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ASHE National Membership Database Upgrade

ASHE is excited to roll out its updated web-based membership database. Each member can access and maintain his or her own membership data. National’s goal is that this database will become the common platform that both National and the Sections use to maintain all membership information.

To access the database, go to www.database.ashe.pro. You must input your personal ID number which is an eight digit number located on the SCANNER mailing label. This will be your ASHE ID number for as long as you are a member of the Society. Your initial password is the zip code (including the dash if it is a nine-digit code) also on the mailing label. Change your password after your initial login to ensure the security of your data.

Please take your first opportunity to review and update your personal data in the database.
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I have been traveling over the past few months attending Section events, meeting members, and seeing how ASHE functions in the different areas of the country. In doing this, it is obvious how our grassroots organization has grown and continues to prosper the way it does. We owe that to our many talented, energetic and enthusiastic members. They are all working hard to ensure the viability of ASHE and see that our mission succeeds. Thank you to all of the members and leaders in each Section and Region for your hard work. We could not be what we are without you.

In the spring we announced a program to kick-off the strengthening of the organization at the Regional level. That program offered a portion of the profits from our 2012 Conference to the Regions to use as a basis for their treasury and to help them get started as a successful leadership body. In order to receive that money, each of the four active Regions had to have officers in place, approved bylaws, and a treasury. As of the writing of this article, we are proud to announce that the Northeast, Southeast and Great Lakes Regions have successfully accomplished these goals and have submitted for disbursement of the conference profits. The Mid-Atlantic Region is close to meeting the requirements and only has some minor revisions to make to the bylaws. I expect they will have accomplished this by the time this article is published.

The purpose of strengthening Regional government is to help stage ASHE to grow. As Regional governments are established, they will take over many of the duties, within their geographic area, that were previously performed at the National level. This will not only help strengthen the Regions and the Sections, but it will allow National to concentrate beyond our current, active Regions.

As part of our efforts, I have attended Regional Board meetings in the Northeast, Southeast and Great Lakes to show support for their efforts and to offer assistance. I plan to complete these visits by attending a Mid-Atlantic Region Board meeting in the spring. Based on my attendance at these meetings, the following highlights of what is happening in each Region are provided:

**Northeast Region** – The Northeast Region Board meeting was conducted September 16, 2013, under the leadership of Altoona Section President, Alice Hammond. The Board reviewed their Regional Events Calendar, which summarizes upcoming meetings for all 18 Sections in the Region. Their previously formed Nominations Committee presented recommendations for available National Board positions and the Exposure Committee prepared for solicitation to Sections for exposure grant monies. Looking to the future and further development, the Region formed an Education Committee and a Regional Steering Committee. The Region also assigned members to prepare a Best Practices Manual that will survey each Section in the Region, asking what has been successful for them for everything from golf outings to growth. The manual will then be shared with each Section for use in making their programs more successful.

**Southeast Region** – The Southeast Region Board meeting was conducted September 26, 2013 under the leadership of Georgia Section President, Scott Jordan. The Board held an information sharing discussion with topics including maintaining membership, use of the ASHE National display booth, brochures, and websites. This was an excellent discussion that allowed each Section to see successes in other Sections that may help them out. Looking to the future of the Region, a Public Relations Committee was formed and Region officers for the upcoming year were reviewed. The focus of the meeting was really to strengthen existing Sections within the Region through information sharing and strong communication.

**Great Lakes Region** – The Great Lakes Region Board meeting was held October 22, 2013 under the leadership of Cuyahoga Valley Section Immediate Past President, Frank Bronzo. The meeting represented a reorganization of the Region with new...
From the Editor’s Laptop

John L. Hetrick, P.E.

The foundation of ASHE is Education, Innovation and Fellowship! All of these items have made ASHE the great organization that it is.

Our founding forefathers in 1958 had a vision that was well thought out and would stand the test of time. Whether the meeting is a technical seminar, educational seminar at a National Conference or a Section/Region education seminar one thing is always present, the SOCIAL FUNCTION.

Some Section meetings are only meant to be a social function, such as a golf outing, but the heavy educational seminars also have the social function present. This makes ASHE fun, bringing closeness to the organization and allowing the members to take away something that money cannot buy – life-time friendships. I encourage all members to get out to local meetings. If you are in another city on business where there is a Section, check to see if they are having a meeting and attend. One thing to remember, the friend you make today may be a co-worker or even your future employer tomorrow.

When I started this column in the summer issue I received unsolicited comments from friends and co-workers. Some even said that they actually went online and updated their personal information. What a pleasant surprise! If you are one who needs to update your information please do it today.

Comments or suggestions can be sent to my email jlhetrick12@gmail.com.

“Message” continued from p. 5

officers and the formation of committees. Committees being formed in the Region include Budget/Audit, Nominating, Website, By-Laws, Public Relations, Membership Database, New Sections, Technical/SCANNER, Student Memberships, Fundraising, Legislative, and Region Awards. The Region is working to establish committee leadership and add members to help move the Region into the future. An information sharing discussion was held to benefit Sections within the Region.

While I have not attended the Mid-Atlantic Region Meeting yet, I know they have a Regional Government under the strong leadership of Roger Carriker from the Chesapeake Section. They are organized and working successfully. I look forward to my visit in the spring.

As stated, this new structure will help strengthen our overall organization, situate us for growth, and strongly improve our internal communication. That said, it also opens up a number of opportunities for you, our members, whether it be in leadership or support roles within Regional government and Committees. For example, start a new Section in Boston or start a Student Chapter at your alma mater. Do you have ideas on how to help ASHE support a sustained transportation funding source? As stated, you can take a leadership or support role. Both are needed. Get involved to learn leadership, organization, and government to help you succeed or advance in your full-time position.

This is a fantastic grassroots organization, thanks to you, our members. Help us take ASHE to the next level with your expertise. Please contact your Regional Representative at your local Section for ways to become more actively involved.

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ASHE HAS learned that one of its founding fathers passed away. Russell E. Horn, Sr. of York, Pennsylvania died December 4, 2013. Mr. Horn was 101 years old.

“We owe a great deal of gratitude to Mr. Horn for his years of support and friendship to ASHE,” Thomas Morisi, ASHE National President, said after learning of the death. “Our history book reads, ‘It was a group of visionaries who sought to create a Society for those interested in the advancement of the Highway Industry.’ Russell Horn was one of those visionaries. His life and his career set a fine example for all of our members and for the leadership of this great organization. As members, our lives are just a little bit better due to the efforts of Mr. Horn, and for that we are grateful.”

“A contribution to Mr. Horn’s many charities will be made by ASHE,” Morisi said, as a way to honor this special friend.

At the 2008 ASHE 50th Anniversary National Conference, Mr. Horn was awarded the Robert E. Pearson Person of the Year Award. The following was printed in the conference program highlighting Mr. Horn’s contributions and achievements throughout his life:

“Mr. Horn’s interest and support of the highway industry and ASHE is notable. He was a Charter member of the National American Society of Highway Engineers organization in 1958 and of the ASHE Harrisburg Section in 1961. He also served as ASHE National President for the 1962-63 term. Throughout his career, he has supported ASHE, attending Harrisburg and other Section meetings and the National Conventions/Conferences whenever possible. In 2001, as a way to demonstrate his strong feelings for ASHE, he wanted to donate $1,000 to the favorite charity of the recipient of the annual Robert E. Pearson/Person of the Year Award. This is now known as the Russell Horn $1,000 Grant and presented each year at the ASHE Conference during the Past President’s Luncheon.

A dynamic and devoted leader, Russell E. Horn’s professional career began when he returned from World War II in 1945 and joined his boyhood friend, Clair S. Buchart, in founding the five-man architectural/engineering firm of Buchart-Engineering.

The firm grew to a more than 570-employee operation with 32 locations throughout eastern and southeastern United States and Germany. During his more than half century career, Mr. Horn had the opportunity to organize various companies, and served as first President and Chairman of the Board for several of the firms. In 1970, in order to bring each company back under one operating force, he organized PACE Resources, Inc. as a parent holding company. Mr. Horn served as President, CEO and Chairman of the Board.

Mr. Horn received his Bachelor of Science Degree in Civil Engineering from The Pennsylvania State University and completed courses from the Wharton School at the University of Pennsylvania. He is registered as a Professional Engineer in Pennsylvania and was formerly registered in 19 additional states.

Mr. Horn served four years, 11 months in World War II as a Platoon, Company, and Battalion Commander. He rose from 1st Lieutenant to Lieutenant Colonel and received various medals and battle stars. He retired from the Army Reserves as a Colonel in 1963.

Volumes could be written about Russell E. Horn, Sr., as a Churchman, Humanitarian, Civic Leader and Public Official. He served in nearly every position, including Sunday school teacher, in his local church (Calvary United Methodist.)

Just a few of the many honors and achievements that he has earned are as follows:

- Engineer of the Year (1969) Pennsylvania Society of Professional Engineers Lincoln Chapter
- American Red Cross Chairman’s National Centennial Club Member
- Received the Washington Medal from Freedoms Foundation in 1969 for articles in Slide rule and Record published by Buchart-Horn, Inc.
- Central Pennsylvania Conference of the United Methodist Church Delegate to the Jurisdictional Conference in 1976 and 1980
- Masonic Legion of Freedom Award (1987)
- Awarded the Masonic Order of the Double Eagle (1983)
- Golden Deeds Award by West York Exchange Club (1979)
- Certificate of Outstanding Service by the Pennsylvania Society of Professional Engineers Lincoln Chapter
- The Pennsylvania State University College of Engineering Outstanding Engineering Alumnus (1987)
- The Pennsylvania State University Alumni Fellow(1990)

The American Society of Highway Engineers is honored to have had a friend in Russell Horn.
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According to government data, North Carolina is one of the fastest growing states in the country due in part to its location in the center of the eastern seaboard, temperate climate, and scenic attractions. Five major interstates and many urban freeways cross the state providing safe and efficient movement of people and goods. However, with growth comes significant increases in vehicle miles traveled, leaving NCDOT and its partners seeking cost-effective solutions to congested diamond interchanges.

In the 1990’s, the single point urban interchange (SPUI) was shown to increase efficiency over traditional diamond interchanges. As SPUIs were constructed in North Carolina and nationally, some safety issues were realized with the large radius turns through the center of the SPUI, and cost issues were realized due to the complexity of the bowtie-shaped structure required of a SPUI. SPUIs also proved difficult for bicycles and pedestrians to cross due to the long, skewed ramp crossings.

North Carolina discovered the Diverging Diamond Interchange (DDI, also known as the Double Crossover Diamond Interchange) by research and studies performed in conjunction with the Missouri Department of Transportation as they designed and constructed the first DDI in the United States in Springfield in 2009. Research showed that a DDI could be constructed with improved mobility and safety at a lower cost than a SPUI. Further data indicated that pedestrian operations can be greatly improved with a DDI compared to a SPUI.

NCDOT and their partners investigated construction of DDIs in lieu of other interchange designs, especially where there are equally high volumes of through traffic and left-turns to/from the freeway. Analysis of freeway interchange projects has shown significant mobility benefits of the DDI in many cases due to the simplified signal phasing at the crossover intersections and that left-turns onto the freeway no longer are required to yield to oncoming traffic. In addition, in many cases DDIs have been found to move more traffic through interchanges without the need to replace or widen existing bridges, hence saving money.

NCDOT and its stakeholders developed multiple public involvement tools to explain this relatively new concept, including an informational flyer, a narrated video to describe how to navigate a DDI, and 3-D visualization of motorists driving through a DDI including appropriate signing and marking. Upon release of DDI designs, public concerns emerged with driving on the opposite side through the interchange. However, a greater public understanding was achieved at public meetings upon explanation and visualization of navigating DDIs.

As of October 2013, there are 12 DDIs either in design or under construction in North Carolina. Initial construction bid estimates for a proposed DDI near Charlotte were near $6 million, whereas the expected constructed cost of a SPUI was about $30 million. Another proposed DDI near Wilmington saved the state nearly $12 million in construction costs compared to the original partial cloverleaf design. In both cases, levels of service and maximum queuing is greatly improved with the DDI over originally-proposed interchange designs.

North Carolina expects to have its first DDI open in 2014, with others soon to follow. NCDOT and its partners will continue to evaluate and pursue Diverging Diamond Interchanges in the proper contexts to promote the safest and most efficient travel for our citizens, especially where there is significant cost savings.
Marshalls Creek Bypass Project

Using Smart Transportation in an Environmentally Sensitive Area (Northeastern Pennsylvania)

Heather Heeter
PennDOT Engineering District 5-0
ASHE East Penn Board Member

Project Background

As a result of tourism and rapid population growth in the Pocono Mountain Region of northeastern Pennsylvania, the roadway network within the Village of Marshalls Creek became overwhelmed in the mid 1980s. To alleviate this problem, PennDOT Engineering District 5-0 embarked on a mission to find a viable solution that would relieve congestion and improve the quality of life for local residents.

The primary objective of the project was to relocate U.S. Route 209 from the center of Marshalls Creek where it intersected with Business Route 209 and PA Route 402 at two signalized intersections. The bottleneck and congestion created at these intersections was well known throughout the region. On a summer weekend during the peak of the tourist season, it was not uncommon for traffic backups to extend over five miles in all directions. Consequently, reducing congestion in the area was the paramount goal of the project. Other goals included increasing safety, decreasing emergency response times, and improving access throughout the U.S. Route 209 corridor. After years of study and conceptual design, PennDOT chose a four-lane, limited access alternative with a new interchange to Bypass the village.

This oversized box culvert was designed as a wildlife passage to maintain connectivity of upland areas to the aquatic resources around Marshalls Creek.
Environmental Resources in the Area

The Pocono Mountain Region has long been known for its natural beauty and history. The environmental and cultural resources in the region are a significant attraction for vacationing tourists and are the basis for many businesses. The project area supports an abundance of biodiversity, including black bear, whitetail deer, turkey, beaver, river otters and high quality forests and habitats. Aquatic resources include high quality streams, exceptional value wetlands, vernal ponds, and two state endangered species of fish. Wildlife movement across the new Bypass was a major concern. Several locations along the planned Bypass were designated as wildlife corridors that connected the upland habitats to the east of the project to Marshalls Creek. As a result of the environmental resources around Marshalls Creek, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Environmental Protection Agency, the PA Department of Environmental Protection, the PA Game Commission, and the PA Fish and Boat Commission agreed that a comprehensive approach was necessary to mitigate project impacts. From the start, it was clear that coordinating with these State and Federal agencies, and obtaining the necessary environmental permits, would be a challenging and important measure of success for the project.

Using Smart Transportation to Reduce Impacts

From 2005 until 2008, construction costs for the project increased significantly and PennDOT started to look for a less expensive option that had fewer environmental impacts. PennDOT’s consultant, Dewberry Engineers Inc., went back to the drawing board with the direction to use Smart Transportation principles to right-size the project, particularly the principle of “tailoring the solution to the context.” After several alternatives were developed and studied by the design team, the Bypass was modified to a two-lane limited access roadway with a significant reduction in length. A roundabout, which was PennDOT District 5-0’s first, was added to the project to help improve traffic flow and reduce congestion in the area. Many of the new features in the design provided the basis for the principles outlined in PennDOT’s Smart Transportation Guidebook. Published in 2008 by the Pennsylvania and New Jersey Departments of Transportation, the purpose of the Guidebook is to “integrate the planning and design of streets and highways in a manner that fosters development of sustainable and livable communities.”

As coordination with the environmental agencies progressed, it became evident that the addition of three wildlife passages would be necessary to mitigate impacts to the wildlife corridors. As a result of modifying the design to meet Smart Transportation principles, the wildlife passages were significantly reduced in number, scope, and cost. Final design included multiple wildlife passages; two were designed as box culverts and the third was a single span bridge on stub abutments. In addition to these structures, the environmental agencies required the use of eight-foot-high fencing to direct animals toward the wildlife passages and prevent them from crossing the Bypass roadway. By incorporating the use of wildlife passage structures and fencing, animal movement was maintained between the upland areas and Marshalls Creek.

The Marshalls Creek Bypass project is an example of using Smart Transportation to find innovative solutions that cultivate livable and sustainable communities in Pennsylvania. Environmental impacts were reduced and agency coordination was streamlined as a result of using Smart Transportation. PennDOT ultimately found a low cost, environmentally sensitive solution that accommodates current and future traffic demands.
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Abundant professional development opportunities are available to further your skills and abilities through a comprehensive conference schedule and expansive networking opportunities.
The 2014 ASHE National Conference is heading to Bismarck, North Dakota, from June 11-15, 2014. The goal of the conference is to ensure attendees receive the best educational, networking and activity oriented opportunities.

“We are honored and proud to showcase our beautiful state for all conference attendees and hope to provide memorable experiences with several activities and professional functions,” Sarah BaeHurst, 2014 ASHE National Conference committee co-chair, recently announced.

North Dakota’s rich culture and heritage, diverse scenery and unique experiences will be showcased throughout the conference. The event will provide a unique and authentic North Dakotan experience with planned outings to Fort Mandan, Theodore Roosevelt National Park and Medora, ND.

While visiting Fort Mandan, attendees will step back in time to when Meriwether Lewis and William Clark first explored the Dakotas. The historic site is located along the Missouri River and was home to the Lewis and Clark Expedition during the winter months of 1804-1805. Visitors can tour the full-sized furnished replica of Fort Mandan.

Theodore Roosevelt National Park is an untouched area of nature resting in the North Dakota Badlands. Visitors can see wildlife in natural habitats. Medora is also home to the world-class Medora Musical set against a backdrop of the Badlands. The high energy, western-style musical is filled with family entertainment. The musical is dedicated to the legacy of America’s 26th President, Theodore Roosevelt. In addition, Medora is home to Bully Pulpit, a golf course attracting golfers from around the world and offering scenic views at every tee.

Abundant professional development opportunities are available to further skills and abilities through a comprehensive conference schedule and expansive networking opportunities. “Our goal is to provide ASHE members with opportunities to expand their social network and capitalize on the full potential of the conference,” BaeHurst said.

For more information on the conference agenda, sponsorship opportunities, and to register for the 2014 ASHE National Conference, visit http://2014conference.ashe.pro/.
For decades, Laskin Road has served as an unofficial gateway to the oceanfront of Virginia Beach, VA. With the recent completion of the final phase of the Laskin Gateway project, the City has made it official by creating an inviting entrance to the resort area while providing much needed upgrades to the existing aging infrastructure.

The Laskin Gateway project dates back to 2008, when the Resort Area Strategic Action Plan was adopted by City Council. This plan provided a vision for the oceanfront resort area and a strategy for achievement. This vision included an overhead utility-free skyline, wide decorative sidewalks and streetscapes to create a “complete street” and a pedestrian friendly corridor. Over the past four years the Laskin Gateway implemented City Council’s vision and transformed the area with much needed road, streetscape and utility improvements along six blocks at the north end of the City’s Oceanfront resort strip. The City’s $40M infrastructure investment has already paved the way for a recently completed $72 million new private development of upscale retail, apartments, Class A office space and structured parking within just a single block.

To complete this project within the City Council mandated a four-year schedule, meet the schedule of the separate private development project, and minimize disruption to the summertime tourist season, work was divided into four distinct, but related, project phases.
The first phase of construction started the day after Labor Day 2009 and included sanitary sewer gravity and force mains, water mains, underground electric and communications duct bank and large diameter storm drain improvements along four blocks of Arctic Avenue and two blocks of 32nd Street. As underground improvements along 32nd Street wrapped up, Phase 2 commenced providing a long-term traffic detour for Laskin Road traffic during Phases 3 and 4, providing dual left turns from eastbound Laskin Road, and modifying or installing traffic signals at Laskin Road/Holly Road, 32nd Street/Holly Road and 32nd Street/Pacific Avenue.

With new utilities in place and traffic re-routed, Phase 3 began the day after Labor Day 2010. Phase 3 included significant streetscape improvements around the first block of private development within the Laskin Gateway corridor. Laskin Road was reduced from five-lanes to two-lanes providing additional space for on-street parking, planting strips, pedestrian and street lighting, and wider pedestrian accommodations. Bike racks, seating and trash receptacles were also added along the corridor. In addition to the infrastructure improvements, Phase 3 replaced the flexible pavement on four surrounding intersections and crosswalks with decorative concrete pavers. Phase 3 public infrastructure improvements were substantially complete by Memorial Day 2011, just in time for the adjacent private development to begin foundation work.

The fourth, final, and largest construction phase of the Laskin Gateway project kicked off in January 2012. Phase 4 included a new three-lane roadway connection from 32nd Street to Laskin Road to mirror 30th Street to the south. The new 32nd Street/ Laskin Road/30th Street intersection was designed and constructed as the City's first modern roundabout, featuring a single circulatory lane and bypass lanes from 30th Street and 32nd Street to Laskin Road. Phase 4 also included significant structural improvements including a new 200-foot long bridge along adjacent, flood-prone Pinewood Rd, a pile-supported box culvert extension, a 100-foot long cantilevered sheet pile retaining wall and a new 350-foot long waterfront bulkhead bordering a newly created gateway park. Utility improvements in Phase 4 included water and sewer upgrades and additional electric and communications duct bank, allowing the remaining overhead lines within the project area to be relocated underground. Streetscape improvements also included patterned concrete multiuse paths and sidewalks, enhanced street and pedestrian lighting, brick paver crosswalks, landscaping, and additional bike racks and park benches.

All told, the Laskin Gateway project constructed or reconstructed four miles of urban roadway, provided over 1,100 feet of new multi-use paths and sidewalks, and built a new waterfront gateway park. From a utility standpoint, the project provided over 3,700 linear feet of new sanitary sewer gravity and force mains, 1,800 linear feet of new water mains, 2,800 linear feet of large diameter (up to 60") storm drain and a staggering 18,100 linear feet of underground electric and communications duct bank within just six city blocks.

The project implemented a number of sustainable technologies throughout design and construction. The City used this project as a pilot program for new LED street and pedestrian lighting, which have since become the standard for the oceanfront resort area providing energy savings and a crisp, white light.

To facilitate the healthy growth of trees and other plants in this urban setting and reduce the probability of sidewalk cracking/uplift due to tree roots, all planting beds and tree pits within the project area were backfilled with an urban planting media, while the area beneath the sidewalks adjacent to the tree pits were backfilled with structural soil. The urban planting media and structural soil both consist of an expanded slate aggregate and a sandy, clay loam which retains moisture and provides a path for root growth. The London Plane trees that were planted within these areas have thrived under the harsh urban and salt spray environments, maturing from a two-inch caliper to over four inches in just two years.

For storm water management, the Phase 4 project implemented a combination hydrodynamic separator and detention/ infiltration chambers which serve to remove the trash and debris and impound and infiltrate the “first flush”, or the first half-inch of runoff from the project area.

To cap off the project, the Public Art Virginia Beach Foundation installed a 35-foot tall metal sculpture known as the “Wave” within the roundabout’s central island. The 15,000-pound sculpture sits in a shallow pool of water, cascading over the edge and is illuminated by a slow dance of varying, colored LED lights. The sculpture was dedicated in a ceremony on October 12, 2013, for the City’s 50th birthday celebration, and marking the anniversary of the merger between the resort city of Virginia Beach and the larger suburb of Princess Anne County.
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Menoher Boulevard (S.R. 271) is the main arterial roadway connecting the City of Johnstown with Westmont Borough in Cambria County, Pennsylvania. The roadway was originally constructed by the Pennsylvania Department of Transportation (PennDOT) in the 1940’s as a major improvement project to connect Johnstown with Westmont Borough and Grand View Cemetery, one of the largest and most historic cemeteries in the state of Pennsylvania. Construction of Menoher Blvd. created an alternative route to climb the 460 vertical feet for travelers coming from Johnstown to Westmont, as opposed to traveling the steep carriage road that switch-backed up Yoder Hill. Many local residents still refer to this section of Menoher Blvd as the “Easy Grade Highway.”

Given construction methods of the period, and understanding of rock slope stability performance, the 170-foot high cut slope was originally constructed nearly vertical by means of mass excavation and blasting. Over time, differential weathering between the rock units resulted in several rockfall events, creating hazards to the public and adjacent facilities along this 2,000 foot long section of roadway. In 2010 PennDOT began planning a major rock slope stabilization project that would include intersection and signal improvements.

Gannett Fleming, Inc. (GFI) was retained to evaluate the nature of failures occurring in the rock slope and the effectiveness of existing rockfall mitigation measures, make recommendations for stabilizing the slope, and prepare the necessary construction bid documents. It was determined that the existing rockfall protection had been compromised beyond repair and a complete stabilization plan was warranted. Given the variable nature of the rock comprising the slope and predominant discontinuity orientations, GFI developed a mitigation scheme of excavation, rock scaling, rock bolting, high tensile steel wire mesh installation, and shotcrete. The project was awarded in September 2012 to the contractor, Joseph B. Fay Company, for a bid amount of approximately $5.5 M. Rock slope construction started in June 2013.

An accelerated schedule was required to reduce the duration of the detour and impact to the travelling public and several special events in the area. Over the course of four months, the rock slope was cleared with loose rock blocks removed, over 900 rock anchors were installed, along with 30,000 square yards of high tensile wire slope drape and 1,000 lineal feet of new rockfall barrier. The signal improvements and intersection reconstruction were completed simultaneously with the rock slope stabilization. The roadway was milled and re-paved with approximately 10,000 square yards of asphalt material and 3400 lineal feet of reset guide rail following completion of the stabilization.

The project was completed in October, with the detour removed and the road reopened to the public October 3, 2013. Clear communication and coordination between the owner, designer and contractor resulted in the project’s timely delivery.

Slope Stabilization of Menoher Boulevard
Johnstown, PA (Southwest Pennsylvania)
Matthew Morris (Gannett Fleming), Jeffrey Chubb (Gannett Fleming) and Kristen Swan (PennDOT, District 9-0)
Winter 2014 American Society of Highway Engineers

ASHE Clearfield Section Tours Site of Second PennDOT District 2 GRS-IBS Project

Summer of 2013 saw the second Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS) project for PennDOT District 2. (PennDOT District 2 covers a nine county area in north central Pennsylvania.) The District’s 2011 success in Huston Township is not far from the 2013 location. Both sites are in Clearfield County.

As it did in 2011, District 2 Municipal Services played a large role in this second project, located over Bliss Run in Sandy Township. The GRS-IBS is an Every Day Counts initiative by the Federal Highway Administration to promote new technologies in bridge and highway construction.

A GRS-IBS bridge consists of an 18” thick layer of compacted stone wrapped in Geotextile as the footing, with alternating layers of 8” thick compacted stone and Geotextile placed behind concrete masonry units. These components comprise an integrated bridge abutment and approach, thus eliminating the “bump” commonly experienced at the end of bridges.

The system can utilize any structure including steel, concrete or timber beams. The deck is then placed on the GRS-IBS abutments. Paved approaches, appropriate safety features and properly designed scour protection complete the project. These bridges are on roads with up to 2,500 vehicles per day and the longest span to date is 130 feet.

Members of the ASHE Clearfield Section visited the District 2 site on September 19 and had a tour, presentation, and Q & A with District 2’s Municipal Services Supervisor, Randy Albert. Albert explained the process, shared a wide variety of pictures, and offered samples of materials used in the building of the bridge.

Albert explained that the project was not without challenges. In late June, the greater DuBois area was hit with torrential rain and experienced serious flooding on roadways and across a variety of projects. Bliss Run was at least four feet above normal levels during this time. Three to four layers of exposed GRS course were damaged setting work progress back three to four weeks. There was no damage to GRS courses below stream level.

Total construction time for the Sandy Township/Bliss Run Bridge was 60 days, including the flooding setback, from the beginning of the excavation to the placing of guiderail, with a cost of $200,000 – a good bit less than the cost of comparable structures. Construction was done by the Sandy Township work force, with technical expertise provided by District 2’s Municipal Services staff.

ASHE Clearfield was not the first group to get an up-close look at the project. About a month before the ASHE tour, FHWA and PennDOT partnered to hold a Local Bridge Showcase to allow others to see this application in the field. The showcase included a one-hour overview presentation, questions and answers, and a field trip to the Bliss Run site. Showcase attendees included staff from other PennDOT districts, staff from municipalities throughout the region, and staff from some of our planning partners.

District 2 is very proud of our Municipal Services Unit. Led by Randy Albert, PennDOT District 2’s Municipal Service Unit has taken the lead in helping municipalities use this technology to stretch tax payer dollars while providing safe, economical bridges to the traveling public.
As the Wheel Turns

Dewberry, a privately held professional services firm, has promoted J. Ross Burhouse, PE, to associate in the Fairfax, Virginia, office. Burhouse has more than 15 years of experience as a structural engineer with a focus in the design and analysis of highway bridges and structures. He has engineered bridge structures for both highway and rail projects, where his responsibilities included leading the design of steel plate girder and prestressed concrete beam bridges, and working closely with the contractor on several design-build projects. Burhouse earned his bachelor’s and master’s degrees in civil engineering from Princeton University and the University of Maryland, respectively. He is a member of the American Society of Civil Engineers, and is a licensed professional engineer in the state of Virginia.

Dave Hieber, PE, also of Dewberry, has been promoted to associate in the Fairfax office. He has 12 years of experience in the analysis, design, management, and preparation of highway bridges, pedestrian bridges, box culverts, retaining walls, and other associated highway structures. Hieber is familiar with both design-bid-build and design-build project delivery and has worked on a range of highway projects, including new structures, replacement structures, and the widening of existing structures. Hieber holds both bachelor’s and master’s degrees in civil engineering from Virginia Tech and the University of Washington, respectively. He is a member of the American Concrete Institute, the American Society of Highway Engineers, and the American Council of Engineering Companies of Metropolitan Washington.
Does your project include water, sewer, storm, electric, and/or communications infrastructure? Have you ever had a project delayed due to utility coordination issues as a result of unforeseen as-found field conditions? Have you experienced limited space for open trench cuts? Is safe shoring of deep excavations a challenge?

Facility owners expect the most cost effective solutions when constructing or rehabilitating their infrastructure. Several trenchless technology solutions are available today that can provide a specific need and that minimizes or avoids the challenges listed above without breaking the budget. Whether you are a roadway or utility owner evaluating construction methods for underground utility installation, relocation, or rehabilitation, trenchless technology methods should be considered on every project.

Trenchless technologies, while still evolving, are permanently altering the construction industry. Let’s look at Horizontal Directional Drilling (HDD) as an example. With advancements in efficiency and savings realized over the past 20 years, communications companies have come to predominately use HDD as their preferred installation method. Municipal water/sewer departments, communication companies and public utilities have been including trenchless technologies in their budgets as significant engineering/maintenance tools.

Consultants, contractors and utility owners should educate themselves on the wide variety of trenchless methods available (and the pros and cons of each) in order to make sound decisions that are the right fit for their particular project. The following is a listing of the types of innovative techniques utilized today.

**Trenchless Technology Methods:**

**New Installation/ Relocation**
- *Horizontal directional drilling (HDD)*
- *Horizontal auger boring*
- *Micro tunneling*
- *Pipe ramming*
- *Pilot tube micro tunneling*
- *Pipe/box jacking*
- *Utility tunneling using Tunnel Boring Machines (TBM)*

**Repair/ Rehabilitation**
- *Sewer pipe bursting*
- *Water main pipe bursting*
- *Swage lining*
- *Cured-in-place-pipe method (CIPP)*
- *Thermoformed pipe*
- *Shot Crete/ Gunite coatings*
- *Cementitious linings*
- *Chemical/Polymer grouting*
- *Slip lining*
What is different today?

Historically, roadway projects were performed by general contractors under the traditional Design-Bid-Build method. Only specialty contractors had knowledge or expertise concerning the wide capabilities of trenchless technology. Over the past decade, more project owners have turned to contracting under the Design-Build (D-B) or Construction Management at Risk (CM@Risk) method with the purpose of maximizing the use of their project dollars. This has changed the landscape drastically for the roadway and utility contracting community as more risk (design and schedule) is being placed on the contractor team. With the responsibility for design and functional utility implementation being placed on the D-B team, even more education and evaluation of alternatives is necessary to insure a quality project.

When correctly applied, trenchless technology solutions can result in cost savings, schedule improvement, and an improved customer experience. Like any good engineering practice, the evaluation and decision process needs to be thorough. The field information needed to evaluate the benefit of a trenchless solution can be less than normally required to choose and design an open-cut solution, further speeding up the project design process.

Specific project/scope evaluation factors and/or decision criteria for potential trenchless technology applications could include:

- Space limitations surrounding the project (urban environment vs. open rural terrain)
- Waterway crossings
- Environmental considerations
- Utility system capacity upgrades
- Materials quality of existing infrastructure
- Real estate availability
- Contracting practices/Project delivery methods
- Potential for unknown subsurface conflicts
- Schedule considerations/incentives for early completion
- Cost comparison of trenchless technology methods/Budget consideration
- Local/Regional contractor capabilities
- Number of stakeholders including customer/public impacts
- Stakeholders risk tolerance
- Distances to nearby utilities/collateral damage potential
- Desired depths of new crossings or utility separation requirements
- Existing soil characteristics/geotechnical information availability
- Design parameters/requirements of roadway and utility owners
- Water table elevations/dewatering considerations

Are you up for the challenge of evaluating trenchless technology methods and possibly saving time and money on your next project?

An upcoming issue of the SCANNER will contain Part 2 which will include examples of the successful use of trenchless applications and how the overall project stakeholders benefitted.
# ASHE Profile

The SCANNER is published quarterly by the American Society of Highway Engineers and delivered to over 6,000 readers nationwide.

- 13% are State D.O.T. Employees
- 69% are Engineering Consultants
- 6% are Contractors
- 12% are Related Professions
- 55% of the membership has a professional status

# SCANNEr Correspondence

John L. Hetrick, P.E.
2088 Hood School Road
Indiana, PA 15701
Home: (724) 349-3852

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**Signature:**

**Date:**

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*Consultants, contractors & suppliers*

$ 200 annually. Link your company to the ASHE website.

Revised November 2013

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- Ads are printed in color.

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History
The American Society of Highway Engineers (ASHE) came about as a result of the enormous growth of the highway industry in the 20th century, along with the implementation of the National System of Interstate and Defense Highways Act of 1956. With support from every level of our industry, the Society was established in 1958 to meet the rapidly growing demands of the highway system. Incorporated in Harrisburg, Pennsylvania, our first Chartered Section began with a small group of dedicated people from the Pennsylvania Department of Highways, along with Harrisburg area contractors, material suppliers and consulting engineers.

Mission
To 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.

Vision
ASHE is working to become a nationally recognized forum for the highway industry by:
— Increasing ASHE visibility
— Promoting careers in the highway industry
— Increasing and expanding membership
— Balancing membership diversity
— Providing value to members
— Maintaining the values of ASHE

Values
Diversity: We value, respect and include people from all sectors of the highway industry.
Innovation: We encourage innovation in the highway industry by providing educational opportunities and participating in technology transfer.
Integrity: We conduct ourselves responsibly, ethically and honestly.
Fellowship: We value the opportunity to interact with our members and all partners in the highway industry.
Quality: We strive for the highest quality in our membership services and partner relationships.

Administration
Our National Board of Directors and Region and Section officers represent contractors, consulting engineers, government agencies, material suppliers, utility companies and other highway industry-related people. Also, several college Student Chapters are affiliated with Sections.

What can membership in ASHE do for you?
• ASHE provides you with opportunities to network with a broad number of highway industry professionals.
• You’ll receive the SCANNER, our quarterly newsletter that features technical articles along with ASHE National, Region and Section news.
• You can attend the ASHE National Conference that provides abundant sessions for updating technical expertise and obtaining CEUs and PDHs, along with networking and socializing.
• You’ll be a part of the most broad-based, inclusive organization for people involved in the highway industry.

Membership
Presently, ASHE membership numbers in the thousands in numerous states. Become a part of the highway industry’s premier networking organization. Your membership in ASHE will further strengthen our efforts to focus on issues that affect people in the highway industry.

Become a Member or Start a Section
Visit our website: www.highwayengineers.org
Name ___________________________________________ Date _______________________

(first) (middle) (last)

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Phone ___________________________ E-Mail ________________________________ 

Fax ______________________________ 

YOUR EMPLOYER:

Company Name __________________________________ Job Title ________________________ 

Street ___________________________________________ City __________________________ 

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Please send my American Society of Highway Engineers correspondence to my [ ] Residence    [ ] Work Place 

EDUCATIONAL BACKGROUND:

High School:

High School __________________________________ Graduation Date (m / y) ________________ 

Course ________________________________________ 

Undergraduate Degree:

College / University ______________________________ 

Major _________________________________________ Graduation Date (m / y) ________________ 

Graduate Degree:

College / University ______________________________ 

Major _________________________________________ Graduation Date (m / y) ________________ 

PROFESSIONAL LICENSURE:

[ ] Registered Engineer [ ] Land Surveyor-in-Training [ ] Not Licensed 

[ ] Registered Land Surveyor [ ] Engineer-in-Training [ ] Other ______________________________ 

Primary State: __________________________ Registration No.: __________________________ Certification Date: __________________________
MEMBERSHIP APPLICATION (continued)

Total Years Experience in the Highway Industry (briefly describe) ____________________________________________________________

__________________________________________________________

Work Sector (check one):

DOT _____ City _____ County _____ Federal _____ Consultant _____ Contractor _____ Supplier _____ Other (explain) __________________________

Work Specialty (check one):

Design _____ Construction _____ Inspection _____ Survey _____ CADD _____ Maintenance _____ Other (explain) __________________________

If accepted, I will abide by the Constitution, By-Laws and Code of Ethics of American Society of Highway Engineers

Signature __________________________ Date __________________________

FOR USE BY SECTION:

APPLICATION FOR:  ☐ ADMISSION  ☐ TRANSFER

Received by Section __________________________

Action of Membership Committee __________________________

Action of Board of Directors __________________________

Sponsoring Member __________________________

(Signature, do not print)

Above signatures of Membership Committee, at least two Directors and the Sponsoring Member, indicate that the Applicant has been evaluated and experience as indicated on the front of this application has been verified and all agree with admission to membership.

FOR USE BY NATIONAL SOCIETY

Approved __________________________ Date __________________________

Initiation Fee Received and Recorded __________________________

No Fee for Transfer __________________________

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Delaware Valley ............................................. 402
East Penn ....................................................... 126
First State .................................................... 119
Franklin ......................................................... 153
Harrisburg ..................................................... 361
Long Island ................................................... 41
Mid-Allegheny ............................................... 107
New York Metro .............................................. 131
North Central New Jersey ......................... 165
North East Penn ........................................... 129
Pittsburgh ..................................................... 510
Southern New Jersey ................................. 199
Southwest Penn .......................................... 303
Williamsport .............................................. 158
Subtotal ...................................................... 3363

Mid Atlantic Region
Blue Ridge ..................................................... 69
Carolina Piedmont ........................................ 59
Carolina Triangle ......................................... 209
Chesapeake .................................................. 208
Greater Hampton Roads ............................ 128
North Central West Virginia .................... 34
Old Dominion ............................................. 88
Potomac ......................................................... 192
Subtotal ...................................................... 987

Southeast Region
Central Florida ............................................. 45
Georgia ......................................................... 351
Gold Coast .................................................... 7
Middle Tennessee ......................................... 164
Northeast Florida ....................................... 199
Tampa Bay .................................................. 92
Subtotal ...................................................... 858

Great Lakes Region
Central Ohio ................................................. 181
Circle City ....................................................... 50
Cuyahoga Valley ........................................... 117
Derby City ..................................................... 70
Lake Erie ...................................................... 125
Northwest Ohio .......................................... 38
Triko Valley .................................................. 115
Subtotal ...................................................... 696

North Central Region
Central Dakotah ........................................... 123
Subtotal ...................................................... 123

Rocky Mountain Region
Phoenix Sonoran ......................................... 116
Subtotal ...................................................... 116

At-Large Membership
At-Large ...................................................... 7
Subtotal ...................................................... 7

National Total .............................................. 6150
Professional Status ....................................... 55%
Government ............................................... 13%
Consultant .................................................. 69%
Contractor ................................................... 6%
Other ......................................................... 12%