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# SCANNER

**Winter 2010**

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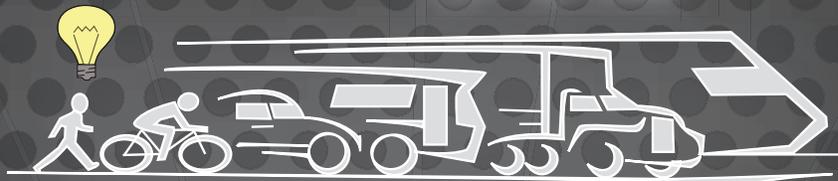
*Boulevard of the Allies Bridge Over Forbes Avenue, Pittsburgh, Pennsylvania p. 8*

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*Correction: The photos of Michael Morgan (Gannett Fleming) and Randy Wanger (Pennoni Associates) were mistakenly switched in the Fall 2009 SCANNER "As the Wheel Turns".*



Pennoni Associates is pleased to welcome **Randy Wanger, P.E.**, as Senior Engineer in its King of Prussia Transportation Division. Most recently, Mr. Wanger held the position of Portfolio Manager for PennDOT District 6-0. He has 36 years of experience and specializes in project management.



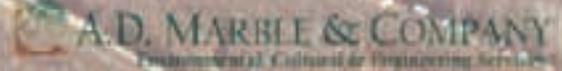
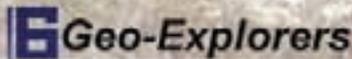
**Michael A. Morgan, P.E., P.P., P.T.O.E.™**, was recently named a vice president of Gannett Fleming. Based in the firm's South Plainfield, N.J., office, Morgan serves as transportation engineering and planning department manager for the New Jersey and metropolitan New York region.



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## President's Message

Kevin E. Duris, P.E.

In my travels to different ASHE sections, I noticed that some states benefitted from the recent stimulus package and some have not. The recovery act, signed by President Obama in February 2009, made \$26.6B available to the state DOT's. The normal program budgets \$54B annually. This was a significant stimulus to the highway construction industry, an increase of 49%. In my home state of Pennsylvania, we received \$1B to increase our annual program to \$2.8B, an increase of 56%.

In the contracting business we have seen an increased level of competition to be low bidder on the increased number of projects. This may be attributed to the decrease in private sector projects out for bid. We recently bid a project in the \$10-20M range; 17 bids were submitted. Some bidders were from out of state.

Competition has increased between material suppliers. On one recent bid, we received six steel piling material quotes, where in the past, we would receive only two. Most agencies have experienced bids coming in at 15-20% below their estimates.

Since this stimulus package was a one time event, and the current federal highway authorization bill expired on September 30, 2009, it is imperative that Congress enact a new six-year reauthorization bill. As of this writing in November 2009, Congress passed only a temporary extension of the bill, which is set to expire on December 18, 2009. Under this extension, states are receiving 30% less highway funding than last year.

States are paralyzed. They cannot take projects to the next level without knowing if the money will be there. If a new bill is passed, states must plan to come up with matching funds, which has been around 20%.

In Pennsylvania, the Commonwealth has reapplied for permission to toll I-80. The Federal Highway Administration turned down the initial proposal. Under the tolling, Pennsylvania could realize up to \$472M annually.

ASHE National is taking action to support the Federal reauthorization and looks to individual sections to support their states in securing matching funds. We sent a letter in October 2009 to key leaders in the House of Representative and Senate supporting an increased investment of our highway system. To date, we received one response. The message received suggested we share our opinions with our local members of Congress. The

official House website is <https://writerep.house.gov/writerep/welcome.shtml>. Contact your local official by email or phone. According to the members of Congress, a personal phone call is the most effective.

ASHE National is in the process of forming alliances with other organizations to promote the new reauthorization bill. Some organizations have legislative action alerts, websites and form letters to support certain pieces of legislation. To stay updated on recent news, read the articles presented in the ASHE *Inside Lane* which is emailed to all members every Thursday. If you are not receiving this email, update your contact information on the ASHE National website, [highwayengineers.org](http://highwayengineers.org), click on Update Membership Information.

In June 2009, the House Transportation & Infrastructure Committee released a 774-page draft of the highway, highway safety, transit and high-speed rail bill. The bill authorizes \$500B for fiscal years 2010-2015, including \$337.4B for highways, \$12.6B for behavioral and motor carrier safety, \$99.8B for mass transit, and \$50B for high speed rail. Past funding was \$286.5B compared to the proposed \$450B. The \$50B for high speed rail is a new program. Therefore, the increase is 57%.

There is strong focus on safety and improving the physical condition of infrastructure. Attention is shown to streamlining project approvals since the average time from inception to completion is 13 years. The goal is to cut that in half.

Funding is sure to be heavily debated. The current user fee on gasoline is 18.4 cents. The House proposes mass transit would receive 20% of the trust fund revenues instead of the current 15.6%. The bill does not include provisions to limit vehicle miles. Department of Transportation Secretary LaHood noted that even if the House were to move forward, there is no evidence that the Senate is prepared to pass a bill in 2009. Lack of money is the most critical roadblock to timely enactment. The debate continues.

ASHE looks forward to chartering a new section in the Indianapolis area called Circle City. The charter ceremony could happen as early as January 2010. As always, any help in finding local champions in new areas is appreciated.

Mark your calendars for the 2010 ASHE National Conference in Cincinnati, Ohio, on June 9-13, 2010. Stay informed by visiting their website at [www.ashe2010.org](http://www.ashe2010.org).

Have a great Holiday Season and a prosperous New Year! ■



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# Spill Containment Protects Drinking Water for 220,000

Kathy Baldwin, CPSM, Gannett Fleming Inc.

© Joel Kane Aerial Photography – 2009

*The Ohio Department of Transportation (ODOT) District 4, faced a challenging project. The Interstate 80 (I-80) Widening Project at Meander Reservoir transformed I-80 from a four-lane to a six-lane highway and replaced the twin bridges over the Meander Reservoir. This project included a first-of-its-kind spill containment system for ODOT that protects the drinking water supply for more than 220,000 people.*

How to convey stormwater and contain hazardous material spills in the same system has been a longstanding challenge to transportation officials whenever a proposed roadway bridge crosses wetlands, a reservoir, or other high-quality waterways. A practical, cost-effective solution to this challenging watershed protection problem was urgently needed.

Under normal conditions, storm runoff from I-80 is collected by the newly designed spill containment system, routed to basins that are sized to contain a 100-year storm event, and then discharged to the reservoir. In the event of a spill incident, this spill containment system now provides emergency responders a maximum reaction time of 30 minutes to close the shut-off valves – one at each basin – and contain the spilled material before it escapes into the reservoir. Once contained, the spilled material can then be pumped out and disposed of properly, providing a simple, yet cost effective solution to the problem.

The project team overcame many other challenges on this \$91.5 million project, including heavy traffic, remediation of abandoned mines under the interstate, and strict environmental provisions to protect the Meander Reservoir. Innovative solutions and a spirit of cooperation among the owner, designer, and contractor (a joint venture between Anthony Allega Cement Contractor and Great Lakes Construction

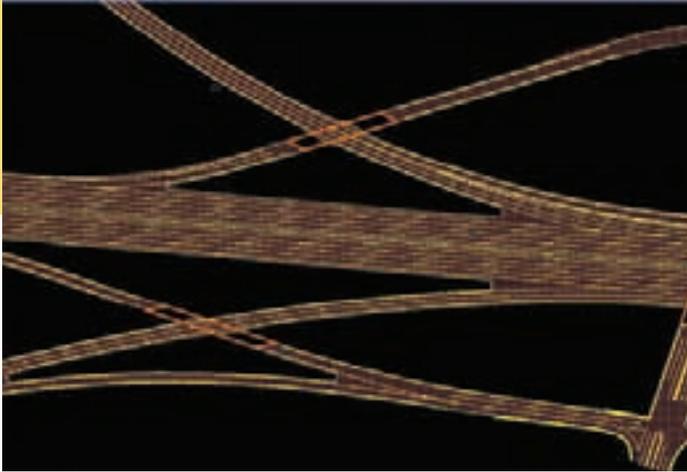
Company) to address the needs of the project and the community made it happen. The project was completed in November 2009.

Gannett Fleming provided the design for four and half miles of the I-80 widening, the new twin bridges, replacement and widening of existing mainline bridges, the spill containment system, emergency access, and a new 12.5-acre wetland habitat that was used to mitigate environmental impacts caused by the project. The wetland habitat will serve as a pooled mitigation site for future ODOT projects.

“With the community and traveling public in mind, ODOT worked with local officials and emergency responders to design this project to achieve everyone’s goals,” ODOT District Deputy Director Eric M. Czetli said. “I am proud to say that with everyone’s cooperation, we were able to design and construct a project that will improve safety for the traveling public, as well as for the drinking water in the reservoir below.” ■

# NCDOT Utilizes Mobile Scanning

Tim Van Gelder, PLS, and Marty Stoughton, PLS



*NCDOT needed design-grade pavement digital terrain models (DTMs) for design to widen five sections of interstate highway. The sections to be surveyed were located along divided highways with high-traffic volumes.*

*Typically, NCDOT uses a combination of helicopter mapping and aerial photography to gather DTM data. This requires that surveyors work along heavily traveled roadsides to place survey controls on the ground, which creates safety issues. Helicopter photogrammetry can also be costly and time consuming.*

*The engineering and surveying firm of McKim & Creed offered an alternative method—mobile scanning—to capture the topographic and planimetric data NCDOT needed. This technology had never before been used by DOT in North Carolina.*

## Test Scan Paves the Way

Mobile scanning combines 3-D laser scanning, GPS, inertial measurement and video technologies. Multiple scanners are mounted on an SUV or on a rail truck and collect dense and accurate 360-degree data while the vehicle travels at posted speeds. The data can be compiled into CAD deliverables and used for design, modeling and simulation in 2-D, 3-D and 4-D formats.

The technology offers considerable benefits. It is less expensive than traditional helicopter photogrammetry. Data collection is much faster because massive amounts of data can be collected while traveling at posted speeds. With fewer personnel working beside busy roadways, mobile scanning creates safer job sites. It does not impede traffic flow. And the dense data that is collected lends itself to future data extraction without additional field visits.

Prior to suggesting mobile scanning to NCDOT, McKim & Creed performed a test scan with equipment provider Terrapoint. A three-mile area was surveyed using static scanning technology, then re-scanned using mobile scanning, and the results were compared. With static scanning, two crews worked for one week to collect the data. With mobile scanning, the data was collected in less than half a day. The DTM data collected was within less than 0.10-ft., with an average accuracy of less than 0.05 feet.

## 50 Miles Scanned

Based on the results of this test scan, NCDOT agreed to implement mobile scanning technology on one project. This project was conducted along U.S. 74/76/17, with the purpose of designating pavement limits and other features. Mobile scans were collected for the entire project site and supplemented with static scans every mile as a quality control measure. Survey data showing edges of pavement, travelways and curb/gutter features were extracted

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*Photo at top: Digital terrain modeling of pavement included edges of pavement, travelways and curbs and gutters. A 5-ft. sample grid is also shown, which was derived from the scan data and helped reveal any roadway features/contours that would have been missed if linework alone were used.*

from the point clouds generated by the laser scanners. The data was then processed in the office, and the data was mapped and delivered to NCDOT in CAD format.

After the first project was successfully accomplished, McKim & Creed and Terrapoint completed four additional mobile scanning projects for sections of highway throughout North Carolina.

Deliverables for each assignment included:

- MicroStation 3-D DTM design files
- MicroStation TIN files
- MicroStation 2-D planimetric design files
- Geopak files including all extracted linework
- QA/QC TIN to TIN comparison design files
- QA/QC comparison spreadsheets
- Complete scan database
- Video and .jpeg files of the entire data collection

### Railroads, too?

Then NCDOT asked if the McKim & Creed/Terrapoint team could mobile scan railroads. The answer was, "Absolutely!"

Data from three sections of railroad—encompassing approximately 33 miles of railway—needed to be collected, so McKim & Creed/Terrapoint team retrofitted the mobile scanning vehicle to NCDOT's hi-rail truck. The truck traveled all the project areas in at least one direction, and most in both directions to ensure full scanning coverage.

The team completed the field data collection for all three projects within two days, scanning approximately 18 miles of rail per day and providing accurate rail surveys with maximum safety and minimal disruption of rail service.

NCDOT is investigating the potential usage of mobile scanning technology for future projects. ■

*About the authors: Tim Van Gelder, PLS, is a regional manager with McKim & Creed, and Marty Stoughton, PLS, serves as director of business development for mobile scanning services.*



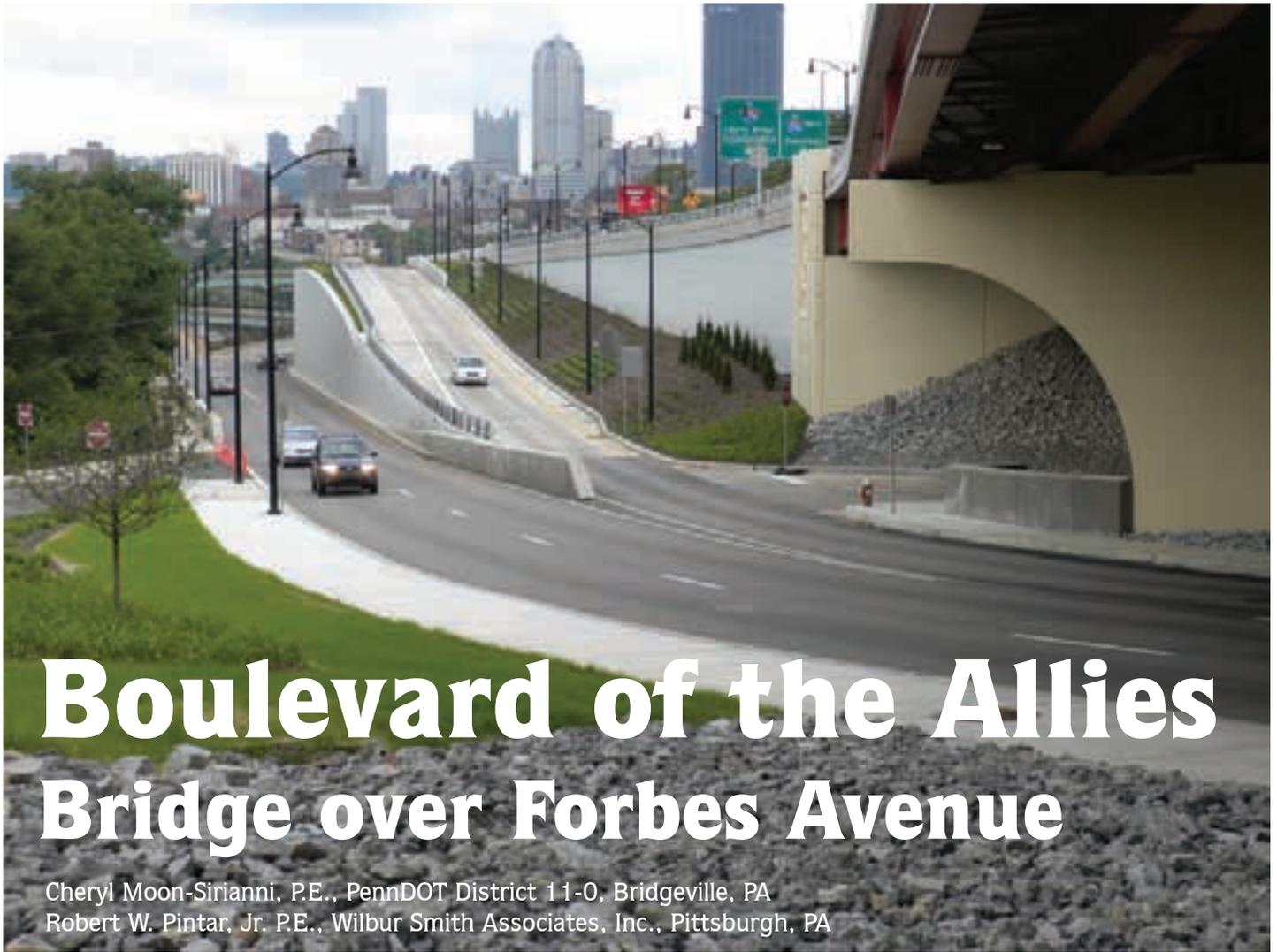
*To gather data along 33 miles of North Carolina railway, the team retrofitted the mobile scanning vehicle to a hi-rail truck. The truck traveled a large percentage of the project areas in both directions to ensure full scanning coverage.*



*Planimetric mapping was produced showing edges of pavement, travelways, curbs and gutters, and bridge decks for the complex interchange of I-77 and I-85 in Charlotte, N.C.*



*These 3-D images were compiled from scanned data along North Carolina roadways.*



# Boulevard of the Allies Bridge over Forbes Avenue

Cheryl Moon-Sirianni, P.E., PennDOT District 11-0, Bridgeville, PA  
Robert W. Pintar, Jr. P.E., Wilbur Smith Associates, Inc., Pittsburgh, PA

*The Boulevard of the Allies and Forbes Avenue are two major arteries in the Western Pennsylvania region which connect the City of Pittsburgh downtown area, a vibrant urban neighborhood, with Oakland, a regional center for culture, higher education, and health care. The Boulevard of the Allies is a four-lane, divided arterial which traverses a bluff overlooking the Monongahela River valley.*

*Paralleling the Boulevard, one block to the south, is Forbes Avenue. As the parallel roadways approach Oakland, Forbes Avenue turns north and enters the heart of Oakland, while the Boulevard of the Allies continues east, bridging over Forbes Avenue. The physical configuration of the Allies Bridge spanning Forbes Avenue creates a high profile and well traveled corridor referred to as the "Gateway to Oakland".*

The gateway was in dire need of rehabilitation. The universities were reluctant to bring new recruits through the corridor due to the unattractive and unsafe appearance of the bridges and the dilapidated atmosphere of the area. The areas adjacent to the bridge include local merchants, small office buildings and the Oakcliff residential neighborhood. The proximity to local neighborhoods makes the quality of life an important consideration in the project's design.

The project included: replacing the severely deteriorated mainspan Boulevard of the Allies bridge and the two ramp structures (one is load posted for 9 tons); improving existing traffic patterns; addressing traffic safety issues, such as inadequate sight distance at the existing ramp structures; and improving the substandard geometric configuration of the structures.

The results of preliminary design determined that the mainline bridge and the off-ramp bridge should be replaced in the same location and that the on-ramp bridge should be removed and replaced with a new on-ramp from Fifth Avenue to the Boulevard, eliminating one structure.

The District agreed upon a steel arched superstructure, the

design team focused on the other aspects of the project. The design team also wanted to preserve the architectural features of the existing bridge as much as possible to perpetuate the tribute to the Boulevard of the Allies. The existing bridge was adorned with large metal eagles and commemorative plaques which could not be salvaged. The team focused on replacing the old metal emblems with a larger concrete eagle. The determination of the type, size and location of the commemorative eagles was a long and arduous process which culminated in the placement of 8'x8' precast concrete eagles on the abutment wing walls.

After the final design process was completed in 2005 and the project was being prepared for bid, limited resources and burgeoning need required PennDOT to take a serious look at ways of reducing the cost of the project. Engineers proposed the removal of the off-ramp bridge structure and replacing it with a slip ramp to Forbes Avenue. This change would reduce project costs by an estimated \$4.83 million.

The project was bid on February 1, 2007 and the low bid was \$29,109,868 which was still more than the original budget but a few million less than the original bid opening. The successful contractor was Joseph B. Fay Company.

Construction was a challenge due to high traffic volumes and limited space around the structure for construction activities. The contractor was required to maintain traffic flow through the site to the major universities and hospitals within the Oakland area. To help alleviate these concerns, PennDOT and the Oakland Transportation Management Association (OTMA) provided an extensive public outreach campaign which included large posters and newsletters to the institutions to be displayed and distributed in prominent areas in the hospitals, as well as in the universities.

The completed project now provides a structure that serves as a revitalized "Gateway to Oakland" and meets the functional needs of the institutions and the community in the Oakland area.

Al Biehler, Secretary of Transportation, summed up the accomplishments by stating, "Today, the Oakland section of the City of Pittsburgh opens a beautiful new gateway into the community. We celebrate not only the completion of another important project, but we also celebrate the removal of an aged, structurally deficient bridge from our region's infrastructure. The changes included in the project represent dramatic improvements in traffic flow for the Oakland area. Everyone involved with the effort was very cooperative and the end result is an elegant and affordable project." ■





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# FCM Bridge Rehabilitation Challenges

Terry Terhune, P.E., SAI Consulting Engineers, Inc.



*With concerns about fracture critical bridges nationwide, PennDOT 9-0 teamed with SAI Consulting Engineers for the Million Dollar Bridge rehabilitation project in central Pennsylvania. The Million Dollar Bridge rehabilitation project presented unique engineering challenges of which having the distinction of being a fracture critical bridge was only one.*

Built in 1947, this 976 foot, four-span continuous riveted two-girder bridge with a girder-floorbeam-stringer system and one simple multi-beam end span crosses the Juniata River, Norfolk Southern Railroad Mainline, and S.R. 1010. The substructure units consist of dual single-column lenticular shaped piers, and the bridge carries two through-lanes of S.R. 0022 along with a center turn lane. The structure is located east of Huntingdon, PA.

After undergoing a right-sizing process to reduce the overall cost and schedule, engineering then focused on the high cost of widening, no available detour, and limited contractor access.

Preliminary studies indicated that significant costs would be incurred if both the superstructure and substructure were widened. To add further complications, because of the large bases and the cone-shaped piers, widening the substructure was problematic. In addition, widening would impact adjacent properties that included a potential 4(f) resource and a municipal sewage plant. Through right-sizing, a deck configuration with minimal widening was identified, which permitted maintaining

traffic on the bridge during construction. The re-evaluation process led to a workable solution consistent with the corridor while significantly reducing costs.

Because the community objected to a detour through their historic town and narrow streets, detours were not permissible. The engineering team worked closely with the community to ensure their concerns were addressed, and a three-phased construction sequence was developed that maintained traffic on the bridge.

Like many rehabilitation bridge projects, the Million Dollar Bridge rehabilitation required unique and creative engineering solutions to address seismic retrofits, non-weldable silicon steel, narrow construction widths, and steel delivery.

Although the existing bearings could not adequately resist the seismic loads, bearing replacement was determined too costly because of large jacking loads and difficult jacking conditions. To address the seismic forces with more economical methods, PennDOT and SAI worked to provide a creative solution that included several methods with innovative details

and load transfer mechanisms all the while minimizing costs. Multiple retrofits that included bearing encasement, restrainer blocks, bumper blocks, and shims worked together to address all seismic forces.

Since the bridge has silicon steel girders and carbon steel floorbeams, special treatments during welding would have been required. In order to avoid the need for special welding treatments and to eliminate the risk of insufficient welds or laminar tearing, bolted shear studs were designed. Although the bolted steel studs are costly due to the removal of existing rivets or drilling new holes to place the bolts, the installation was successful, and composite action was achieved.

The narrow width of construction phases, coupled with no access below the bridge (the river, the railroad tracts, adjacent properties as well as the environmentally sensitive Juniata River that precluded the use of causeways), severely limited contractor access for the rehabilitation of the bridge. However, because traffic studies demonstrated that a signalized one-alternating lane of traffic was feasible with only minor delays, one traffic lane was closed during construction. At night, one lane was closed for the contractor to perform nighttime operations. This permitted direct access for crane operations and for offloading materials from the lane adjacent to the construction zone. Meanwhile,

*"FCM" continued p. 15*



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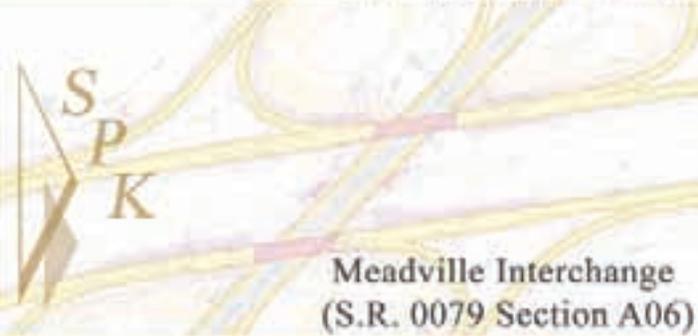
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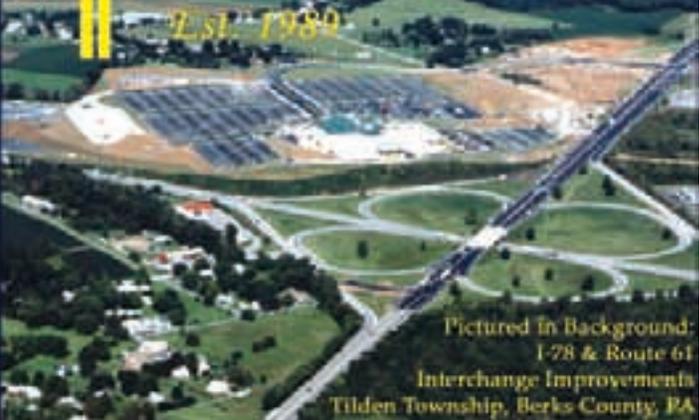
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# Moving in a New Direction

## State and Local Perspectives

Brandon Steele – Town of Blacksburg, and Jennifer DeBruhl – Virginia Department of Transportation

*The Urban Construction Initiative was established as the result of a modification to the Code of Virginia in 2003. Traditionally in Virginia, cities identified construction projects, which VDOT would construct and the locality would subsequently maintain. Over the past several years, increasing emphasis has been placed on local administration of construction projects. The Urban Construction Initiative moves local administration from the project level to the program level, providing Virginia's municipalities with the opportunity to manage their entire construction program.*

### **Town of Blacksburg:**

While locally administering the construction of a \$12M interchange project, the Town of Blacksburg learned of the Urban Construction Initiative (UCI). This program was initiated to assist localities in streamlining the project delivery method for major projects that involve state and federal dollars. Under the UCI program, localities are solely responsible for completing the Urban Program which includes long range planning, preliminary engineering, environmental, federal compliance, and construction administration.

Throughout each project, VDOT remains an important partner by providing oversight and giving final approval of major phases in the project. After evaluating the pros and cons of participating in the UCI, the Town of Blacksburg officially joined the program on July 1, 2008 and has experienced significant improvements in delivering transportation projects to its citizens.

The Urban Construction Initiative's major advantages for the Town of Blacksburg:

1. Moves the service provider closer to the customer.
2. Project delivery is streamlined because it is designed around the Town's exact needs, enabling more projects to be accomplished more quickly with the same funding.
3. Gives the locality greater flexibility to select, manage, and schedule projects.
4. Enables the Town to have more control in the design and construction for context sensitive solutions.
5. The Town can resolve issues (citizen driven and design driven) during construction in an efficient manner since the prime contractor is under direct contract with the Town.

The Town's main challenge in the UCI is that the Town is solely responsible for the success of the urban program. The benefits, however, have already been recognized by the Town, especially during these rough economic times by being able to evaluate situations where cost savings can be implemented. Who knows better than the Town what items and details can be altered or eliminated in a project? To sum it up, the UCI program allows the right people to make the right decisions.

### **Virginia Department of Transportation:**

Undertaking this program was a significant change in direction for VDOT but one that has resulted in great benefits. The initiative places greater responsibility and accountability for the urban construction program in the hands of the local government. This includes the responsibility for meeting all federal and state legal/regulatory requirements, and Commonwealth Transportation Board policy. VDOT retains an oversight and stewardship responsibility for the federal funds that are provided to the locality. VDOT approaches this as a partnership and remains committed to ensuring successful program delivery.

VDOT's Local Assistance Division (LAD) provides ongoing program level support to municipalities participating in the initiative. LAD coordinates quarterly meetings with participating municipalities. LAD also plans and prepares workshops and training opportunities periodically throughout the year.

VDOT's Construction Districts are the primary contact for project implementation support, technical assistance, and oversight. This approach ensures that localities have support for their program, but the ultimate responsibility and public accountability for the program lies with the local government.

Both VDOT and our local government partners continue to look for ways to improve this initiative as we gain more experience working together. Over the past year, we have worked cooperatively with FHWA to develop a certification program to provide greater streamlining and flexibility for the most experienced localities. VDOT expects that the certification program will be implemented in the coming year.

For more information on the Urban Construction Initiative visit the Virginia Department of Transportation's webpage at: <http://www.virginiadot.org/business/local-assistance.asp> ■

# Mile Markers



*Representatives of the North East Penn Section of the American Society of Highway Engineers present a check establishing an endowed scholarship for students in memory of Charles "Chuck" Mattei. Pictured from left to right are Mike Wood, vice president for advancement at Wilkes University; Tim Gilmour, University president; Dominic Yannuzzi, North East Penn Section officer; Dwaine Mattei, Chuck Mattei's widow, and George Roberts, Pennsylvania Department of Transportation District 4-0 Executive.*

## North East Penn

The North East Penn Section has established an endowed scholarship at Wilkes University in Wilkes-Barre, PA in honor of the late Charles "Chuck" Mattei, P.E., supporter and active participant in ASHE activities. ASHE representatives presented a \$50,000 check officially establishing the scholarship at an October dinner at the University.

Mattei, who died in 2003, left behind significant legacies at Wilkes University and in Pennsylvania's transportation system, according to ASHE members and University officials.

He was an assistant professor of environmental science and head coach of the men's lacrosse team at Wilkes University for many years. Mattei also served as the Pennsylvania Department of Transportation's District 4-0 Engineer from 1986 to 2003. During this time, his colleagues said, he made valuable contributions to the transportation industry in the state and was responsible for many notable projects, including the Interstate 81 Montage Mountain Interchange that was dedicated in his name.

Mattei's wife, Dwaine Mattei, of Forty Fort, Pa., a Wilkes University alumna from the Class of 1974, attended the dinner.

Funds for the scholarship are raised through the annual ASHE North East Penn Section Golf Tournament. The success of the tournament has provided money to establish the endowed scholarship fund.

Recipients of The Charles Mattei Scholarship must demonstrate strong academic performance with a grade-point average of 3.0 or higher and show evidence of service to the community and others. Students from northeast Pennsylvania are given special consideration in awarding the scholarship.

Unofficially started by the North East Penn Section in 2005, The Charles Mattei Scholarship has provided two \$1,250 scholarships annually to Wilkes students pursuing engineering degrees.

In accepting the scholarship on behalf of the University, Wilkes President Tim Gilmour, said, "the establishment of the Mattei Scholarship as an endowed scholarship ensures that generations of students will benefit from a scholarship in Chuck Mattei's memory. We are extremely grateful to the American Society of Highway Engineers for their commitment to Mr. Mattei's memory and to our students."

**WANTED**

ASHE is looking for news and photos of events in your Sections and Regions (within one year). Please include pertinent information – who, where, when, why and anything else that tells the story. Send it, along with a photo, if available, to Shirley Stuttler at [sstuttler@hughes.net](mailto:ssuttler@hughes.net). If you have any questions, please call Sandy Ivory at 814-674-8152.

### ASHE at the 63rd Annual Ohio Transportation Conference

ASHE National President, Kevin Duris addressed the ASHE Region 1 luncheon at the 2009 Ohio Transportation Conference (OTEC) in Columbus on October 27. Kevin reviewed the strategic plan with the officers and members present from Central Ohio, Triko Valley, Northwest Ohio, Cuyahoga Valley and Lake Erie Sections of ASHE.

This year, as in the past 20 years, ASHE National exposure funding was used to acquire exhibitor booth space at the OTEC Conference. Membership applications are provided to those interested including many college students throughout Ohio. The Central Ohio Section also co-hosts a Happy Hour at a local establishment with ASCE, OSPE and Columbus Engineer's Club.

The Ohio Transportation Engineering Conference is a two-day conference attended by over 2,400 people from across the United States. OTEC is co-sponsored by the Ohio Department of Transportation and The Ohio State University, and the conference is organized to provide something for everyone interested in Ohio's transportation industry. The program addresses the latest policies and technical information, as well as covering new ideas in transportation policies, planning, design, construction, maintenance, operation, local government, and management of transportation resources. Attendees are able to earn CPD hours at the conference.

Next year, the OTEC Conference is scheduled for October 19-20, 2010 in Columbus at the Convention Center. OTEC's website address is: <http://www.dot.state.oh.us/engineering/OTEC/Pages/default.aspx>



*"FCM" continued from p. 11*

daytime operations were performed without access from the adjacent lane.

The tight construction schedule to complete the first phase before winter presented concerns with timely steel delivery. The installation of new steel members including brackets and stringers was critical to deck replacement; therefore, shop drawing submissions were transmitted electronically for review, which reduced delivery time. Partial submissions with early approvals assisted in starting fabrication all the while close contact and coordination between the reviewer, detailer, and fabricator facilitated approvals.

These challenges required engineering expertise along with teamwork and creativity. The result is a bridge project that addressed the unique demands of a fracture-critical bridge rehabilitation. (This project won the Association for Bridge Construction and Design 2008 Award for Outstanding Bridge Rehabilitation.) ■

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# 2010 ASHE Conference Preview

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The 2010 ASHE National Conference will offer at least 15 technical sessions, unforgettable technical and entertaining tours, social networking opportunities, and big city attractions in a mid-size city.

We look forward to seeing you in the Queen City!

For more information, visit  
[www.ashe2010.org](http://www.ashe2010.org)

## Accommodations

Conference attendees will be staying at the beautiful 4-star Hilton Netherland Plaza Hotel located right in the heart of downtown Cincinnati. You will be able to walk to many fine restaurants, shops, and Fountain Square – downtown's hub for entertainment.

The Hilton Netherland Plaza Hotel is a National Historic Landmark that features impeccable service, one of the top restaurants in downtown Cincinnati, indoor pool, fitness center, Hall of Mirrors, and valet parking.

Rooms will be available at the discounted rate of \$139; government rates are also available. To make reservations, call 1-800-445-8667 and reference the ASHE 2010 conference.

## Attractions

Cincinnati offers plenty of entertainment and recreation for you and your family. You can spend the day at Kings Island Theme Park, recently named the best theme park in the Midwest for families. Directly across the Ohio River, Newport on the Levee features great shopping, dining, and entertainment, including the Newport Aquarium. The Cincinnati Reds will be playing at Great American Ballpark, located only blocks away from the hotel. Be sure to stop in and visit the Reds Hall of Fame displaying memorabilia from the first professional baseball team. Planned entertainment includes an Ohio River dinner cruise on Cincinnati's premier BB Riverboats cruise line. The golf outing will be played at Kenton County's Fox Run Golf Course, designed by renowned architect Arthur Hills.

Downtown Cincinnati is home to many museums, theaters, and art galleries. You can walk to the Contemporary Arts Museum, Taft Museum, and the National Underground Railroad Freedom Center. If you like symphony or the opera, you can visit the majestic Music Hall or visit the Aronoff Center to take in a Broadway show or view the art gallery.

Less than a half-hour drive from downtown, you or your family can enjoy the Cincinnati Museum Center, Cincinnati Zoo, Hofbräuhaus, Mt. Adams, Coney Island, IKEA, EnterTRAINment Junction, Turfway Park, or Grand Victoria Casino. The Cincinnati Museum Center at Union Terminal features a Children's Museum, Cincinnati History Museum, Natural History & Science Museum, and OmniMax Theater. Enjoy authentic German heritage at Hofbräuhaus, the first authentic Hofbräuhaus in America.

## Technical Sessions

The conference will offer over 15 technical sessions and tours. Topics will include Transportation Planning & Land Use, Multi-Modal Transportation Concepts, Streamline Project Delivery, Sustainable Projects, Creative Financing, and Innovative Construction. The 2010 ASHE Conference will offer ample opportunity to secure continuing education credits.

A special tour is being set up for the historic Roebling Suspension Bridge, the model for the Brooklyn Bridge. Other technical tours include the Cincinnati Museum Center located in Union Terminal, a former railroad station and significant landmark built in 1932.

## Transportation

The city of Cincinnati can be easily accessed through the Greater Cincinnati / Northern Kentucky International Airport, located only 12 miles from the Hilton Netherland Plaza Hotel. If you do not care to fly, Cincinnati is located within a short drive from major US cities like Chicago, Detroit, Nashville, Louisville, Lexington, St. Louis, Pittsburgh, Cleveland, and Indianapolis.

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# ASHE National Board Members

## 2009-2010

### **Charles L. Flowe, P.E.** *National Secretary*

Charlie is a Charter Member of the Carolina Triangle Section of ASHE. Charlie served on the Carolina Triangle Section Formation Committee and served as Director, 2nd Vice President, 1st Vice President, President and Past President of the Section. At the National Level, Charlie has served as National Director, National 1st Vice President, National President and National Past President along with chairing and serving on numerous committees.

Charlie earned a BS degree in Civil Engineering at North Carolina State University in 1983. He is a registered Professional Engineer in four states. He has been employed as a consultant to numerous clients in the highway industry since college graduation and has held the various titles of Bridge Engineer, Head of Structure Design, and Projects Manager for Transportation Design. Charlie is currently one of the owners of TGS Engineers in Cary, North Carolina, where he holds the title of Vice President and Principal-in-Charge of the highway and hydraulic design practices for the firm.

Charlie and his wife, Lynnell, have been married for 33 years. They have three children, Rachel, Daniel and Sam, ranging in age from 31 to 21. They are very active in Christ our Hope Presbyterian Church (PCA) in Wake Forest, North Carolina where Charlie is an elder.

### **Shirley Stuttler** *National President's Assistant*

Shirley is a member of the Franklin Section and has served as the Section Secretary for 23 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 serves as a member of the National Conference, Nominating and Society History Committees.

Shirley retired in March 2005 from PennDOT Engineering District 1-0 after 35 years service and continues to perform her ASHE duties for the Franklin Section and National Board from the comforts of her home.

She and her husband John have been married for 21 years and reside in Cochran, PA. They have three sons; David and his wife Lisa, who reside in Athens, GA; Jay and his wife Christy, who reside in Girard, PA; and Jim and his wife Katie who reside in Erie, PA. They are also the proud grandparents of three grandchildren; Adam age 8, Ethan age 2 and Jordan age 7.

As a three time cancer survivor, Shirley spends extra time providing current cancer victims with encouragement and stresses the importance of their attitude on life. 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.

Shirley enjoys spending time with the grandchildren, traveling and relaxing at the cottage located along the Allegheny River where she and John can take canoe outings or enjoy riding in their hovercraft.

### **Al Algazi, P.E.** *Region 6 National Director*

Al has more than 36 years experience in the transportation industry of which 28 years were with the NJDOT and eight years with Hardesty & Hanover. He is currently the Director of Engineering in the West Trenton H & H Office. He is a

project manager, develops future work opportunities, cultivates new clients and writes proposals.

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 both 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 32, a computer engineer with Lockheed Martin, married to Wendy, a financial auditor with Blue Cross/Blue Shield, and Jason 27 a financial investor banker analyst with T D Bank in New York City. Jason is single and lives in Manhattan. Jonathan & Wendy have a daughter, Jordyn, who is two years old.

Al joined the South Jersey ASHE Section 12 years ago. Within one year he joined the Southern New Jersey Section's Board as the Director of Public Relations.

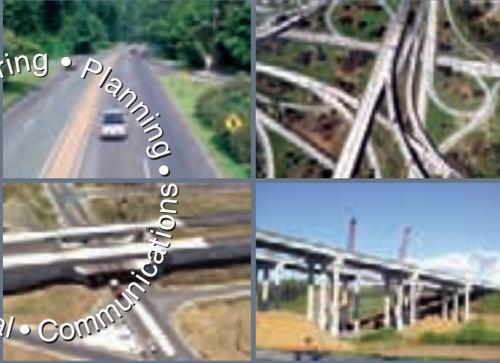
He was membership chair committee for the Southern New Jersey Section and was instrumental in increasing their membership by almost 100 new members within one year. He was Region 6 Director and Treasurer, for about 6 years, representing the Southern New Jersey Section.

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 which mostly was dedicated to the ASHE 2007 National Conference held in Atlantic City.

Also, in 2003 Al was challenged by Rod Pello, at the time ASHE National President,

*"Board" continued p. 21*

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*"Board" continued from p. 19*

to initiate a new Section in New York City. One year later the New York Metro Section was chartered. Today their Section has approximately 180 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 and New York Long Island section. He will be heading to Albany to help start a new section very soon.

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 Region 6. He is also currently the treasurer of the Region 6 scholarship tax exempt organization

Currently, Al is the President of Region 6 and part of the National New Section Committee and is also involved with the New Student Chapters.

### **Richard N. Cochrane, P.E.** *Region 5 National Director*

Richard has been a member of ASHE since 1976, when he joined the Harrisburg Section. His ASHE roots are deep; he is the son of the second president of the Pittsburgh Section, Norm Cochrane. He is currently is a member of the North East Penn Section, where he has served in various capacities, including Section President. Currently he is the President of Region 5.

He is currently the Assistant District Executive for Construction in PennDOT's District 4-0. He has been employed by the Pennsylvania Department of Transportation for 35 years. During that time he has worked in Districts 11 and 4, as well as in PennDOT's Central Office in both research and pavement management.

Prior to his current assignment, Mr. Cochrane has been the Portfolio Manager in District 4 and served as acting County

Manager in Pike County. He also served as acting District Executive for eight months.

He is also an avid bicyclist and private pilot, and has an interest in the history of transportation and public works.

Mr. Cochrane is a graduate of the Pennsylvania State University, with degrees in Civil Engineering and Public Administration. He lives in Clarks Summit with his wife, Marie.

### **Thomas S. Morisi** *Region 4 National Director*

Tom has been a member of the Altoona Section since 1993. During that time, he has served various positions on the Altoona Board of Directors, including Director, 2nd Vice President, 1st Vice President and President in 2002/2003.

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

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 for the past 17 years 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 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.

Tom is active in his community government where he has served on the Geistown Borough Planning Commission before becoming the Borough's Zoning Officer. Later he was appointed to a vacancy on the Borough Council in 1996 where he has served as a Councilman since that time. He recently won re-election and is starting fourth consecutive full term on Council.

Tom lives in Johnstown, PA with Nancy, his wife of 22 years and their 19 year old son, Jake. He cherishes the time spent with his family and his hobbies include bowling, boating and working around the house. ■

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# VDOT and Baker Put Innovation to Work

Beth A. Drylie, P.E. - Baker and Scott D. Vannoy, P.E. - Baker

The Virginia Department of Transportation (VDOT) initiated the implementation of the American Association of State Highway and Transportation Officials (AASHTO) Virtis® load rating software by first directing Michael Baker Jr., Inc. (Baker) to conduct a pilot load rating project. The objective of this statewide pilot project was to determine the level of effort required to perform load ratings of the bridge superstructures using Virtis® and to establish the appropriate data entry approach to be used for the remainder of more than 12,000 state “on-system” bridges.

This was accomplished by selecting 417 bridges to be load rated using the VDOT library of live load truck configurations. These bridges consisted of steel girder, reinforced concrete, pre-stressed concrete and truss bridges with a wide range of span lengths and superstructure configurations.

Followed by the pilot program, VDOT awarded a regional contract to load rate approximately 4,000 structures located in the Lynchburg, Richmond, Hampton Roads and Fredericksburg Districts and truss bridges with gusset plate all over the commonwealth. The load rating analysis on each structure is based on the as-built condition and the deteriorated condition,

as documented by the latest bridge inspection report and is being performed in accordance with VDOT Structure and Bridge Division Instructional and Information Memorandum Number S&B-27.6, the AASHTO Manual for Condition Evaluation of Bridges and the National Bridge Inspection Standards (NBIS).

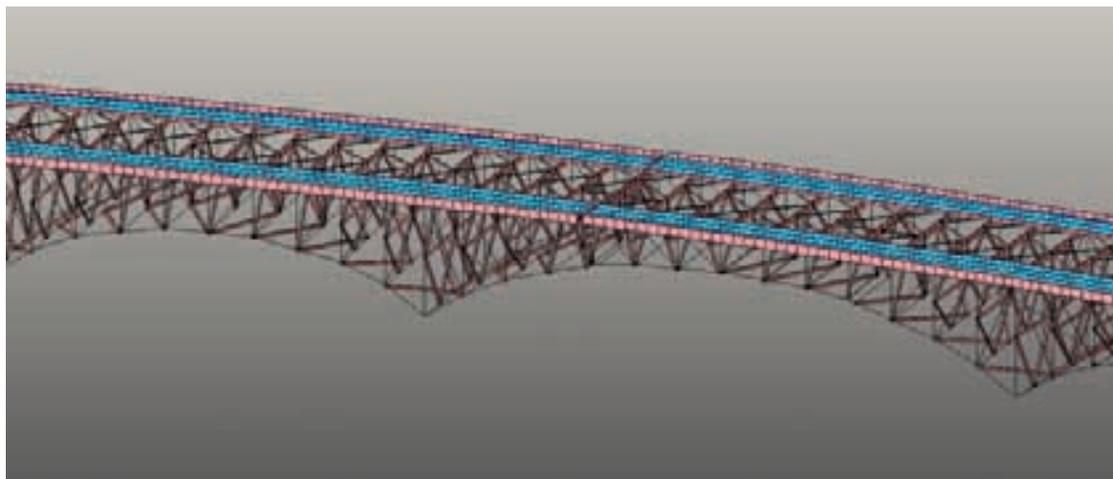
The structure types to be rated include but are not limited to slabs, continuous slabs, t-beams, steel girders, continuous steel girders, pre-stressed girders/beams, frames and trusses all with varying geometric complexities. Not all bridge types (examples include timber decks that are glue laminated and curved bridges with curved longitudinal beams) may be load rated using Virtis®. Independent computations and analysis are prepared for these types of structures.

Due to concerns regarding truss bridges and their gusset plates, the schedule was accelerated to complete the analysis of more than 70 truss bridges and the main member gusset plates. The analysis of the gusset plates was performed using a MathCAD 14 worksheet developed by VDOT and the Federal Highway Administration (FHWA) publication, Load Rating Guidance and Examples for Bolted and Riveted Gusset Plates in Truss

Bridges (Pub No. FHWA-IF-09-014) which provides guidelines to State transportation departments in meeting the requirements of FHWA Technical Advisory T 5140.29, “Load-Carrying Capacity Considerations of Gusset Plates in Non-Load-Path Redundant Steel Truss Bridges.”

To date load rating analysis on more than 800 bridges has been completed for VDOT. This highly successful project illustrates Baker’s commitment to staying at the forefront of innovative solutions to help sustain our nation’s aging infrastructure. ■

*Michael Baker Jr., Inc. (Baker) has been a provider of bridge design, analysis and rating software for more than 20 years. Baker worked with the American Association of State Highway and Transportation (AASHTO) to develop AASHTO BRIDGEWare®, consisting of the Opis®, Virtis®, and Pontis®. These software products are supported by more than 100 states and local agencies and consulting firms worldwide and encompass the entire bridge life cycle through a common database and framework that meets the demands of a complex and diverse user network. Baker continues to work with AASHTO to develop, maintain and support the suite of bridge design, load rating and management software.*



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