractors. This topic elicited discussions led by District 10-0 Engineers Craig Chelednik, PE, Chad Mosco, PE. Terry Kerr, PE, District 10-0 asked the attendees for input regarding construction tolerances and was joined in conversation by multiple contractors, consultant designers/inspectors and other PennDOT personnel. The discussions underscore why these meetings are valuable in industry, and demonstrate how PennDOT works with many industry associations to strive for improvements to our infrastructure. 🇺🇸



2014 APC/ASHE/PennDOT District 10 Liaison Meeting



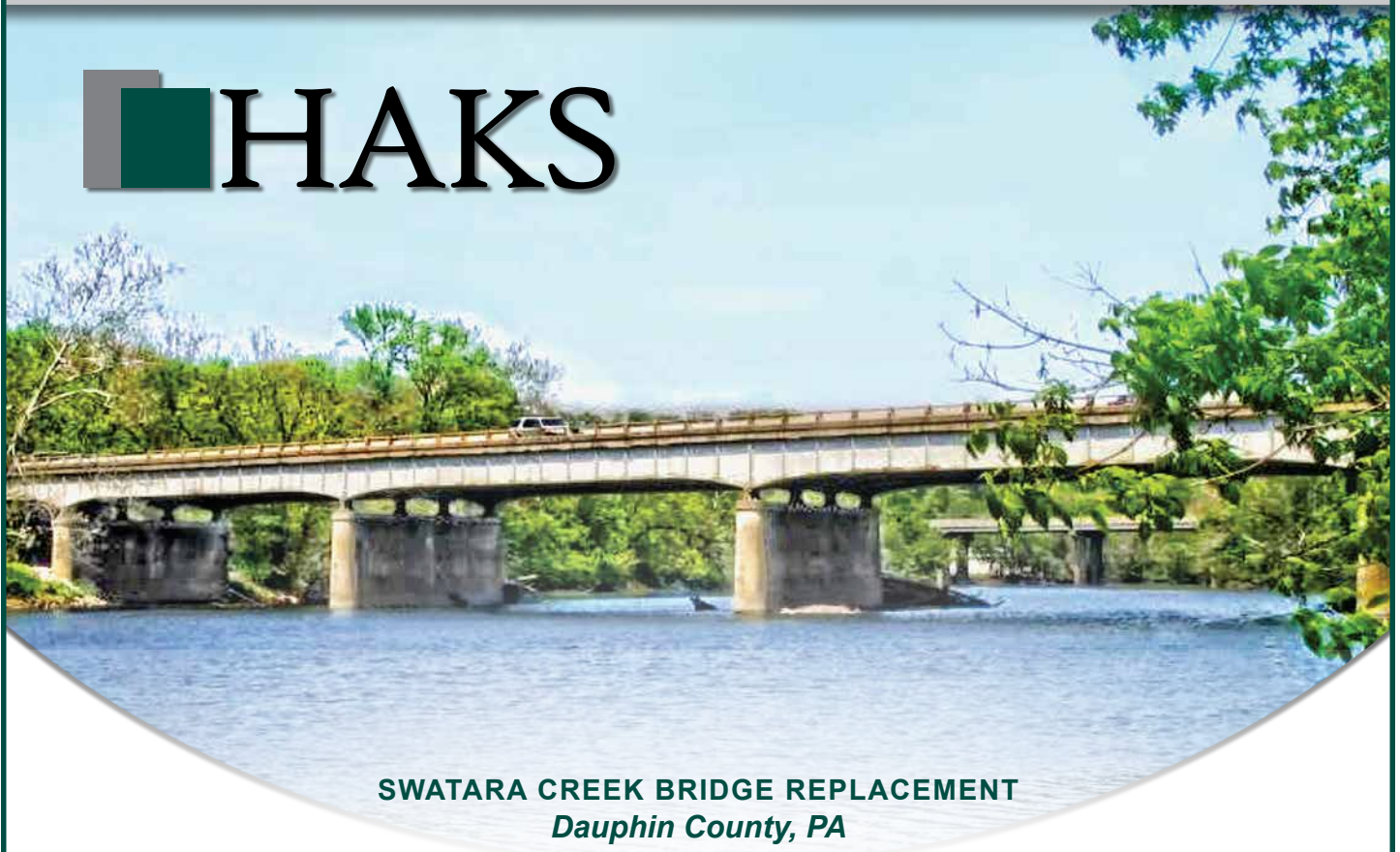
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After Superstorm Sandy: Route 35 Reappears in Mantoloking, NJ

by David Hutchinson, PE, Arora and Associates, PC,
ASHE North Central New Jersey Section

Barnegat Peninsula breach, Mantoloking
Bridge in the background.

On the night of October 29, 2012, Superstorm Sandy made landfall on the New Jersey shoreline, unleashing hurricane wind gusts and record-shattering storm surges. The eye of the storm landed near Atlantic City and hit areas to the north of the eye with unprecedented storm surges, resulting in major damage to infrastructure along the Jersey Shore. In the Borough of Mantoloking, the Barnegat Peninsula was breached, and three new inlets were formed connecting the Atlantic Ocean to Barnegat Bay. At the largest breach, a 500-foot section of State Route 35 vanished. The storm surge created a free-flowing channel between the ocean and the bay, removed the signalized intersection of Route 35 and CR 528 (Herbert Street) and obliterated a 500-foot section of CR 528.

Route 35 serves as the main artery of the Barnegat Peninsula, stretching over 12 miles along a thin strip of land and through several shore towns. For the New Jersey Department of Transportation (NJDOT), it was critical to reopen this main artery to initiate the recovery effort, and a plan was formed to reopen Route 35 by December 15, 2012. This six-week initial goal was complicated by the electrical blackouts and storm damage, which restricted site access and initially left responders without power and other supporting modern infrastructure services. Due to the magnitude of the breach, the reconstruction was overseen by NJDOT Capital Project Management, and Arora and Associates, PC, was appointed as the designer and construction inspector. Administrative Order (AO) 2012-13 was issued November 3, 2012, by the Commissioner of the New Jersey Department of Environmental Protection, waiving NJDEP permitting for in-kind replacements or repair of legally existing public infrastructure damaged by Hurricane Sandy. The AO was critical in facilitating the closure of the breaches and reconstruction of Route 35 within the given time frame.

Survey of the alignment, R.O.W. and existing conditions was begun immediately to initiate the design and reconstruction process. Establishing survey control proved to be a challenge due to the amount of storm debris and sand built up onsite. The onsite conditions were also constantly



Looking north across the breach. All utilities and traffic signals were washed out.



Reconstruction complete


changing as debris was removed and fill was brought in, which made establishing base conditions difficult. Within one week of the storm, the breaches were closed and the contractor, IEW Construction Group, had constructed a stone working platform across the breaches. Soon after construction of the platform, however, a strong nor'easter storm hit the area November 8, washing out a portion of the temporary dune fronting the ocean that had been constructed. The design specified sheeting along Route 35 northbound at the breach to maintain the roadway fill across the breach and to protect from future erosion and washouts. The sheeting installation began immediately after the nor'easter had passed. Arora furnished work-in-progress designs to the contractor to facilitate the around-the-clock construction operations. Ultimately, the contractor constructed 560 linear feet of sheeting across the breach.

Many underground utilities had been either undermined and broken or completely washed away across the breaches. Coordination with utility companies began immediately, and utilities reconstructed during the recovery included Mantoloking Borough's sanitary sewer gravity and force mains, 16-inch and 12-inch water and gas mains, telephone lines and aerial electric facilities.

Even though the project was an in-kind replacement working under a very tight time frame, the design team kept in mind the planned improvements for Route 35 to accommodate the future construction. The footprint of Route 35 at the breach was excavated below the scour line to ensure all debris would be removed from the roadbed and future settlement would not occur. This preventive measure also facilitated installation

of the numerous utilities and drainage. A new drainage system was designed that utilized existing outfalls and incorporated the proposed drainage improvements permitted in a future Route 35 rehabilitation project, which was in final design when the storm struck.

In addition, CR 528, which serves as one of the three access points to the Barnegat Peninsula via the Mantoloking Bridge over the Barnegat Bay, had been severely damaged by the storm. The retaining walls on the east end of the bridge had been washed out and needed to be reconstructed. Existing concrete T-wall sections had been swept away, and the embankment approaches to the bridge were undermined by nearly 10 feet. Using sheeting, concrete caps, closure walls and undamaged components of the bridge railing, the repairs were completed quickly, and this vital connection between the mainland and the peninsula was restored.

Route 35 was completely reconstructed with final paving and striping and opened to traffic by December 14, 2012, beating the deadline for the reopening of Route 35. By December 21, the bridge was repaired, over 500 feet of CR 528 was reconstructed and the traffic signal at Route 35 and CR 528 was fully operational and open to traffic. The project was an example of cooperation between the many stakeholders, highlighting the importance of good communication and commitment when reacting to a disaster. Daily meetings between stakeholders were held onsite to verify the coordination of the multiple parties involved. Cooperation among NJDOT, Ocean County, USACOE, utility companies, designers and contractors was the key to the success of the project. 



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Replacing a Vital Community Link: Building the New Jim Thorpe Bridge

by Richard M. Ames, PE, URS Corporation, Conshohocken, PA, **ASHE East Penn Section**



Historic Jim Thorpe
Lock and Lehigh
Canal


The Pennsylvania Department of Transportation Engineering District 5 (PennDOT) identified the PA Route 903 bridge in historic Jim Thorpe, PA, as one of the most structurally deficient bridges in the state. However, replacement of the bridge was anything but straightforward. The current bridge, constructed in the 1940s, exhibited effects of aging. It was a fracture critical two-girder design that had suffered damage from a gas pipeline fire, and required construction of a temporary pier bent. In addition, the northern roadway approach to the bridge makes a sharp dogleg through a residential neighborhood with narrow streets.

The town of Jim Thorpe has been a transportation hub since the early 1800s, serving as a shipping center for logging and coal barges traveling the Lehigh River and feeding Philadelphia, Trenton and other large East Coast cities. The Lehigh Coal & Navigation Company operated a canal system along the Lehigh River from 1827 until 1931. This canal system was an early 19th century engineering feat, allowing canal boats to travel the steep Lehigh River with a combination of locks, dams and impoundments. Beginning in 1855, two rival railroads—the Lehigh Valley Railroad and the Lehigh & Susquehanna Railroad—were operating on opposite banks of the Lehigh



903 Main Street Rendering





River and gradually replaced transport by the canal system. After devastating floods in 1862 destroyed a large portion of the Lehigh Canal, transport of coal shifted almost entirely to the railroads.

Because the bridge, which spans the Lehigh River, provides the only connection of the residential community to the downtown area of Jim Thorpe, and the nearest detour route was 20 miles away, PennDOT decided to construct the replacement bridge in a new location. This gave PennDOT's designer, URS Corporation, the opportunity to improve the safety and the efficiency of the crossing. The new crossing location was chosen approximately 800 feet north of the existing crossing, eliminating the safety concerns of the dog leg turns and providing for the most efficient traffic flow. The proposed structure is a 961-foot-long, four-span continuous steel plate girder bridge that arches high over the river gorge.

Project Challenges—The town has been called the “Switzerland of America” and, as such, the area's landscape presented challenges with its steep, rocky slopes and a swiftly flowing river. Additionally, the only relatively level areas adjacent to the river are occupied by railroads.

Culturally, the proposed bridge crosses eight significant features, including historic railroads, the historic Lehigh Coal and Navigation Canal, the Lehigh Gorge State Park, a multi-use path and the Lehigh River, classified as a Scenic River, which is actively used for whitewater rafting trips.

The topography and cultural features required long bridge spans; the longest is 330 feet, which crosses the Lehigh River, a historic canal lock and two railroad tracks. Due to this long bridge span, the plate girders are 10 feet tall.

At the southern end of the bridge, Route 903 intersects Route 209, which is perched into

a steep cliff, so roadway widening to provide turning lanes at the new intersection required an extensive system of tiered retaining walls. Overall, 43,000 square feet of modular precast and cast-in-place retaining walls were proposed.

Aesthetics—Due to the cultural impacts, mitigation in the form of aesthetic treatments and historic signage was required. The bridge piers, abutments, parapet and retaining walls all received a dry stack stone pattern. Since the bridge is in a new location, URS provided lifelike renderings of the proposed bridge and aesthetic treatments that were key in guiding the decision-making process.

Reduced Maintenance—A maintenance-friendly, continuous bridge structure with integral approach slabs was proposed. This removes all joints from the bridge deck and moves the expansion joints to the far end of the approach slab, thus minimizing any effects of corrosion. The bridge girders also have a low-maintenance weathering steel coating.

Accelerated Construction—PennDOT used a cost plus time or A+B(x) bidding for this project to minimize the overall duration of the project. This innovative bidding combines a bidder's price for contract items (A), plus the bidder's estimate of the time required to complete the project (B), multiplied by a daily cost factor (x).

The project, currently in construction, has an October 2015 completion date. URS Corporation was the prime design consultant, providing project management, roadway and structures design, A.D. Marble, environmental services, and Applied Geosciences, geotechnical engineering support. 



Girder Size



From left: Rosa Santillan, ASHE scholarship recipient; Sarah Worachek, ASHE Georgia Section Scholarship Chair; Kelly Smulovitz, ASHE scholarship recipient

ASHE Georgia Section Awards Three Scholarships to Students

Each year, the ASHE Georgia Section awards several scholarships to undergraduate students majoring in civil engineering in the Atlanta area. In September, three students received scholarships funded by the Jim McGee Memorial Scholarship fund. This year's recipients were Rosa Santillan, a senior at Southern Polytechnic State University; Kelly Smulovitz, a junior at the Georgia Institute of Technology; and Jacqueline Rogers, a senior at the Georgia Institute of Technology.

Philadelphia Section Names William K. Petersen as Geotechnical Engineer of the Year

The Philadelphia Section of the American Society of Civil Engineers (ASCE) has designated William K. Petersen as its 2014 Geotechnical Engineer of the Year, presenting him with the award at the Section's annual Spring Social on May 8, 2014. Mr. Petersen, a Senior Associate with Schnabel Engineering in West Chester, PA, handles site investigations, geotechnical analyses, design recommendations, expert witness testimony and construction services for projects covering highways, railroads and commercial, industrial and residential facilities. He has acted as Geotechnical Discipline Leader for major highway reconstruction projects, including project management, subconsultant coordination, oversight of subsurface exploration and construction phase services. Mr. Petersen earned a Bachelor's degree in Geology from Bowling Green University in 1985; a Bachelor's degree in Geological Engineering in 1988 from Purdue University; and a Master's degree in Engineering Geology in 1989. He chaired the Delaware Valley GeoInstitute technical group for the Philadelphia Section from 2011 to 2013, he is a member of the editorial board for *GEOSTRATA* magazine published by ASCE National's GeoInstitute and a member of *ASHE Delaware Valley Section*.

On November 4, 2014, the ASHE East Penn Section sponsored a site tour of the American Parkway Bridge in Allentown, PA. The tour was led by New Enterprise Stone & Lime Company, Inc., the project contractor. After the tour, design engineers from Gannet Fleming, Inc., presented the project to the group.



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News From Across ASHE-Miles



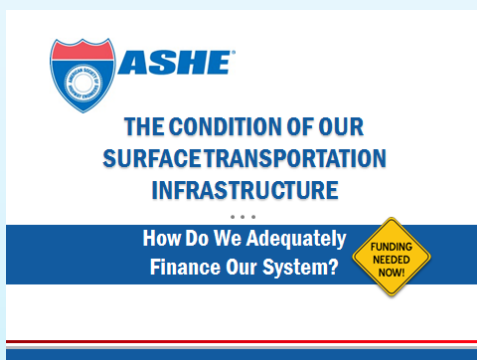
Funding. Fix It Now

The ASHE Legislative Committee, in conjunction with the National Board, has developed two tools that are available to all ASHE members and other organizations to raise awareness of the need for a long-term transportation funding solution. With the Highway Trust Fund patch expiring in May 2015, ASHE members should consider utilizing these two toolbox items to educate the public. The first item is the "Funding. Fix It Now!" and "Funding. Let's Give It Some Gas" windshield decals. These will soon be in production, and more details will follow. The intent is to mass distribute these to all Sections for distribution to members.

The second item is a presentation template loaded with relevant and timely data that can be used by ASHE members and constituents to advance the message for an improved highway funding solution. The presentation is available for download from the ASHE National website at ashe.pro under the Information>Downloads section.

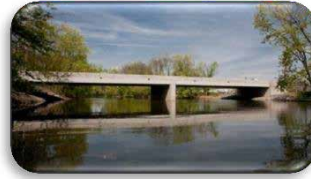
The base presentation will be updated periodically as needed. Please check back often for the most current versions. Understanding that each state has certain nuances, this tool is available in an editable format so that it can be customized, as necessary, to fit the particular situation and need.

The Legislative Committee encourages each Section to spend time reviewing this tool at one of the Section meetings. We would appreciate feedback on these tools and other ideas for advancing the funding discussion or other items of a legislative nature. Please direct any comments or questions through the ashe.pro contact page on the website.



(continued on page 31)

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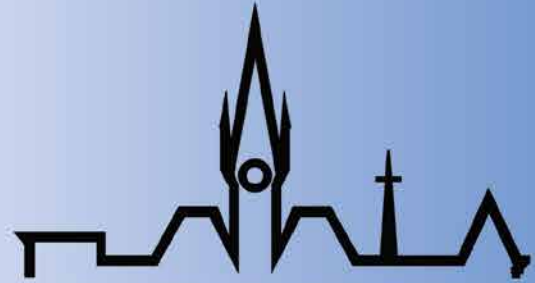
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News From Across ASHE-Miles

ASHE Pittsburgh Section Holds Annual Past Presidents' Banquet

On October 18, 2014, the ASHE Pittsburgh Section held its 45th Annual Past Presidents' Banquet to honor those who have led the Section. More than 190 members and guests attended the event at the Rivers Casino on Pittsburgh's North Side. ASHE National President Sam Mody presented his goals for the organization, and the Las Vegas-themed entertainment included a Frank Sinatra impersonator and a strolling accordionist. Raffle ticket sales raised over \$1,000 for the Pittsburgh Section Scholarship Fund. The 2013-14 Pittsburgh Section President, George Zboyovsky, was presented with the President's Pin and an award plaque. Anthony Castellone received the 2014 Pittsburgh Section



National President: Sam Mody

Member of the Year Award for his outstanding contributions to the Section. Recipients of the 2014 ASHE Pittsburgh Section Outstanding Highway Engineering Project Awards were also announced at the banquet. They included:

Projects between \$5,000,000 and \$15,000,000: SR 2040 Brownsville Broughton/Library Road Improvements Project. *Designer:* SAI Consulting Engineers; *Owner:* Allegheny County Department of Public Works; *Contractor:* Frank J. Zottola Construction, Inc.



ASHE Pittsburgh Past Presidents (left to right): Kevin Duris, Sean Henderson, Brian Krul, Jerry Pitzer, Lisle Williams, Rich Bogovich, Don Gennuso, Dan Patterson, George Zboyovsky, Gene Lipovich, Dave Cooper, Blair Stocker



Current President Kathryn Power and Immediate Past President George Zboyovsky

Projects less than \$5,000,000: Mill Street

Bridge/American Veterans Memorial Bridge, New Castle. *Designer:* ms consultants, inc.; *Owner:* Lawrence County; *Contractor:* Clearwater Construction

Projects over \$15,000,000: I-579 Crosstown Boulevard Bridge Preservation Project. *Design engineer:* Michael Baker International; *Owner:* PennDOT District 11; *Contractor:* Trumbull Corporation

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Bridging Enhanced Quality of Life with Improved Public Safety in Florida

by Hisham Sunna, PhD, PE, Ayres Associates, **ASHE Tampa Bay Section**

*Courtney
Campbell
Bridge*

A new pedestrian bridge is making travel safer for bicyclists, joggers and other outdoor enthusiasts wishing to cross Old Tampa Bay between Clearwater and Tampa, Florida.

Before the construction of the Courtney Campbell Multiuse Trail Bridge, non-motorized members of the public wishing to cross this corridor had to join their motorized counterparts along State Road 60 (Courtney Campbell Causeway)—where traffic barreled by at 60 mph or more. Now, they have a safer and more recreationally based travel alternative: an 18-foot-wide, 3,258-foot-long pedestrian bridge open only to non-vehicular traffic. The structure reduces the risk of pedestrian-bicycle-vehicle crashes, provides connections to other trails and better positions the region for future sporting events that may use the trail network in the area.

“In my mind, this project addresses quality of life issues that tend to get overlooked in urban areas. It gives people more opportunity for recreation—fishing, jogging, bicycling, skating—from one place to another while enjoying the scenic highway,” said Hisham Sunna, PhD, PE, Vice

President of Ayres Associates, the architectural and engineering consulting firm responsible for the project design. He noted that the causeway—just 90 feet away from the new pedestrian bridge—is designated as a Florida Scenic Highway.

The completed Trail Bridge project runs adjacent to the busy causeway. It begins at the Pinellas-Hillsborough county line and extends across the bay to west of the Ben T. Davis Beach entrance in Hillsborough County. Since its September 2013 opening, the bridge has been well received by the community and praised for its public safety improvements. Federal enhancement dollars helped fund the \$14.6 million project.

Not only does the pedestrian bridge more safely serve the non-motorized public, it also offers an aesthetic enhancement. Designers took care to see that the pedestrian bridge would not obstruct the views from the main highway. The bridge features four strategically placed overlooks that provide trail users with views of Old Tampa Bay. The observation points were not a project requirement but included in the design to enhance the user experience.

At more than 45 feet above water, the bridge is the only high-level pedestrian bridge in Florida. The bridge is designed to withstand the same vessel collision forces as would have been required for a vehicular bridge over the same waterway. Ayres also designed new seawalls, shore protection, an access road, the trail, stormwater treatment and parking.

The design and construction of the structure addressed the sensitive marine environment, as well as the challenging variability in foundation soil profiles and bedrock layers. Due to difficult pile driving conditions, it was not feasible to use a uniform pile tip elevation within each foundation unit. As each pile was driven, the footing was analyzed, using the achieved tip elevation to evaluate lateral stability and determine the required tip elevations for the remaining piles within the footing. The pre-punch method used in pile installation also avoided creating turbidity, thus protecting the seagrass beds that are prevalent in the area, and which are home to many marine species. The bridge is located on the south side of the causeway to minimize impacts to mangroves.

Ultimately, the completed structure met all project objectives outlined by the Florida Department of Transportation, enhancing the quality of life, improving public safety and making it more attractive to tourists. It has also earned a Grand Award in the Florida Institute of Consulting Engineers 2014 Engineering Excellence Awards competition and a National Recognition Award in the American Council of Engineering Companies 2014 Engineering Excellence Awards program. 🇺🇸



Dedication plaque

Get Connected

At Stokes Creative Group, Inc. we know how important it is to connect with your target audience. Let our team of professionals help you make that connection. Call us today to learn more about the full line of services we offer to enhance and elevate your brand.

Public Outreach • Video Production • Graphic Support
Website Design • Photography

STOKES
Creative Group, Inc.
A FULL SERVICE MARKETING AGENCY
WBE/DBE/SBE/WBENC

Office Locations:
NJ • NY • PA • MD • FL
StokesCG.com • 609.859.8400

JMT
JOHNSON, MIRMIAN & THOMPSON
Engineering A Brighter Future®
An Employee Owned Company

www.jmt.com
Toll Free (800) 472-2310

Our Markets:

- Transportation
- Buildings & Facilities
- Water, Wastewater & Utilities
- Energy
- Federal Programs
- Information Technology

Our Services:

- Surveys & Mapping
- Planning
- Design
- Program & Construction Management
- Environmental & Sustainable Solutions
- Innovative Project Delivery

TRANSPORTATION | ARCHITECTURE | ENVIRONMENTAL

Strengthening Communities through Engineering Excellence



Services include:
Bridge • Highway • Survey
Inspection • Planning
Construction Services

Office locations:
Pittsburgh | State College
York (Corporate Headquarters)
800-274-2224 | www.bh-ba.com



Post New Job Openings

ASHE's Online
Job Bank Partner
www.thefulcrumintl.com

**Check our website for the most
current job openings.**

- Confidential Client in Orlando, FL - Positions for a roadway project engineer, roadway project manager, land development project manager, and a drainage engineer.
- JMT - positions for a roadway project engineer in Richmond, VA and Lake Mary, FL.
- Parsons - A roadway sr. project manager and a roadway project engineer in New York, NY.
- Woolpert - A roadway project manager in Chesapeake, VA.

POST YOUR COMPANY'S OPEN POSITIONS

The Fulcrum International offers a 10% discount to ASHE Members on new job postings.

Postings are advertised on
www.thefulcrumintl.com, in ASHE's weekly
"Inside Lanes" e-news blast, and on ASHE
National's LinkedIN Jobs Discussion page.



Contact:
info@
[thefulcrumintl.com](mailto:info@thefulcrumintl.com)
407-228-1747



ARORA and ASSOCIATES, P.C.
Consulting Engineers

- HIGHWAY AND BRIDGE DESIGN
- SEISMIC DESIGN & RETROFIT
- HYDRAULICS & HYDROLOGY
- SURVEYING & MAPPING
- UTILITY ENGINEERING
- CONSTRUCTION MANAGEMENT
- BRIDGE & STRUCTURAL INSPECTION
- GEOTECHNICAL ENGINEERING
- ELECTRICAL & LIGHTING DESIGN
- INFRASTRUCTURE SECURITY
- LANDSCAPE ARCHITECTURE
- TRAFFIC & TRANSPORTATION



Corporate Headquarters:
1200 Lenox Drive, Suite 200
Lawrenceville, NJ 08648
Tel: 609-844-1111 • Fax: 609-844-9799
e-mail: arora@arorapc.com
visit us at www.arorapc.com

Certified Minority Business Enterprise
New York • New Jersey • Pennsylvania

Mapping the world inside and out



- > Subsurface Utility Engineering
- > Ground Penetrating Radar
- > 3D Underground Imaging
- > Utility Coordination
- > Utility Relocation
- > Survey and Mapping
- > Utility Design, Permitting and Inspection
- > High Frequency Radar Concrete Imaging

suesurvey@cardno.com
www.cardno.com

Tell the ASHE world about your company with an ad in the Scanner.

- Professional, cohesive appearance
- Still sent to ASHE members four times a year, at no charge
- Appealing to a diverse audience and delivered to over 6,500 readers
- Great opportunities to advertise to an audience already interested in the highway and transportation industry
- Providing credibility and recognition from both the public and government sectors

Rate Sheet and Agreement



American Society of Highway Engineers

Please complete this agreement by including your contact information below, checking your choice of ad size, which issue of scanner and payment option:

Advertiser Name _____

Contact _____

Address _____

City _____ State _____ Zip _____

Phone _____

Fax _____

Email _____

Signature _____ Date _____

Need help with ad design?

contact Tammy at
tntsince87@comcast.net
for a quote

Ad Size and Rate-

	One Time	Four Times	Size Specifications
___ Full Page	\$650	\$2,400 (\$600/Issue)	7-1/2 x 10" or full bleed 8-3/4 x 11-1/4", trim at 8-1/2 x 11"
___ Half Page	\$550	\$2,000 (\$500/Issue)	7-1/2 x 4-3/4" horizontal or 3-1/2 x 10" vertical
___ Quarter Page	\$450	\$1,600 (\$400/Issue)	7-1/2 x 2-1/4" horizontal or 3-1/2 x 4-3/4" vertical
___ Business Card	\$350	\$1,200 (\$300/Issue)	3-1/2 x 2-3/8" horizontal
___ Classified	Email text to editor for quote: John Hetrick at jlhetrick12@gmail.com		

Place Our Ad as Marked-

SCANNER Issue	Distribution	Materials Due (ads and articles/photos)
___ Spring	March	January 15
___ Summer	June	April 15
___ Fall	September	July 15
___ Winter	December	October 15

Specifications-

Ad files- high resolution (300dpi) .pdf, .eps, .tif, or .jpeg. All ads print in color.

Articles- Word or text document with location/ ASHE Section and author named; photos as high resolution (300dpi) .pdf, .eps, .tif, or .jpeg. Please include captions with photos.

Payment-

___ Payment enclosed for all issues checked (**Preferred Method**), made payable to TNT Graphics.

___ Payment enclosed for first issue; please bill me for each additional issue.

Send agreement and email ad files to-

TNT Graphics
207 E. Pine Grove Road
P.O. Box 344
Pine Grove Mills, PA 16868-0344
Tel: 814-231-1291
tntsince87@comcast.net

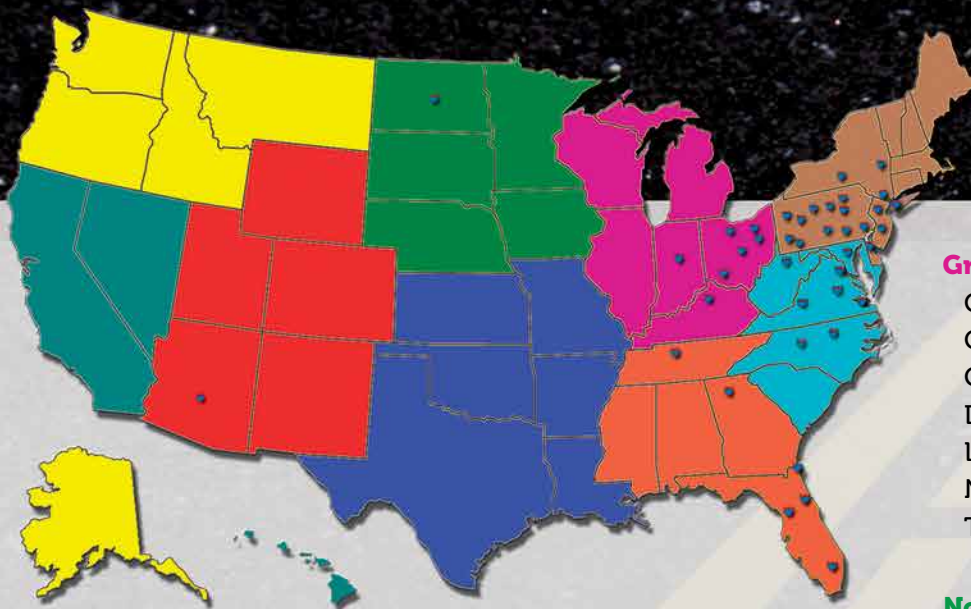
**ASHE®**

c/o TNT Graphics
207 E. Pine Grove Road
Pine Grove Mills, PA 16868-0344

PRSRT STD
U.S. POSTAGE
PAID
Greensburg PA
PERMIT No. 88

Change Service Requested

ASHE Membership



Northeast Region

Albany	100
Altoona	198
Central New York	49
Clearfield	147
Delaware Valley	383
East Penn	49
First State	125
Franklin	159
Harrisburg	362
Long Island	44
Mid-Allegheny	115
New York Metro	86
North Central New Jersey	183
North East Penn	130
Pittsburgh	576
Southern New Jersey	200
Southwest Penn	297
Williamsport	127

Subtotal 3,330

Mid-Atlantic Region

Blue Ridge	70
Carolina Piedmont	59
Carolina Triangle	218
Chesapeake	205
Greater Hampton Roads	119
North Central	
West Virginia	32
Old Dominion	88
Potomac	249

Subtotal 1,040

Southeast Region

Central Florida	47
Georgia	353
Gold Coast	10
Middle Tennessee	172
Northeast Florida	185
Tampa Bay	85

Subtotal 852

Great Lakes Region

Central Ohio	181
Circle City	50
Cuyahoga Valley	121
Derby City	79
Lake Erie	130
Northwest Ohio	47
Triko Valley	175

Subtotal 783

North Central Region

Central Dacotah	123
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Subtotal 123

Rocky Mountain Region

Phoenix Sonoran	130
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Subtotal 130

Other Memberships

Domestic At-Large	2
International At-Large	9

Subtotal 11

National Total 6,269

Professional Status	57%
Government	13%
Consultant	69%
Contractor	5%
Other	13%

There are three other geographic areas, including Northwest, Pacific Northwest and South Central Regions. These three areas are inactive at this time due to the lack of Sections in these Regions.