ASHE SCANNER

Winter 2012

www.highwayengineers.org

This attractive, six-legged ellipseabout is the entryway to Merrick Park upscale lifestyle center in Coral Gables, Florida, just south of Miami. The site is highly constrained by buildings and the elevated Metrorail in the background. Note there are two circulating lanes on one side and one on the other. Geometrics and photo by Michael Wallwork.

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MISSION

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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President's Message

Calvin W. Leggett, PE
ASHE President 2011-2012

Happy New Year! After a tough 2011, I really hope 2012 brings brighter days for the transportation industry. I want to thank all the ASHE members I have met and with whom I have worked. Everyone has welcomed me and made my presidency rewarding and fun.

In August, the Executive Committee traveled to Bismarck, North Dakota, and met with the great folks who will head up the 2014 ASHE National Conference.

A large group of members and student members joined the Board at our October meeting in Wilmington, Delaware. Later that month, I joined First Vice President Frank O'Hare, and Treasurer Dave Jones, in Columbus, Ohio, for the OTEC conference (a great gathering of transpiration professionals from all over Ohio). I joined the Pittsburgh and Georgia Sections in November and December for special Section meetings.

Everywhere I go, even in these down times, ASHE members remain enthusiastic about the organization and the highway industry. One thing all ASHE members have in common is their passion for their profession and the belief that better roads are good for our nation's economy and its citizen's way of life. The more ASHE people I meet, the more I realize what a great organization this is.

Your Board continues to improve service to members and Sections. We continue to upgrade our website. If you have not recently visited www.highwaysengineers.org , check it out. It has updated information in attractive and user friendly formats. Soon every member will have access to their membership data through the website, and be able to change addresses and job information when necessary. This website will allow both Sections and National to automatically update their membership databases.

If your firm needs additional staff, take advantage of the ASHE partnership with The Fulcrum International (TFI) www.thefulcrumintl.com. TFI is a national website focused on job opportunities in our field. Job postings are included in the TFI e-newsletter and also routed to the various ASHE Sections for inclusion in their Section's website and/or newsletters. Searching for job openings is a free benefit to all ASHE members.

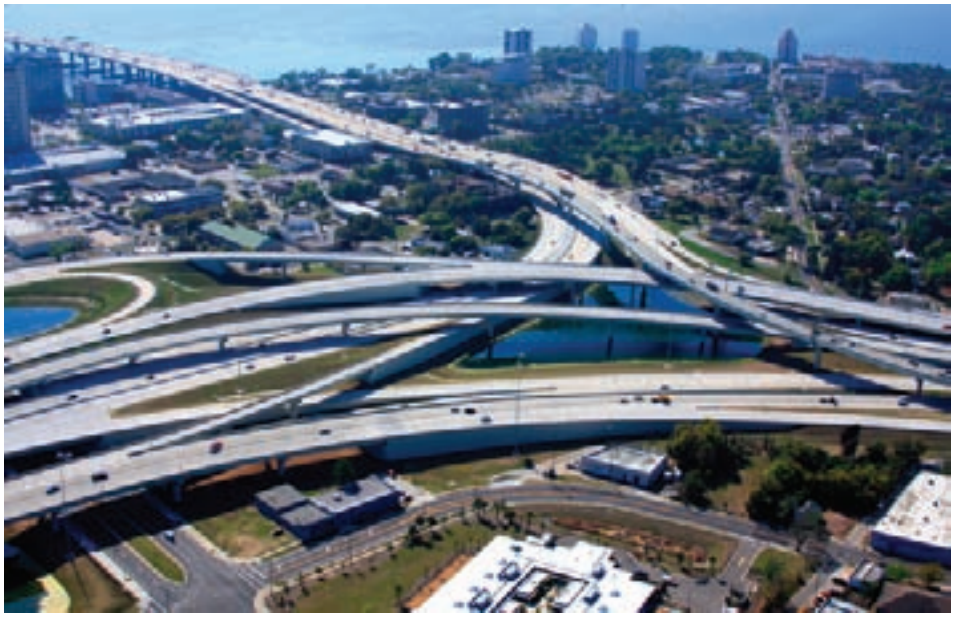
We are looking to improve communications and find better ways to serve the western part of the country. Marketing and at-large memberships for those people who do not have the industry numbers to form Sections are just a few of the major topics we will be addressing in the Strategic Plan update starting this January. We are looking at social media to promote and expand awareness of ASHE. While we are not going to join every new electronic fad that comes along, we will try to leverage media that will best serve our members and add value to our membership.

We acquired a new domain name, ashe.pro, which will go live in February. (highwayengineers.org will remain in existence and redirect to ashe.pro.) The .pro ending is a new suffix designed for professional organizations. For a small investment from National, we will be able to provide addresses for all Sections so that they do not need individual licenses. This will both provide better organization branding and be less expensive.

The Board will begin updating the Strategic Plan. The plan provides a guide for growth and organizational decisions, and is updated every three years. This year we will deal with how to maintain appropriate Regional representation as we transition to a nationwide organization, and how to best serve an expanding membership in the west. The Board has been thinking about on these and other issues for some time. More details on this new plan will be forthcoming over the next few months.

In these days of economic recession and partisan conflict over how to adequately fund transportation, it is easy to get discouraged about the future of our industry. However, if you look back at the 53 years of ASHE history you see many potholes and detours in our path to growth and the great highway system we have today. Early ASHE pioneers would be amazed and gratified by the Society and the highway system that exists in this country. My guess is those of you who are still around 53 years from now will remember the Recession of 2008 the same way earlier highway builders remembered the Great Depression, and look back at how the industry survived to prosper again. I am confident that the greatest days of ASHE are still in front of us, and that we have the skill, talent and passion to build that better future.

I want to remind everyone of the National Conference coming up in June at the Seven Springs Mountain Resort in Pennsylvania. You are guaranteed to have a great time if you join us. Remind your neighbors, friends, and especially your elected representatives of the value of a good highway system. Remember to be an ASHE billboard. Proudly display your pin, use an ASHE coffee mug at work, wear some article of ASHE clothing once a week. Help to spread the ASHE word to your colleagues. Together we can be a force for a better highway system and the improved economy and way of life it will bring. The Company Store, located on our website, is a great source of all kinds of ASHE branded items. ■



"When a project team works together to solve major challenges associated with constructing complex transportation projects, the results will have a direct benefit to the taxpayer and the traveling public." ~ Greg Nettuno, P.E., Vice President and GAI-Jacksonville Managing Officer.

THE BIG I

A ribbon cutting on September 17, 2010 marked a historic day for the Florida Department of Transportation (FDOT) District 2 and the City of Jacksonville, as the I-10/I-95 Interchange, also known as "The Big I," officially opened to the commuting public.

Originally constructed in the 1950s, the I-10/I-95 Interchange served as a three-legged interchange for two cross-town commuter expressways located just west of Jacksonville's expanding downtown area. In the 1980s, the Florida Department of Transportation began preliminary design and engineering studies for the first major capacity upgrade to the interchange since its original construction. As traffic volumes exploded, the interchange's numerous functional shortcomings came to light. Suggested reconstruction plans focused on adding capacity to the interstate mainline, as well as constructing a collector/distributor system to separate mainline interstate traffic from local traffic looking to enter and exit on local roadways within the interchange limits.

Construction of the new I-10/I-95 Interchange commenced in early 2005 with prime consultant GAI Consultants (CEI), Archer Western Contractors (contractor), and URS Corporation (engineer of record).

As the project proceeded, the Design and Construction team faced a unique combination of constraints, including:

- Tight right-of-way: The fully-developed urban area adjacent to the existing interchange confined the reconstruction and expansion to the existing right-of-way.
- High traffic volume within an urban setting: High traffic volumes restricted lane closures to a seven-hour operations window, with much of the critical work shifting to nighttime operations.

"I" continued p. 7

2012
ASHE National Conference
Seven Springs Mountain Resort

Life is a Highway, and all highways will eventually lead to the beautiful Seven Springs Mountain Resort. Located in Champion Pennsylvania, Seven Springs is nestled high in the scenic Laurel Highlands of Western Pennsylvania. The Southwest Penn Section is honored to host your **2012 ASHE National Conference** at Seven Springs Mountain Resort June 7th thru June 10th.

The 2012 Conference Committee is committed to providing our ASHE members and families a rewarding experience for people of all ages and interests. The 2012 Conference will provide numerous opportunities to both meet and reunite with colleagues from across the nation during scheduled events such as the Icebreaker Reception, featuring a delicious barbeque, a strolling magician and live music. The 2012 Opening Session and Annual Business Meeting will focus our collective vision for the highway industry and include timely messages from keynote speakers. During the Past Presidents Luncheon we will share a great meal, recognize our ASHE leadership and be addressed by our country's very first president. Friday night will offer a world-class seafood buffet followed by Casino Night. The President's Reception and Annual Gala Banquet will include live music from the Brass Knuckles Band and entertainment by hypnotist, Erick Känd. You won't want to miss these great opportunities to network, relax and be entertained with your friends and family.

The 2012 Conference also offers a very strong technical program committed to professional development featuring current and state-of-the-art highway topics. Owner perspectives and needs, materials technologies, research trends, the latest design advances, and contractor's insights will be featured in a host of presentations that are sure to positively impact our ability to serve our country's infrastructure needs.

The 2012 conference is not *all about business* and will be an enjoyable experience for our members and their families. Opportunities abound to step away, relax and take advantage of the many family amenities Seven Springs Mountain Resort has to offer. We encourage you to visit the resort website at www.7springs.com to learn more of its beautiful setting and the wealth of opportunities available for the entire family. By the way, Seven Springs is a family friendly resort, so the kids will never have a dull moment!! ASHE sponsored spouse programs will include outings to the Stone Villa Winery, Frank Lloyd Wright's Fallingwater, and the Flight 93 Memorial. Golfers joining the ASHE outing Saturday morning will enjoy the dramatic beauty of Seven Spring's top-rated course, flowing seamlessly through the mountain terrain. We are sure the 2012 Conference experience will provide your entire family lasting and enjoyable memories from the beautiful Laurel Highlands of Western Pennsylvania.

Life is a Highway and we hope your 'highway' will lead you to the 2012 National Conference at Seven Springs Mountain Resort! For more information and updates, please see the 2012 ASHE Conference website at www.ASHE2012.org

ASHE Life is a Highway
2012 ASHE National Conference

"I" continued from p. 5

- Complexity and diversity of components: Major components included full reconstruction of two intersecting Interstates and the addition of a collector/distributor system with 17 bridges, 21 ramps, 25 lane miles of new pavement, 10 major phases, three flyover ramps, 40 overhead truss/cantilever signs, ITS system relocation, and architectural/site renovations to the FDOT Regional Office.
- Environmental compliance challenges: The project's new drainage system discharged directly into two highly sensitive and highly visible downtown waterways, including the St. Johns River. A large portion of the project was also located on a previously identified Superfund site.
- Stakeholder Scrutiny: The I-10/I-95 Interchange takes center stage in downtown Jacksonville, with its rush-hour conditions leading every morning radio traffic report. The local newspaper is located one quarter mile from the interchange, and most downtown employees use the interchange to access their offices. Residential neighborhoods and local businesses surround the interchange on all sides, including the artsy Five Points area. Furthermore, the FDOT Jacksonville Regional office is located adjacent to the project right-of-way and was directly impacted by construction.

The construction team's project approach focused on a proactive traffic maintenance program, a comprehensive public information program, and full cooperation between FDOT and the Design and Construction Team. After five and a half years, the "Big I" was completed six months ahead of schedule, at a total cost of $157 million. The American Association of State Highway and Transportation Officials (AASHTO) honored the I-10/I-95 Interchange as the Grand Prize winner in the America's Transportation Awards competition. ■

Big I Awards

AASHTO	*2011 America's Best Transportation Project*
AASHTO	*2011 America's Transportation Awards: On Time, Medium Project*
FTBA	*2011 Best in Construction: Interchange Award*
ACI	*First Coast Chapter Award: Significant Concrete Structure*

ASHE Operations Manual Updates

Shirley Stuttler, Chair

Sections are reminded to utilize the various documents contained in the Operations Manual that may be found on the National Website www.highwayengineers.org under the dropdown link.

Revisions were made to the following documents during this past quarter:

2011-2012 Section Officers List
2011-2012 National-Regional Directors List
2011-2012 National Board Officers List
2011-2012 Region Officers List
National Conference Guidelines - Basic (Templates/Examples Remain to be Updated)
SCANNER Guidelines
SCANNER Advertising Rates and Contact
Young Member of the Year Award
Member of the Year Award
Life Time Achievement (New Award)
Robert E. Pearson/Person of the Year Award
Program Summaries
National Display Booth Guidelines
Region Exposure Fund
Region-Section Grant Fund

If you need assistance in locating documents that are part of the ASHE Operations Manual, please contact Shirley at sstuttler@hughes.net.

Mile Markers

Tampa Bay Section

Tampa Bay Transportation Supersession

Tom White, PE and Leigh Lilla, EI

The annual Transportation Supersession is hosted near Tampa Bay by a coalition of engineering-related professional societies including ASCE, the Florida Engineering Society (Hillsborough & Pinellas Chapters), ITS, WTS, Tampa Bay ITE and ASHE Tampa Bay. The Transportation Supersession highlights transportation projects, regional and local transportation needs, and transportation initiatives.

The year 2011marked the 22nd Annual Supersession with the theme of "Toward Zero Deaths – A National Strategy on Highway Safety." Proceeds from the event are used to support outreach programs including scholarships for high school and college students, MATHCOUNTS, middle school math competition programs and promotion of the engineering profession education.

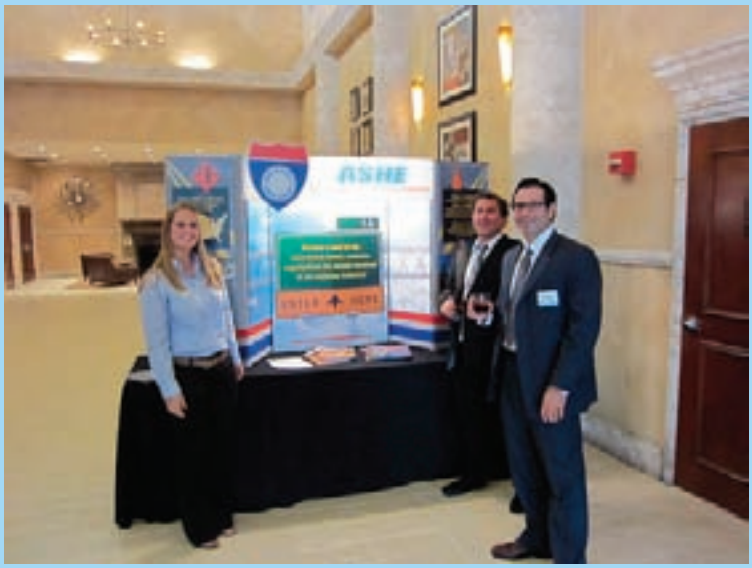
Taking place on September 29th, 2011, this year's Supersession was structured for a welcome reception with exhibitors, followed by a dinner presentation. ASHE Tampa Bay participated on the steering committee and as an exhibitor in order to draw attention to the organization and meet potential new members. ASHE Tampa Bay's exhibit was successful as several applications were distributed and names were added to the local mailing list. The extended reception hour was welcomed by the Supersession participants as it allowed ample time to get to know fellow professionals in a social setting.

Dinner presentations were made following the reception by Peter Yauch, PE, Director of Transportation and Stormwater for Pinellas County, Florida and Brian Blanchard, PE, Florida DOT Assistant Secretary for Engineering and Operations. The presentations focused on the national highway safety strategy.

With roughly 35,000 highway fatalities annually, "Towards Zero Deaths" seeks to educate and draw attention to a national data-driven strategy that includes the key emphasis areas of projection of future need, promising countermeasures and expected improvement. The strategy is focused on identifying and creating opportunities for highway safety. The national strategy has two tiers: Cultural Change and Building the Foundation of Safety.

More information on the Strategic Highway Safety Plan, as published by AASHTO and NCHRP, can be found online at http://safety.transportation.org/.

The Transportation Supersession had over 360 participants from many different facets of the transportation engineering industry. The high number of registrants is a testament to the hard work and cooperation of the steering committee. The event ran very smoothly and is considered a great success to all involved, based on feedback received. ■



HISTORIC DISTRICT PROJECT

LAMBERTVILLE, NJ

challenges to engineering, planning, and environmental skills

Gary Bellotti, Vice President of McCormick Taylor

Difficult terrain coupled with sensitive historic and environmental resources called for a creative approach to much-needed drainage improvements along Route 29 near the City of Lambertville, NJ. This stretch of scenic roadway meanders next to the Delaware and Raritan (D&R) Canal, paralleling PA Route 32 to New Hope, PA, not far from the historic Washington's Crossing State Park.

The entire project area is environmentally sensitive, characterized by highly visible historic, archaeological, parkland, and ecological resources, and is located within the D&R Canal Historic District, which is listed in both the National and New Jersey Registers of Historic Places. Adding to the charm and historical feel of the locale are large remnants of the Goat Hill Quarry, as well as visible remnants of several historic structures. According to legend, George Washington assessed battle conditions from vantage points atop Goat Hill during the Revolutionary War.

Equally historic, perhaps, was the existing drainage system, which was in poor structural condition and posed a threat to the trout-stocked Canal's water quality and regional water supply. It consisted of nine disconnected inlets with cross pipes beneath the road that discharged onto a narrow, steep embankment leading to the D&R Canal. Frequently clogged with debris, the stormwater system often caused flooding along Route 29. During the winter months this floodwater froze on surfaces in the form of black ice, and runoff from de-icing further compromised the quality of water entering the Canal. NJDOT requested that McCormick Taylor act as its authorized agent to monitor and inspect all the specialty stone work, coordinate

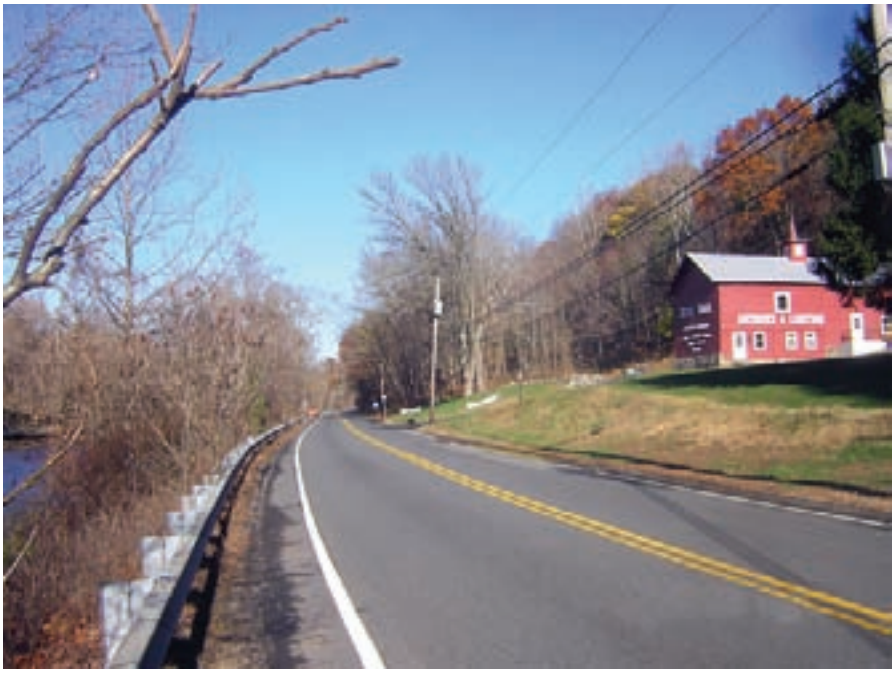
regulatory agency oversight, and assure environmental compliance.

Design and construction of the new stormwater system was challenging. The entire roadway is located upon, and the drainage system is situated within, a massive geological formation known as Goat Hill, a steep, boulder-laden diabase formation. Blasting was prohibited for fear of dislodging literally hundreds of massive surface boulders looming above the work area, and all this work had to be done by hand or small pneumatic hammer.

McCormick Taylor reconstructed the entire system, handling both roadway-derived stormwater and the much more substantial stormwater volumes draining from Goat Hill that discharge into the D&R Canal. All drainage components were replaced on the same location in order to minimize environmental impacts. One mile of longitudinal pipe with stormwater inlets was installed alongside Route 29 northbound, nine existing lateral cross pipes were replaced, and nine outfalls were reconstructed, all within the D&R Canal State Park.

Specific aesthetic treatments were required to obtain the numerous permit approvals and satisfy various stakeholder requirements. The reconstruction called for historically-compatible, decorative stone block veneers on all headwalls and outfall aprons. For these, a specific reddish-brown argillite block was installed, using a dyed mortar with a three-inch joint inset, to create the appearance of dry-laid stonework. Once these were completed, several retaining walls and surface revetments were reconstructed by hand, many using existing boulders that were moved by chain or strap hanging from an excavator shovel and positioned and coursed by hand.

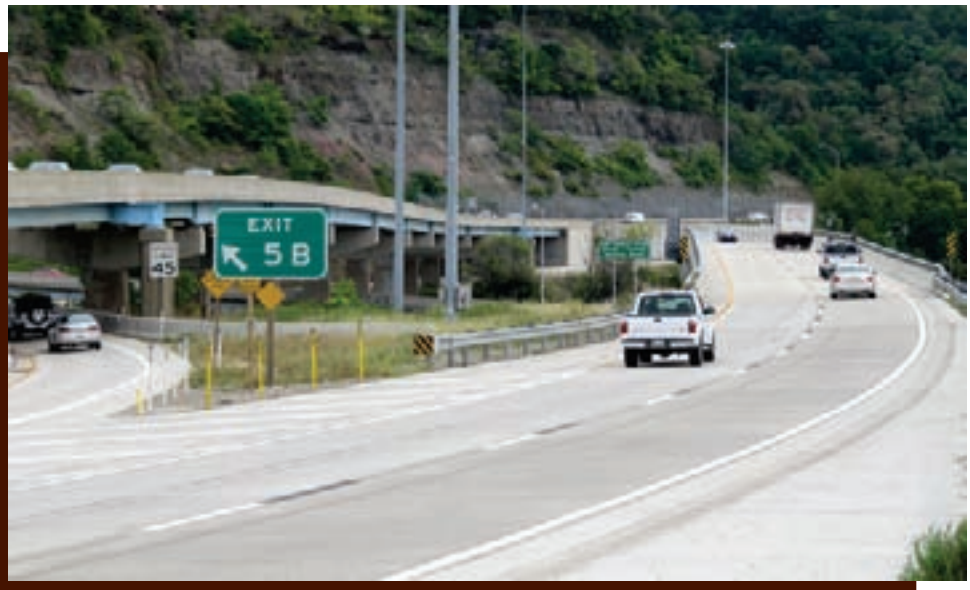
Many people, including agency regulators, had the opportunity to watch the headwall, outfall apron, and boulder wall construction from the recreational towpath directly across the Canal from these work areas. Given the steep, restrictive, boulder-laden work areas, passersby often stopped to watch the precarious work and cheered at its safe and successful completion. ■



Uncorking the Etna Interchange Bottleneck

Pittsburgh, Pennsylvania

Richard B. Kauffman, PE
SAI Consulting Engineers, Inc.



Background

Prior to reconstruction and improvements the Etna Interchange near Pittsburgh, Pennsylvania, was a bottleneck on S.R. 0028 (operating at a LOS F) as a result of northbound and southbound traffic transitioning from two lanes to one lane. Consequently, commuters traveling to and from downtown Pittsburgh, from the northern suburbs, and the Pennsylvania Turnpike endured rush hour traffic congestion. To rectify this situation, the Pennsylvania Department of Transportation required a long-term solution that not only added roadway capacity while maintaining traffic, but also addressed deficient structures throughout the interchange.

Project Description

SAI Consulting Engineers, Inc. provided the preliminary and final roadway and structure design for the S.R. 0028/S.R. 0008 Etna Interchange reconstruction project that comprised 12 multi-span bridges, five anchored soldier pile and lagging walls, and nine lane miles of roadway widening and reconstruction, including lengthening of acceleration/deceleration lanes to current design criteria. This was a major four-lane arterial interchange widening and reconstruction project with an overall construction cost of $94,300,000. Although it would have been more cost-effective to close this artery during construction, commuters would have been forced to use a long detour for a significant number of years. Consequently, the project was divided into five construction phases, in part for maintenance of traffic considerations and in part for funding considerations.

This project included phased-construction and use of existing roadways and temporary crossovers to maintain traffic as much as practical. As a result, traffic was only partially detoured, which minimized as much as possible the disruption to commuters.

Complexity

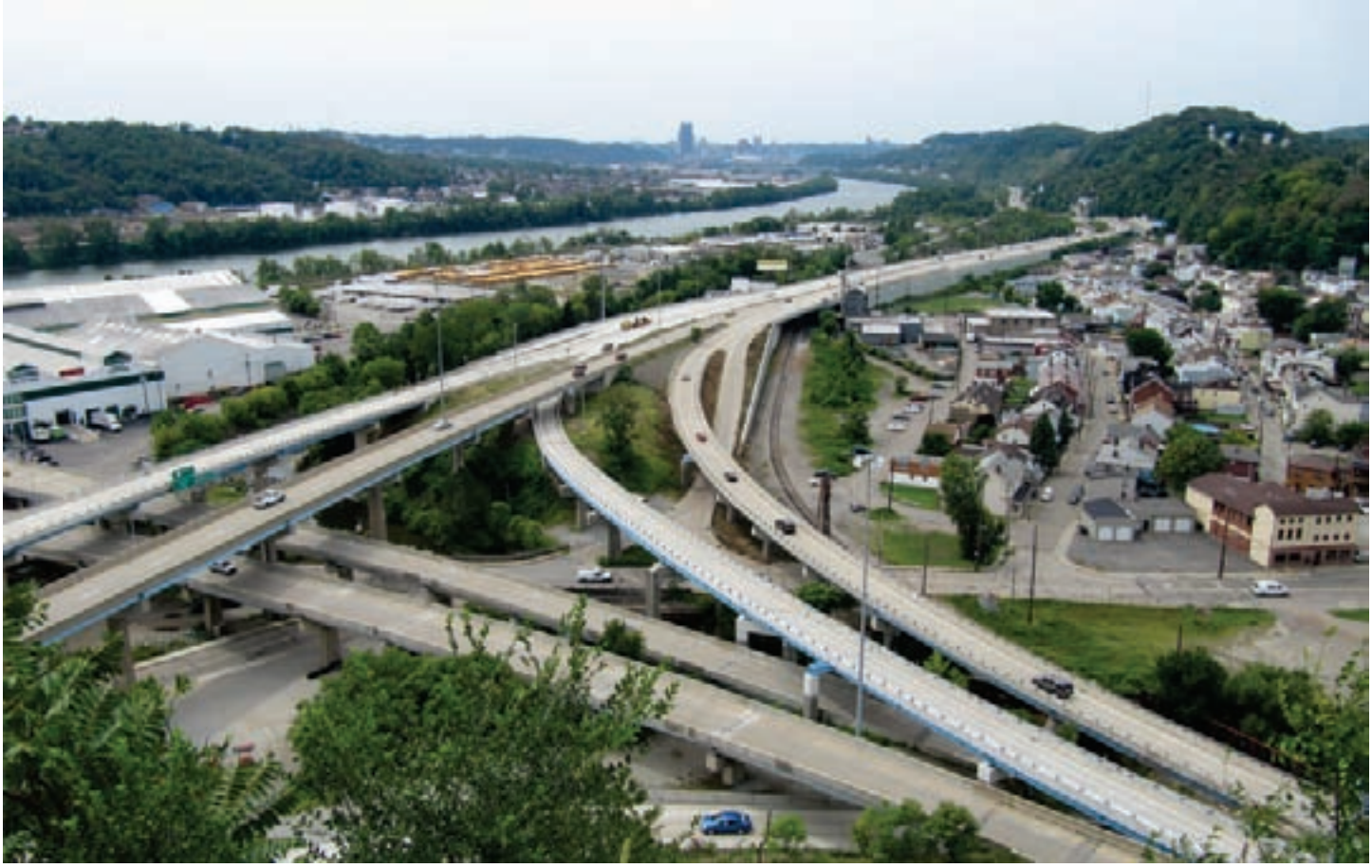
The project was a three-level interchange with a local roadway network overtopped by the RD Fleming Bridge and S.R. 0028 on the top level. S.R. 0028 was widened approximately 30' in each direction at the interchange. Built in five construction phases from 2000 to 2010, each phase had to be a standalone project. After completion, each phase needed to tie into the existing and proposed sections in order to reopen the roadway to uninterrupted traffic flow. The clearances, sight distances, grades, traffic control, and construction access were complex and needed to be carefully considered during design.

Originally built in the 1960s on steep fills, S.R. 0028 required top-down construction techniques for soldier-piles and anchor walls to accommodate the widening. Furthermore, the interchange was originally constructed over an old steel mill site and required evaluation for hazardous waste and the ability to construct new foundations. Because the area is slide-prone, consideration of this condition was given throughout design.

Outcome

SAI, in conjunction with PennDOT District 11-0, and all project partners, provided the motoring public completion to the plan, design, and reconstruction of the Etna Interchange. Ultimately, this project represents the uncorking of a major traffic "bottleneck" that was undertaken due to tremendous public need and realized through the teamwork of the Pennsylvania Department of Transportation and the entire design and construction team. Commuters traveling to and from Downtown Pittsburgh via the Etna Interchange can now make the journey in a safer and more expedient way than they could prior to the reconstruction of this vital transportation link. ■

Etna Interchange aerial view after phase 3 construction in 2006



Etna Interchange after final construction 2011

Riders on the Towpath Trail

Towpath Trail bridge over SR 59 in Downtown Akron

History of the Ohio-Erie Canal and the Cuyahoga Valley

Jim Swartz P.E.
President
ASHE Cuyahoga Valley Section

Ohio was granted statehood on March 1, 1803, becoming the 17th state to join the United States. The economy and population in Ohio began to grow after the National Road to Columbus was completed in 1833. In addition, a canal system was built to allow farmers and manufacturers to ship their goods to large cities in Ohio and elsewhere.

The most important canal was the Ohio – Erie Canal, under construction from 1825 to 1834, opened for operation in 1827. The canal started at Lake Erie near the mouth of the Cuyahoga River in Cleveland, and extended 35 miles south through the Cuyahoga Valley to the continental divide in Akron (Summit County). This northern section of the canal required 42 locks to raise the boats 395 feet from Lake Erie to Summit Feeder Lake. The canal then continued south along the Tuscarawas River for 112 miles and 30 locks to Dresden Junction, then 31miles and 30 locks to Licking Summit. The last 130 miles of the 308-mile long canal required 53 locks to complete the 431 foot drop from Summit Lake to the Ohio River at Portsmouth.

The canal gave its name to many of the towns along its route; some still carry a prefix of "canal" or "lock" or a suffix of "port". Even before the canal was completed, settlements attached themselves to this life-line. Slab towns sprung up to house the diggers and then grew into major canal ports. Industries grew as the villages grew. When mills powered by canal water needed barrels, a cooperage was established. Foundries made machinery, brickyards supplied building materials, and the people came. Before the canal was built, Ohio had a population of less than 600,000. By 1850 the population had grown to nearly two million. As many as 3,000 boats plied the Ohio – Erie Canal per year. By 1857 canal jobs employed 25,000 people. The canal brought a poverty-stricken young state from 13th position in population to third in less than one generation.

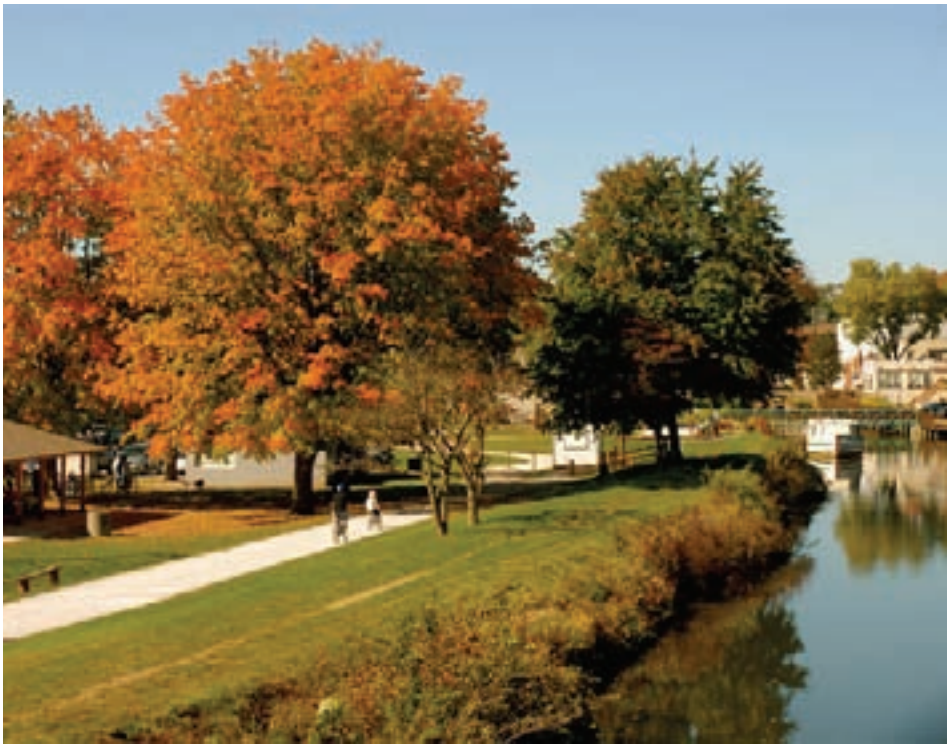
After the Civil War canal usage began a long decline as railroads were built and moved people and goods in a faster and more economical fashion. The Great Flood of 1913 destroyed a good portion of the canal and put it out of business, therefore putting an end to this important chapter of transportation growth in Ohio.

Over the last 99 years, since 1913, efforts continued to grow to preserve the beauty and history of the Cuyahoga Valley between Cleveland and Akron. On Dec 27, 1974, President Ford signed a bill establishing the Cuyahoga Valley National Recreation Area (later changed to the Cuyahoga Valley National Park, CVNP). Since the mid 1980's, the NPS has rehabilitated many prominent Park facilities including historic buildings, park headquarters and visitor's center, Environment Center and numerous Countryside Initiative farms starting in 2002.

In 1996 legislation passed, creating the Ohio & Erie Canalway, a 110 mile national heritage area from Cleveland to New Philadelphia that extends the Towpath trail and Cuyahoga Valley Scenic Railroad. The Canalway physically connects the CVNP to local parks and 40 communities along the route of the original Ohio – Erie Canal. Today the CVNP is recognized for its innovative management style, culture of partnership, and public engagement.

The 101-mile Towpath Trail (hike and bike path), mostly built on the old canal towpath, ties the present to the past of the Ohio – Erie Canal and the creation of the CVNP. Today more than 86 miles of the Towpath trail are complete with the goal to complete the remaining miles by 2020. Each year about 2 million people enjoy the benefits of the Cuyahoga Valley National Park, Cuyahoga Valley Scenic Railroad and the Towpath Trail.

The ASHE Cuyahoga Valley Section is proud to carry the same name in representing ASHE in this part of Ohio and being a part of the heritage and transportation industry. The next time you come through northeast Ohio, stop in downtown Akron at Lock 3 Park to see the canal and historic Civic Theater, the Pro Football Hall of Fame on I-77, and the National First Ladies' Library and Museum in Canton. Then stop by for some biking on the Towpath Trail. ■



Restored segment of the Ohio-Erie Canal, with canal boat replica and Towpath Trail

Towpath Trail from Lake Avenue

Fulfilling ASHE's Mission in a Roundabout Way

Ken Sides, PE

The mission of the American Society of Highway Engineers is 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.

Every network, even transportation networks, must have nodes where the network links connect. For roadway networks, these are the intersections. In the case of roadway networks, those nodes can be inefficient, deadly places. This article describes how the latest, most radical, innovation in intersections can help achieve a safe, efficient and sustainable highway system.

Modern roundabouts are compact, low-speed circular intersections with YIELD control at entry; the approaching vehicle must yield to the circulating vehicles, which have the right-of-way over approaching vehicles. Modern roundabouts have only a passing similarity to the old-style rotaries and traffic circles, which were big, fast, scary and dangerous.

Modern roundabouts are the new intersection configuration all over the world, even in the United States, which has built more than 2,000. To achieve the same density of roundabouts by population as France or Australia, the United States would have to build about 145,000 modern roundabouts. The City of Carmel, Indiana, has built about one roundabout per every thousand residents.

SAFETY - The Federal Highway Administration says modern roundabouts reduce fatalities by more than 90% compared to traditional intersections, a huge reduction in any field of endeavor, and reduce injuries by 76%. There are several reasons for this dramatic improvement in safety:

Fewer conflict points. These are locations in an intersection where vehicle paths cross. As long as the potential conflicts are resolved temporally—that is, the vehicles cross at different times—all is well. But as we know, far too often temporal resolution doesn't work: 2,210,000 crashes occurred at conventional intersections in 2009. A more elegant solution is to simply eliminate three-quarters of the vehicle/vehicle conflict points, and that is what the modern roundabout does.

No head-on or T-bone collisions. These are the two most lethal crash types, and by inherent design they are simply eliminated from modern roundabouts.

No Kill Zone. In a traditional intersection the deadliest crashes occur in the center of the intersection: the Kill Zone. 7,043 people died at conventional intersections in 2009, at a cost to society exceeding $42 billion. In place of costly tragedy, modern roundabouts fill this perilous space with a central island, often beautifully landscaped.

Low speeds. Because of design details such as horizontal deflection and negative super-elevation, modern roundabouts can effectively limit typical vehicle speeds to below 25 MPH or even below 20 MPH for urban one-lane roundabouts. At low speeds, events play out more slowly, giving drivers and pedestrians more time to perceive, think and react to avoid collisions. Because kinetic energy increases exponentially with velocity (KE=½mv2), crashes at even moderate speeds are much more severe than at low speeds. The crashes that do occur at modern roundabouts generally produce much less severe injuries.

Drivers are forced to slow down and pay attention. Drivers unconsciously take the green light as permission to traverse a signalized intersection without checking in every direction for potential threats, which in any case is often impractical at typical highway speeds. Approaching a roundabout, drivers' attention is attracted by the central island in the middle of the roadway and they are forced to slow down by the splitter island and channelization. As they arrive, drivers need only look about 30º to the left to check for (slowly approaching) traffic in the circulating lane(s). Compared to the complexity of a signalized intersection, roundabout decision-making is much simpler.

Pedestrian safety. Pedestrian/vehicle conflict points are reduced by two-thirds, compared to a conventional intersection. The low vehicle speeds are a boon to all intersection users, especially vulnerable ones. A pedestrian struck by a vehicle traveling only a moderate 40 MPH is 16 times more likely to die than if the vehicle were going 20 MPH or less.

"Roundabout" continued p. 27

Drivers often commit errors when they have to perform several highly complex tasks at the same time under extreme time pressure.

Speed reduces the visual field, restricts the peripheral vision, and limits the time available to receive and process information.

~AASHTO Green Book

This double-teardrop roundabout interchange on 126th Street is one of six similar roundabout interchanges along Keystone Parkway in Carmel, Indiana. The project included lowering Keystone parkway at the interchange. The two-span, continuous, composite, precast I-beam bridge features a cast-in-place concrete deck slab, as well as architectural aesthetic features such as decorative walls, colored and patterned concrete walks and ornamental railings. Personal injury crashes are down 78% since the new interchange opened in 2009. Design by American Structurepoint, Inc.

Looking northeast. These three roundabouts along Lee Rd by the overpass over US23 in Brighton, Michigan, were designed simultaneously by Mark T. Johnson, PE, of MTJ Engineering. The $6 million construction cost was completely funded by the new adjacent development on the east side. Google Map image at http://g.co/maps/b8sy3 . Photo courtesy of Livingston County.

This landscaped roundabout is sited in downtown Tampa between the Florida Aquarium (glass building on left) and the parking garage (behind camera) for the Tampa Port Authority (in the background, in front of the cruise ship). Note the trolley skirting the perimeter of the roundabout. Photo by Ken Sides.

Larimer Bridge Rehabilitation

The Larimer Bridge is a Pratt thru-truss that carries S.R. 0993 over Brush Creek in rural Westmoreland County, Pennsylvania. The 146', simple-span structure has a 42' clear roadway width and a 5' wide sidewalk supported by steel brackets cantilevering off of the west truss. Owned and maintained by the Pennsylvania Department of Transportation (PennDOT) Engineering District 12, the bridge was identified as a candidate for rehabilitation under the American Recovery and Reinvestment Act (ARRA) passed in February of 2009. PennDOT had to move quickly to have the project let by early summer in order to be eligible for the ARRA funds.

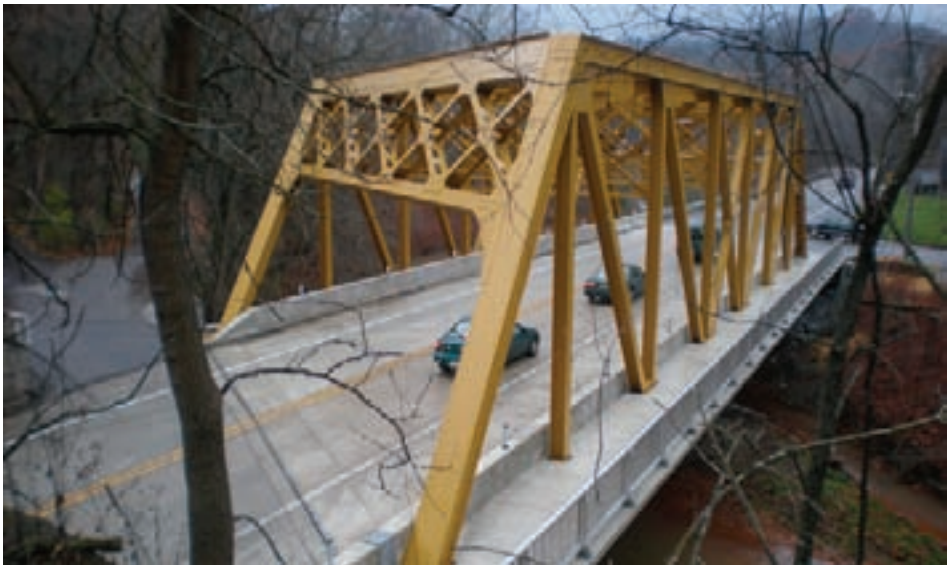
Project Challenges

Scheduling was the greatest challenge to project delivery. Once notice to proceed was received from PennDOT, the design team had just six weeks to complete design - from performing an inspection detailed enough for rehabilitation design through delivery of final PS&E package. The design team moved quickly to mobilize a team of inspectors comprised of design engineers certified in NBIS Inspections that would ultimately lead the design effort.

This proved valuable as the engineers were able to evaluate the problem areas and visualize repair details first hand. The team spent three days gathering the necessary information through photographs and measurements. The information would be used to assess the bridge's condition, perform live load rating calculations, and prepare construction design details for the necessary repairs.

Inspection Results

The design team reduced the inspection field notes to summarize inspection results and provide preliminary repair recommendations in a report to PennDOT. The bridge deck and floor system were found to be in the worst condition. The concrete deck with a bituminous overlay was severely spalled with holes completely through the deck in several locations. The steel stringers and floor beams supporting the deck were corroded with many of the stringers found to have extensive section loss. The truss and bracing members were in satisfactory condition. Coating breakdown and section loss was observed for some of the truss members; however, the results of the load rating calculations indicated the trusses had



sufficient capacity to carry the legal loads. While the bridge abutments were in fair condition overall, both abutment backwalls would need to be reconstructed.

PennDOT and the designers identified the necessary repairs and design moved forward to be completed on time.

Construction

Schedule posed the greatest challenge facing the contractor since S.R. 0993 serves as a school bus route for Norwin School District. Closing the Larimer Bridge during the school year would result in a 17-mile detour for buses which was unacceptable.

Therefore, by contract, the bridge would need to remain open until after the last day of school and then reopen prior to the start of the next school year. This provided the contractor with less than 12 weeks of full closure time to complete the project. Major rehabilitation items included:

- Complete replacement of the bridge deck and steel stringers
- Replacement of end floorbeams
- Replacement of the abutment backwalls
- Blast clean and repainting of all of the structural steel.
- Replacement of the sidewalk and railing

The contractor employed innovative means to compress the work schedule and operations, and was able to reopen the bridge to traffic on schedule.

For instance, equipment mobilized to remove the existing deck was kept in place to remove the existing steel stringers and install the new ones. Operations that might take three separate setups were completed in one.

The contractor also made good use of the time prior to the bridge closure. Knowing that some of the 75-year old fasteners would be difficult to remove, workers removed and replaced them with high strength bolts in advance to maximize time efficiency during the closure.

Painting of the bridge was done in stages. While painting of the steel structure was not completed in time for the scheduled reopening, painting in stages allowed traffic, including school buses, to use the bridge by the start of the new school year.

Overall, the project met PennDOT's goals of meeting the schedule to receive the ARRA funding; having the bridge open while school was in session and rehabilitating the Larimer Bridge to provide service well into the 21st century. ■

Owner: PennDOT District 12-0
Designer: HDR Engineering, Inc.
Contractor: Brayman Corporation

ASHE Insight

ASHE has undergone several changes since the ASHE History books were presented at the 2008 Conference in Hershey, PA, when the 50th Anniversary of the organization was celebrated. After receiving questions from the newer Sections on different issues, the National Board Members, under President Calvin Leggett's direction, agreed to give an update on these matters. (NOTE: ASHE History Book is available online at www.highwayengineers.org)

CONFERENCES

Future conferences include:

2012 - Southwest Penn Section	Seven Springs Resort, PA
2013 - Central New York and Albany Sections	Lake Placid, NY
2014 - Central Dacotah Section	Bismarck, ND
2015 - Chesapeake Section	location TBD
2016 - Pittsburgh Section	Pittsburgh, PA
2017 - New York Metro Section	New York City, NY

MEMBERSHIP

Currently, there are over 6,000 members in 42 Sections located within nine Regions. New members come from word-of-mouth, national conferences/conventions where the ASHE display booth is manned by ASHE members, web site inquiries, membership events/drives held by Regions/Sections.

Originally, membership was slated as being a Senior, Life, Member, Associate, Junior or Affiliate with each category having particular requirements. That has changed and currently the categories are Members, Life, Honorary and Student.

REGIONALIZATION

ASHE was comprised of Sections until 1986 when Zones were introduced with Sections assigned according to location. In June 1994, the National Board approved the establishment of Sections assigned to nine numerical Regions.

During the 1996-1997 ASHE year, a reorganization plan that provided balanced representation for all 29 Sections through a Regional restructuring was discussed and work began to make implementation possible.

The reorganization, including the naming of the ASHE Regions, was approved in June 2010. The Region and Section assignments now in effect include:

Great Lakes Region: Central Ohio Section, Circle City Section, Cuyahoga Valley Section, Derby City Section, Lake Erie Section, Northwest Ohio Section, Triko Valley Section and Albany Section.

Mid-Atlantic Region: Blue Ridge Section, Carolina Piedmont Section, Carolina Triangle Section, Chesapeake Section, Greater Hampton Roads Section, North Central West Virginia Section, Old Dominion Section, Potomac Section and Potomac Highlands Section.

North Central Region: Central Dacotah Section

Northeast Region: Altoona Section, Central New York Section, Clearfield Section, Delaware Valley Section, East Penn Section, First State Section, Franklin Section, Harrisburg Section, Long Island Section, Mid-Allegheny Section, New York Metro Section, North Central New Jersey Section, North East Penn Section, Pittsburgh Section, Southern New Jersey Section, Southwest Penn Section and Williamsport Section.

Rocky Mountain Region: Phoenix Sonoran Section

Southeast Region: Central Florida Section, Georgia Section, Gold Coast Section, Northeast Florida Section, Middle Tennessee Section and Tampa Bay Section.

SCANNER

Recent changes to the *SCANNER* include the addition of the MileMarker section, highlighting activities of various Sections and Regions.

The *SCANNER* began January 1965 as a black and white, several paged publication that was printed and mailed by volunteers. In 1996, a contract was signed with Wanner Associates of Harrisburg for the editing, and mailing of the *SCANNER*. The *SCANNER* is published four times a year.

AWARDS

The following National Awards have been established throughout the years and are presented at the annual ASHE Conference.

George K. Hart Award, established 1976: The award is presented to the Section with the largest percent increase in membership within the current fiscal year. George Hart served as a National Director in 1965 and assumed the duties as National Treasurer in 1967, continuing to serve as Treasurer until 1976.

Gene G. Smith Award, established 1989: The award is presented to the Section with the largest number of new members within the current fiscal year. Gene Smith served in various capacities on the local Board of the Franklin Section and served as National President in 1980.

Robert E. Pearson/Person of the Year Award, established 1974: Sections are asked to select a nominee for this award. The recipient must have been or is active in highway related societies, has had an impact on the highway industry statewide, has given personal time for the good of the industry and has overwhelming respect of his/per peers. Robert Pearson served as National Director and was entering his term as National First Vice President at the time of his death in 1998.

President's Award, established 1977: The award is given in recognition of a person or persons who helped the National President during his/her term achieve his/her goals.

"insight" continued p. 23

"Insight" continued from p. 21

Terence D. Conner, established in 2007: This award is presented to the Section that has the best retention of existing members. The award was created in recognition of Terry Conner's long service as the National Secretary of ASHE, and his work in renewing members for all Sections.

Robert E. Yeager, established 2007: This award is presented to the Section that maintains the most diverse membership. The award was created in recognition of Bob Yeager's many years of service as the National Treasurer.

Member of the Year, established 2008: This award recognizes an individual that has significantly contributed to the growth and development of ASHE during the previous year.

Young Member of the Year, established 2008: This award recognizes a young member (under age 35) that has significantly contributed to ASHE and/or the highway industry.

Life Time Achievement , established 2011: This is a new award and will be presented for the first time at the 2012 National Conference. The award is for ASHE Members only and was established to recognize an ASHE member who has supported the organization throughout their career.

WEBSITE

Currently the National Website is maintained by webmaster, Craig Rock, and under contract with Keller Engineers, Incorporated.

In 2000 Sections were encouraged to create their own webpage so they could be linked to the ASHE National Website. To date, all but three of the 42 Sections are linked to the National web site.

At a recent annual National Past Presidents' meeting, a request was made to National for a way to open communication, in addition to the annual meeting at the ASHE Conference, between National Past Presidents. ASHE National Board Members decided all members needed a way to communicate information and a Discussion Board pull-down is now on the ASHE website that provides five forums for all ASHE members.

Those five forums are listed as:

* General Discussion
* Past National Presidents
* Section Presidents
* Section Secretaries
* Section Treasurers

All members are encouraged to participate in all or any of the discussion forums.

PARTNERSHIPS

ASHE has formed partnerships with other organizations and businesses. Some of these arrangements are service exchanges, while others are for services to ASHE members that are paid for by ASHE. These include:

Fulcrum Corporation: Fulcrum International provides a mechanism for employers and potential new employees and interns to connect with potential employers. Because the site is industry-specific and actively marketed, it is an affordable and effective element of a talent recruitment program. The Fulcrum offers a free e-newsletter, complementary resume posting and job searches. www.thefulcrumintl.com

ASHE Company Store: Contract with Proforma Albrecht & Company was established in 2010 to permit National, Region and Section members to purchase various items containing the ASHE Logo and local Region/Section names for personal use or items to be used at various events, such as the National Conference.

Wanner Associates: Contract to publish and mail the *SCANNER* four times a year.

American Traffic Safety Services Association - ATSSA: ATSSA is a membership organization comprised of manufacturers and installers of roadway safety devices, as well as public sector officials. ASHE and ATSSA undertake cooperative activities to educate their members regarding policies, practices, strategies and tactics that save lives and reduce injuries. When and where appropriate, ASHE and ATSSA will provide opportunities for the exchange of technical information and public/private sector perspectives on roadway issues. ASHE and ATSSA exchange exhibit space, registration and event tickets at each other's annual Conference.

Multi-View: Provides industry e-mail distribution data to ASHE membership in a mutual agreed upon format.

TNT Graphics: Contracts for various Public Relations materials

Check Point: Contract to develop a new ASHE database for use by National, Regions and Sections. The new database is anticipated to be operating by January 2012.

National Partnership for Highway Quality – NPHQ: Being developed

National Association of County Engineers – NACE: Being developed

STUDENT CHAPTERS

There are four ASHE Student Chapters. In 1997, the first ASHE Student Chapter was formed by the Central Florida Section with the University of Central Florida. The Delaware Valley Section currently has a Student Chapter at Drexel University, First State Section has a Student Chapter with the University of Delaware and the Gold Coast Section has a Student Chapter with the University of North Florida. ■

ASHE National Board Members 2011-2012

Thomas S. Morisi
Second Vice President

Tom is currently serving his fifth year on the National Board. In addition to being Second Vice President, he is also Chairman of the National Website Committee. As part of that committee, he is finalizing the online National database project, finalizing an email blast system, and starting into a project to bring all of the Section, Region and National Websites under one domain and one hosting service. In 2010, Tom received the ASHE National President's Award for his work on the Website Committee and his dedication to ASHE and the Highway Industry.

Tom has been a member of the Altoona Section since 1993. He has served in various positions on the Altoona Board of Directors, including Director, Second Vice President, First Vice President and President in 2002/2003.

During his term as Altoon Section President, Tom initiated an annual workshop between the ASHE Altoona Section and the Pennsylvania Department of Transportation, Engineering District 9-0. He served as Chairman of the event committee for five years and turned over that Chairmanship when he became the former Region 4 Director. He is proud of this event and happy to say it is still going strong. Tom served as the Co-Chair of the Technical Committee for the 50th Anniversary ASHE National Conference held in Hershey, PA in June 2008.

Tom is a 1987 graduate of the University of Pittsburgh at Johnstown with a Bachelors Degree in Civil Engineering Technology. He is a Certified Bridge Safety Inspector and a member of ASHE, the Pennsylvania Highway Information Association and the Associated Pennsylvania Constructors. Tom has been employed at Keller Engineers, Inc. of Hollidaysburg, PA since 1993 where he is Vice President, Corporate Secretary and Director of Transportation. He is responsible for the supervision and management of all transportation projects within the Transportation Division including highway and bridge design and bridge inspection. Prior to his employment at Keller Engineers, Inc., Tom worked for six years as a designer on various bridge and highway projects while at another firm.

He is active in his community government where he served on the Geistown Borough Planning Commission before becoming the Borough's Zoning Officer. He was appointed to a vacancy on the Borough Council in 1996 and he has served as a Councilman since that time.

Tom lives in Johnstown, PA with Nancy, his wife of 23 years and their 20 year old son, Jake. His family is the most important part of his life and he cherishes the time spent with Nancy and Jake. His hobbies include bowling, boating and working around the house.

Caroline F. Duffy, P.E.
Great Lakes Region National Director

Caroline was invited to join ASHE in 1999 by one of its founding members. She joined the Triko Valley Board in 2002 and has served in numerous roles including President, Political Information Network Chair, Scholarship Chair, Golf Committee, and most recently, the co-chair of the ASHE 2010 National Conference held in Cincinnati. She also serves as the Political Information Network Chair Committee for the Great Lakes Region Board (formerly Region 1).

Caroline is employed by Barr & Prevost as a Senior Engineer. Her 26-year career has included extensive experience working on public and private sector projects. Her clients include federal, state, county, municipal agencies, developers and numerous airports. She has managed numerous projects that include traffic, lighting, highway, drainage, right-of-way, gateway and geotechnical components from the initial studies through design to construction inspection for various levels of roadways. She holds all of the ODOT Traffic Academy Certifications. Caroline is a Professional Engineer in Ohio and Kentucky.

Caroline serves as Secretary to the Board of the Westwood Community Urban Redevelopment Corporation and is a member of the University of Cincinnati Civil Engineering Advisory Board. She and her husband are currently building a net-zero energy house. Her hobbies include following the Cincinnati Reds, the Cincinnati Bengals, the University of Cincinnati Bearcats, gardening, golfing, boating and jewelry making.

She is a graduate of the University of Cincinnati with a Bachelor of Science in Civil Engineering and a graduate of the Cincinnati State and Technical College with an Associates of Science in Surveying Degree. Caroline lives in Cincinnati with her husband, Mike, of 18 years and several pets.

H. Thomas Brown, P.E., P.S.
Mid-Atlantic Region National Director

Tom resides in Bridgeport, WV, and primarily grew up in West Virginia. He has been employed by the City of Bridgeport as Director of Community and Public Works for the past seven years.

He graduated from Buckhannon Upshur High School and later graduated from West Virginia University with a BSCE. Tom attended post graduate classes at WVU, University of Maryland, the

"Board" continued p. 26

"Board" continued from p. 25

Pennsylvania State University and Catonsville Community College. Course emphasis included highway design, transportation, storm drainage, storm water management and sediment control.

He worked in construction as a laborer, apprentice mason, and engineering/surveying technician prior to graduation from WVU. After graduation, he spent 18 years in construction estimating and management, mixed with 11 years of engineering design and management. Tom obtained his P.E. License in 1995 and his P.S. in 1996.

Tom started attending ASHE meetings in 1991 as he was interested in the programs being presented. Tom later joined ASHE in 2004 and served as the North Central West Virginia Section Vice President in 2004–2005 and President from 2005-2008. He now serves on the National Board as a National Director for the Mid-Atlantic Region.

Tom and his wife, Joy, have been married for 31 years and have one daughter, Cherish, who is attending Fairmont State University.

Al Algazi, P.E.

Northeast Region National Director

Al has more than 36 years experience in the transportation industry, of which 28 years were with the NJDOT, and almost 10 years with Hardesty & Hanover. He is currently the Director of Engineering in the West Trenton H & H Office. His duties include project management, development of future work opportunities, new clients, teaming arrangements and proposal.

He attended Polytechnic Institute of New York where he received a B.S. in Engineering, the College of New Jersey for their Business Administration Program, and also received his M.S. from New Jersey Institute of Technology in Engineering Management. He is a licensed Professional Engineer in New Jersey and Pennsylvania. Al is also a certified Public Manager from the Rutgers University NJDOT program.

Al, who grew up speaking French, is married to Judee, a high school teacher. They have two sons, Jonathan (34), a computer engineer with Lockeed Martin, married to Wendy, a financial auditor with Blue Cross/Blue Shield, and Jason (28) a financial investor banker analyst with T D Bank in New York City. Jason is single and lives in Manhattan. Jonathan and Wendy have two daughters, Jordyn and Alexis, who are almost four years old and six months old.

Al joined the South Jersey ASHE Section 15 years ago. Within one year he joined the Southern New Jersey Section's Board as the Director of Public Relations. He was Membership Committee Chair for the Southern New Jersey Section and instrumental in increasing their membership by almost 100 new members in one year. He was Region 6 Director and Treasurer, for about 6 years, representing the Southern New Jersey Section.

In 2003 he chaired the Region 6 Annual Seminar held at the College of New Jersey with approximately 300 attendees. The seminar raised more than $13,000 most of which was dedicated to the ASHE 2007 National Conference held in Atlantic City. Also, in 2003 Al was challenged to initiate a new Section in New York City. One year later the New York Metro Section was chartered. Today their Section has approximately 200 members.

In 2004, Al was asked by David Jones to join the New Sections National Committee. So far Al has been involved with the chartering the Central New York Section in Syracuse, New York Long Island Section and upcoming charter of a section in Albany, New York.

As the Co-Chair and Treasurer of the 2007 National Conference in Atlantic City, he was also instrumental in creating the Region 6 ASHE Scholarship tax exempt organization that saved $16,000 going to student scholarships in the five Sections of old Region 6. He is also currently the treasurer of the scholarship tax exempt organization.

Currently, Al is Northeast Region President, consisting of 18 ASHE Sections, National Director and serves on several Committees.

Shirley Stuttler

National President's Assistant

Shirley is a member of the Franklin Section and retired in 2011 from the position of Section Secretary after 25 years. She served as a National Director from 1996 to 2002, at which time she was appointed as the National President's Assistant. She also serves on the National Board as Chair of the Section Operations Manual and History Committee in addition to serving as a member of the National Conference and Nominating Committees.

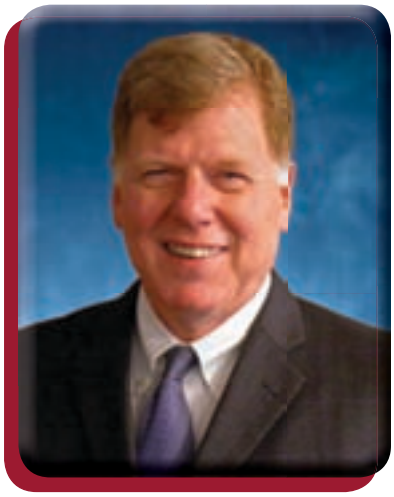
Shirley was honored to receive the National President's Award during the 2011 National Conference. Shirley was selected by National President, John L. Hetrick, at that time, for her superior administrative leadership to the National Board by maintaining a log of to-do items for the Executive Board Members and all standing Committee Chairs, along with maintaining a frequent dialog with all 42 Sections on items of interest and need.

She and her husband John have been married for 23 years and reside in Cochranton, PA. They have three sons; David, who resides in Durham, NC; Jay and wife Christy, who reside in Girard, PA; and Jim and wife Katie who reside in Erie, PA. They are also the proud grandparents of five grandchildren; Adam age 10, Jordan age 8, Ethan age 4, Zachary age 1 and Connor age 9 months.

Shirley spends extra time providing current cancer victims with encouragement and stresses the importance of their attitude on life. As a three time cancer survivor, she tells these individuals that the only thing we can do is play on the one thing we have and that is our attitude. She is convinced that life is 10% what happens to us and 90% how we react to it.

She enjoys spending time with the grandchildren, traveling and relaxing at the cottage located along the Allegheny River, where she and John can enjoy their hovercraft. ■

As the Wheel Turns



Charles F. King, P.E., Named Vice President Urban Engineers of New York, P.C.

Charles "Chuck" F. King, P.E., has been hired as Vice President by Urban Engineers of New York, P.C. and named manager of the firm's New York City office. King brings more than 35 years of diverse experience in the transportation industry to this position. He will be responsible for all aspects of the firm's operations in the greater New York City region.

King's experience includes serving as a program/construction management executive for nearly three decades on complex transportation and facilities projects. His management experience on design/construction programs includes strategic planning, cost analysis and budgeting, stakeholder relations, schedule and scoping analysis, contracts, and public relations. King's experience ranges from "on site" management, including inspection and field engineering, to document control, change order processing, claims mitigation, and quality assurance/quality control.

King earned his Master's Degree in Civil Engineering from the University of Oklahoma and is a professional engineer in New York, Connecticut, Maryland, New Jersey, and Pennsylvania.

"Roundabout" continued from p. 16

EFFICIENCY. Late-night traffic flows freely through modern roundabouts—no more sitting at red lights even in the absence of any cross traffic. Many off-peak vehicles experience only moderate or slight delay. Rush-hour operating efficiency is typically 20% better compared to a signalized intersection, and queue lengths are often dramatically shorter.

SUSTAINABILITY. Almost all efforts to control toxic and greenhouse gas emissions concentrate on either point sources (power plants) or mobile sources (vehicles). These efforts involve expensive, sophisticated equipment that must be installed at every point and every mobile source. But modern roundabouts represent a low-tech means to reduce mobile source emissions that occur at fixed points, namely vehicles at intersections. At red lights, idling internal-combustion engines waste gas and generate pollutants, including greenhouse gases, as do accelerating engines when the light turns green. Lacking both red and green lights, modern roundabouts can reduce emissions as much as 20-30% compared to a signalized intersection, in many cases. Roundabouts' smaller carbon footprint helps fight climate change.

The lack of signal lights, controllers and sensors also means there is nothing to fail and during emergency power outages, roundabouts continue to operate normally. During hurricane or other evacuations, roundabouts can easily be partially contraflowed to send all traffic out of the path of danger. Replacing the seas of asphalt found in traditional intersections with green central islands provides a small but worthwhile reduction in impervious area. The substantial reduction in noise pollution benefits the adjacent people, businesses and community. ■

Code of Conduct: The safety, health and welfare of the public will be held prominent in the conduct of work by ASHE members.

ASHE SCANNER Newsletter

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		Fall 2012	September 2012	July 15, 2012
		Winter 2013	January 2013	November 17, 2012

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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
- 7% are Contractors
- 11% are Related Professions
- 54% of the membership has a professional status

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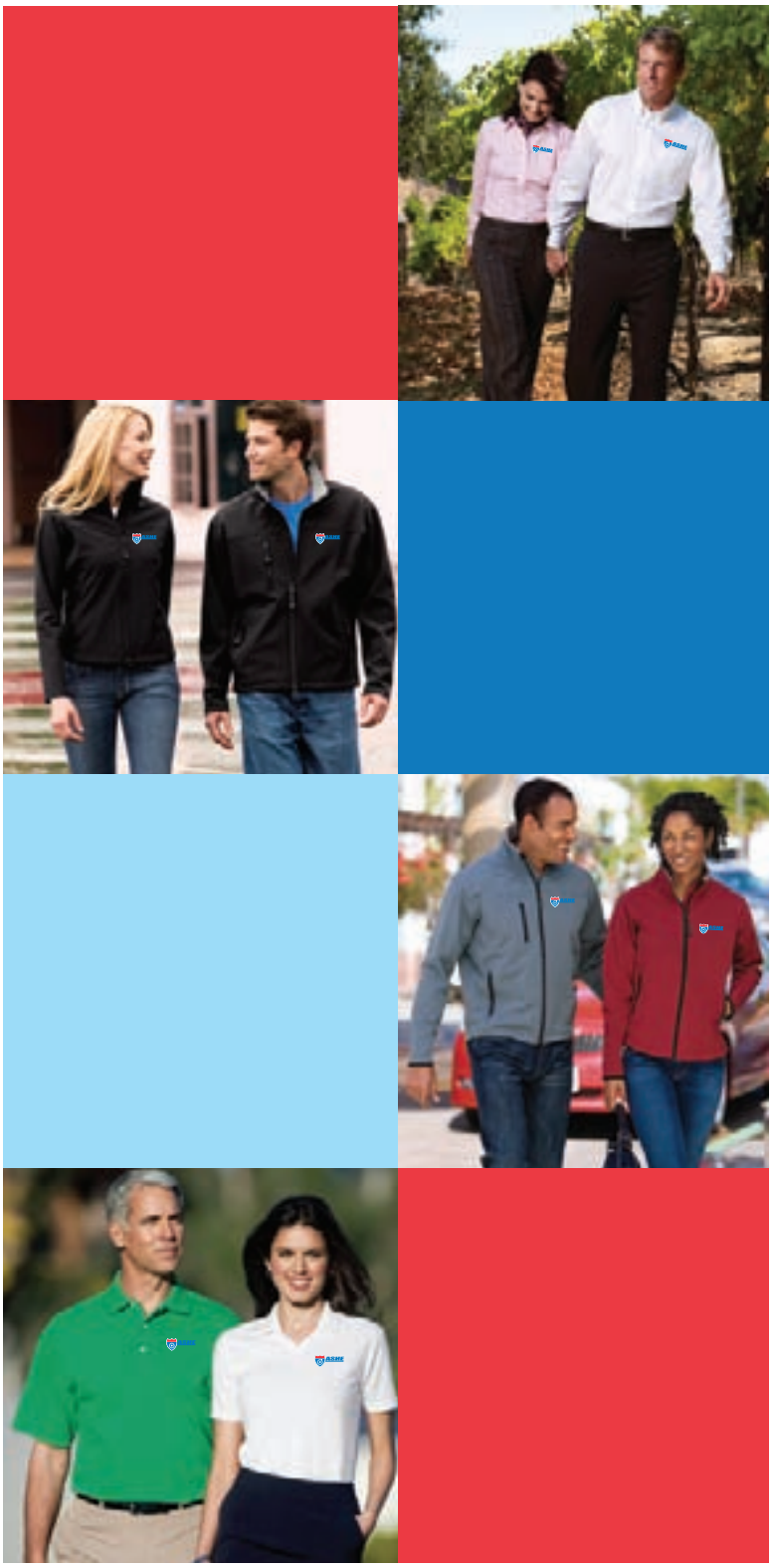
ASHE

Online Apparel &
Merchandise Store



Introducing the ASHE Online Apparel & Merchandise Store

As a member of ASHE, you now have access to an amazing online resource: The new ASHE Online Apparel & Merchandise Store.

This store offers branded, logo'd merchandise that celebrates your membership, looks fantastic and is easy to order at the click of a button. Sign on today and look to see all the great items available:

- **Embroidered Apparel**
- **Branded Apparel**
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Membership

Northeast Region

Albany	94
Altoona	202
Central New York	51
Clearfield	85
Delaware Valley	361
East Penn	84
First State	155
Franklin	202
Harrisburg	346
Long Island	33
Mid-Allegheny	100
New York Metro	140
North Central New Jersey	145
Northeast Penn	139
Pittsburgh	516
Southern New Jersey	212
Southwest Penn	295
Williamsport	141
Subtotal	3301

Mid Atlantic Region

Blue Ridge	72
Carolina Piedmont	56
Carolina Triangle	223
Chesapeake	161
Greater Hampton Roads	117
N. Central West Virginia	48
Old Dominion	80
Potomac	167
Potomac Highlands	43
Subtotal	967

Southeast Region

Central Florida	46
Georgia	364
Gold Coast	7
Middle Tennessee	152
Northeast Florida	236
Tampa Bay	104
Subtotal	909

Great Lakes Region

Central Ohio	173
Circle City	49
Cuyahoga Valley	108
Derby City	57
Lake Erie	125
Northwest Ohio	40
Triko Valley	121
Subtotal	673

North Central Region

Central Dacotah	115
Subtotal	115

Rocky Mountain Region

Phoenix Sonoran	91
Subtotal	91

Total Membership	**6056**
Professional Status	60%
Government	13%
Consultant	69%
Contractor	7%
Other	11%