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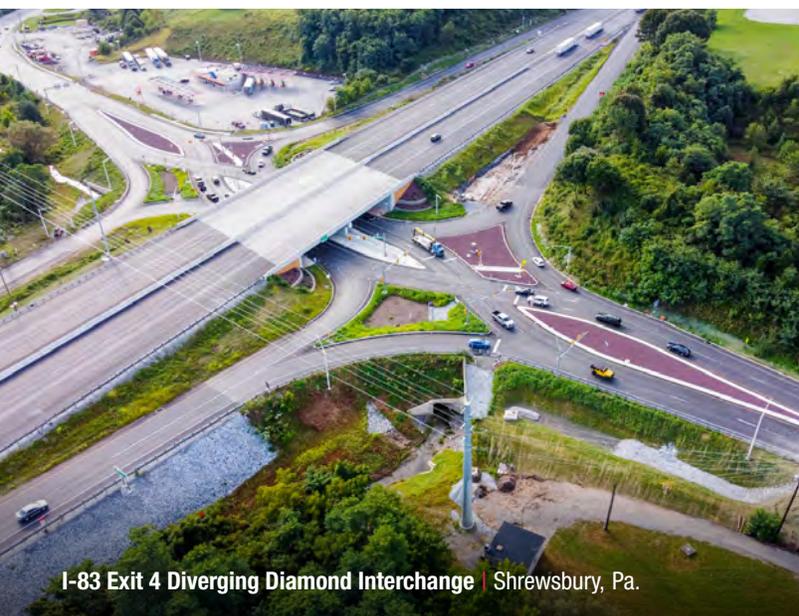
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Leigh Lilla, PE, LEED  
ASHE National President 2022-2023



**NEW DIRECTIONS**

*Greetings, ASHE!*

**M**y name is Leigh Lilla, and I am a contractor/engineer based in the Tampa Section. Thank you for entrusting me to serve as your President for 2022–2023, and I am grateful and humbled to join the list of ASHE Presidents. ASHE has provided so much value to me and my career, and I look forward to giving back to the organization this year and for years to come.

I was lucky enough to serve as the Tampa Membership Chair in 2010, and then I was able to climb the ranks at the Section level, joining the Southeast Board, and eventually becoming a National Director for the Southeast Region. (Thanks, Scott Jordan and Nikki Parris, for the nudge to throw my name in the hat.) I’ve had some great experiences getting to know the ASHE leadership throughout my time on the National Board.

By the time this is published, we will have celebrated a successful Conference in Columbus, OH. Congratulations to the Central Ohio Section and the National Conference Committee! I am thankful that we were able to unite our organization and make great memories with our peers after two years of not getting together. I believe that what you put into ASHE, you will get back and then some. I have made lifelong friends in this group and am appreciative of the fellowship our organization provides. These experiences are essential to fostering successful networking relationships. I reach out to my Tampa friends often with engineering questions, and they know they can call me for constructability feedback in a pinch.

I would like to acknowledge Tim Matthews’ service over the past two years, given the tumultuous and ever-changing environment he faced during his Presidency. Not once did I hear a complaint about this affecting his ability to run an organization. He didn’t just maintain the status quo; we were able to maintain growth and charter new Sections under his tenure as well. He assembled the Board virtually when it made sense and got us together in person when it was safe to do so. Additionally, he is great at running a meeting and listening to the feedback of his peers. It will be a tough act to follow him.

I would also like to thank National Secretary Tom Morisi and National Treasurer Frank O’Hare for meeting with me regularly and helping this transition go smoothly (i.e., keeping me from stubbing my toes too badly). I will rely on their support, along with that of the other Past Presidents and National leadership, throughout the year.

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## TRANSPORTATION SOLUTIONS BUILDING BETTER COMMUNITIES

# Building a Better Broadway for the Louisville Community

by Jeremy Kubac, PE, and Louis Johnson, PLA, ASLA,  
Gresham Smith, ASHE Derby City Section

**B**roadway has served as the City of Louisville's transportation backbone for nearly 200 years. Over time, the street experienced much change and shifted from a community asset to an underinvested corridor needing improvements and modernization to fit all forms of transit. Transecting Louisville, Broadway runs west to east for five-and-one-half miles from Shawnee Park to Cave Hill Cemetery. Along the way, it traverses residential, commercial and industrial areas, in addition to Louisville's central business district.

Broadway is bordered by over a dozen neighborhoods, many of which face the city's greatest racial inequities, climate change impacts and systemic economic challenges. These residents are dependent on public transportation; however, the existing transit service is inefficient and unreliable. The environment, created by mid-century, car-centric infrastructure, is unhealthy. The roadways are unsafe for vehicles, pedestrians and cyclists, especially for those who rely on them the most.

To maximize the current transit system and better utilize more

sustainable and cost-effective forms of transportation, the Louisville Metro Government (LMG) initiated the Broadway Master Plan to create a blueprint for transforming Broadway into a premium transit corridor. This vision recognized that the Complete Streets strategies used would not only benefit public transit riders, but all modes and neighborhoods represented around the corridor. The project team, composed of a diverse, yet complementary group of transportation-related disciplines, named the project Broadway All the Way to create a consistent external two-way communication with the greater community.

As identified in the U.S. Department of Transportation's mapping tool, over 75 percent of the census tracts along Broadway qualify as Areas of Persistent Poverty and Historically Disadvantaged Communities. Also, over 30 percent of the Transit Authority of River City's (TARC) routes run along or intersect Broadway, making Broadway's main bus line, Route 23, a vital public transit connection. Those routes include critical connections to Louisville's major employment hubs and other high-frequency transit corridors.

Safety was a primary element of the Broadway Master Plan. According to the Kentuckiana Regional Planning and Development Agency (KIPDA), the regional metropolitan planning organization, the corridor had nine of the top 10 worst road segment crash rates, and 10 of the top 40 worst intersections regionally. The implementation plan included countermeasures,

*(continued on page 8)*



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Rendering of proposed typical section for Broadway through downtown Louisville

# Building a Better Broadway for the Louisville Community

(continued from page 6)



such as road diets, pedestrian refuges, crosswalk improvements and more, all built around nationally recognized Complete Streets best practices. This approach ensured safer, more comfortable travel for all.

Another focus of the plan was quality of life. In the 2017 Louisville Metro Health Equity Report, it was found that life expectancy in the predominantly Black neighborhoods around Broadway could be up to more than 12 years less than in more affluent parts of the city. This stark difference was related to the root cause issues cited in the 2017 study in relevant focus areas like transportation, the built environment, environmental quality and housing. Many of these issues were related to or exacerbated by past policy decisions, including practices of redlining and the results of urban renewal.

The plans developed as part of Broadway All the Way addressed many of these root causes by planning for equitable transit-oriented development, encouraging greater access to housing, goods and services and providing Complete Streets and premium public transportation facilities. These approaches will increase accessibility and safety through universal design, increase connectivity to jobs, reduce

vehicle miles traveled and reduce transportation cost burden. This, in turn, can improve health outcomes through air quality improvements and increased access to parks.

Closely related to quality of life is environmental sustainability. The Louisville Urban Heat Management Study (2016) identified every community along Broadway as facing "Very High and High Risk" from the effects of urban heat island, correlating with health equity issues, such as elevated levels of asthma hospitalization in these communities. Areas along this corridor also faced flooding challenges, including relatively flat areas of low elevations with elevated levels of impervious area serviced by an outdated combined sewer. To address these issues, Broadway All the Way focused on the reduction of vehicle miles traveled and included opportunities for enhanced tree canopy and high-performance green infrastructure, improving health outcomes for at-risk communities and populations.

Unreliable infrastructure severely impacts economic vitality, personally, regionally and nationally. Along Broadway, inconsistent or delayed public transportation can result in lost wages and lost employment. The envisioned bus rapid transit improvements from the Broadway

Master Plan have positive anticipated results. For example, a user who boards a Route 23 bus at 35th and Broadway will wait nearly half the time and see a dramatic increase in access to jobs within a 30-minute ride. The corridor also experiences major bottlenecks at key locations, like Seventh through Ninth Streets in the central business district, which suffers from a Level of Service. This delay in traffic at peak hours also keeps people from jobs and prevents the efficient movement of goods to the national highway system.

This project has received support from leaders at the national, state, regional and local levels, as well as advocacy groups and stakeholders through partnerships along the planning process. LMG, TARC, KIPDA and the Kentucky Transportation Cabinet have made a commitment to this project through years of collaboration on related planning and design studies. This continued partnership is critical in advancing subsequent project phases as the city



“Breakfast on Broadway,” a community engagement event at the intersection of Second Street and Broadway, invited the public to give feedback about the plans for Broadway.

pursues federal funding. Also, the partnership is evaluating opportunities for “quick-build” pilot projects to see the plan positively impacting the community as soon as possible.

The LMG recognized that the Broadway corridor was a missed opportunity. By engaging the Master Plan, the roadway can be transformed into an environment that enhances quality of life, economic vitality, safety, sustainability and equity for Louisville. 🇺🇸

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## *In Memoriam*



**John L. "Jack" Baker**, 77, a Past President and Lifetime Member of the ASHE Franklin Section, died in Pittsburgh, PA, on June 2, 2022. He attended Gannon University and interned with the Pennsylvania Department of Transportation (PennDOT). There he completed a civil engineering program and became a Professional Engineer. After holding many positions within the department, Jack became District Engineer, leading the northwest region of PennDOT from 1986 to 2001 when he retired after 38 years. Jack won national engineering awards for his work on the Bayfront Parkway and East Side Access Highway in Erie, PA. He served in the National Guard during the Vietnam War.

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# AsTheWheelTurns

ASHE Members on the Move!



## Desai of Dewberry Appointed ASHE National Director

Fairfax, VA—Dewberry announced that **Nimish Desai, PE**, was named **ASHE National Director representing the Mid-Atlantic Region**. Desai's three-year term began with his installation at the May 2022 ASHE National Conference in Columbus, OH. **He currently serves as President of ASHE's Mid-Atlantic Region**. Desai, based in Dewberry's Baltimore, MD, office, has more than 20 years of experience in civil and highway design, hydrology and hydraulics, drainage, stormwater management, total maximum daily load and erosion and sediment control. He received a Master's degree in Transportation from Morgan State University and a Bachelor's degree in Chemical Plant Engineering from the University of Mumbai. Desai also serves as director of American Council of Engineering Companies/Maryland, and he is a member of the American Society of Civil Engineers.



## Brandt Receives Award

Philadelphia, PA—**Jennifer Peirce Brandt, PE**, was named 2022 Geotechnical Engineer of the Year by the Philadelphia Section of the American Society of Civil Engineers (ASCE). Brandt, a **member of ASHE's Delaware Valley Section**, received the award during an ASCE event conducted virtually May 5. She is the president and co-founder of Peirce Engineering, with responsibilities for the design of geo-structural projects. Her projects have included the PennFirst Patient Pavilion in University City, Philadelphia, and the New Richardson Park Pump Station, which was cited by the Delaware Contractors Association for its Construction Excellence Award in 2020. Brandt holds dual Bachelor's degrees in Civil Engineering and Architectural Engineering. She also holds membership in the Delaware Valley Geo-Institute of ASCE's Philadelphia Section and the Deep Foundations Institute.



## Windisch an Award Recipient

Philadelphia, PA—**Harold R. Windisch, PE**, received the 2022 Government Service Award from the Philadelphia Section of the American Society of Civil Engineers (ASCE). Windisch, a **member of ASHE's Delaware Valley Section**, was presented with the award during an ASCE event held virtually May 5. He is the Assistant District Executive for Construction at the Pennsylvania Department of Transportation's (PennDOT) District 6 offices in King of Prussia, PA. He oversees the construction management and inspection program and activities in the heavily traveled PennDOT District 5. Windisch received a Bachelor's degree in Civil Engineering from Drexel University. He is also a member of the Deep Foundations Institute.



## Award for Medora

Philadelphia, PA—**Christopher Medora, PE**, received the 2022 Community Outreach and Service Award from the Philadelphia Section of the American Society of Civil Engineers (ASCE) at an event conducted virtually May 5. Medora, a **member of ASHE's Delaware Valley Section**, is with WSP in Center City, Philadelphia, where he serves as Associate Traffic Engineer. His responsibilities include using software routines for traffic analyses, designing transportation infrastructure, preparing plans for traffic signals, pavement markings and traffic control and developing cost estimates and specifications. Medora earned a Bachelor of Science degree in Civil Engineering from Villanova University and has received certification as an Envision Sustainability Professional. He is also a member of the Institute of Transportation Engineers.



# Cashless Tolling Comes to New York State Thruway

by Lisa Westrick, PE, and Robert Cartwright, PE, Stantec, ASHE Albany Section

Gone are the days of slowing down for tollbooths for the more than 267 million motorists who use the New York State Thruway each year. Cashless tolling had already been in place at several downstate locations of the Thruway. However, a new project extended the system's benefits to 475 miles of interstate highway across the remaining sections of the Thruway, from the Hudson Valley to Albany, Syracuse, Rochester, Buffalo and the Pennsylvania state line.

Stantec and KC Engineering and Land Surveying, PC, served as lead designers for the design-build team, supporting Cashless Tolling Constructors, LLC, and a consortium of heavy civil contractors, including A. Servidone, Inc./B. Anthony Construction Corporation, JV, Rifenburg Construction, Inc. and Economy Paving Company, Inc.

Final configuration at  
Interchange 24 after  
removal of tollbooths



As part of the New York State Thruway Authority's \$355 million design-build project, 70 steel gantries were installed along the roadway to capture E-ZPass tag or license plate data. Existing tollbooths were removed at 52 Thruway interchanges and barriers. In addition to the strategic placement of sensor-mounted gantries, the project included the removal of toll plazas and updates to the areas that led into and out of the plazas. Those included pavement repairs, positive separation of traffic flow and elimination of conflicting traffic moves.

Complexity was surmounted in every step of the project, which was a priority for the state of New York. Failure to deliver on time was not an option, and the project was completed ahead of schedule.

To save time, the number of designs for the overhead gantries was consolidated to five, reducing the time required for setup by manufacturers. In addition, seven design teams worked simultaneously on sites throughout the state.

The COVID-19 pandemic all but eliminated the in-person oversight of traditional design-build projects, which require in-person and in-field meetings. While nothing can replace the interaction experienced during in-person meetings, opportunities arose to integrate new tools and practices to optimize the design-build approaches, and to achieve efficiencies not anticipated.

Regularly scheduled virtual meetings allowed more interaction and timely communication between team members. Recorded video

*(continued on page 14)*



Mainline gantry

# Cashless Tolling Comes to New York State Thruway

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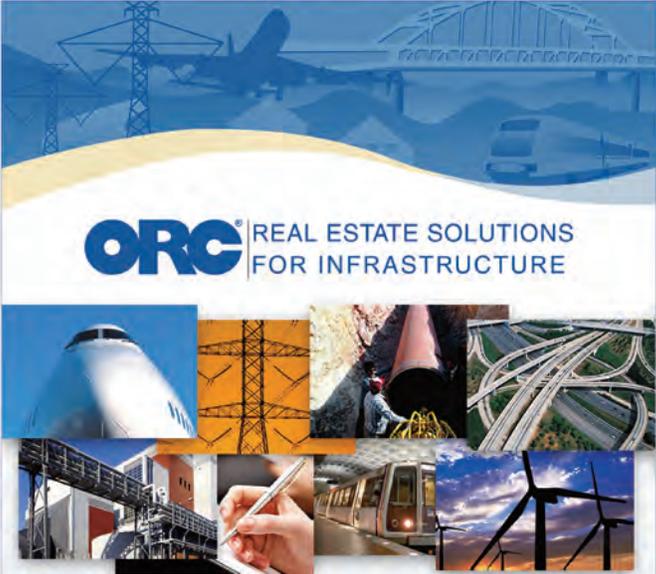
sessions provided the opportunity to hear updates and discussions rather than relying on meeting minutes. Partnering with the site-based contractor and field inspection teams enabled the sharing of Cashless Tolling Comes to New York State Thruway field reviews virtually, which helped everyone stay up to date on progress. The teams could also proactively watch for any design issues that arose.

During construction, traffic operations had to remain undisturbed. One of the major challenges was maintenance of the two systems simultaneously, required in order to verify the gantries' newer technology against the existing system.

To test the new gantries for reliability, the old tollbooths were kept open for a month while the gantries were also processing traffic. The old tollbooths were used as a check on the data from the newer technology, showing that the updated technology worked as expected. After a month of testing, the old tollbooths were removed.

The design team determined a location for each new gantry so that the old and new systems could be accommodated. This involved varied locations, and the smaller exits were the most complex since they had little room. Gantries for the interstate-to-interstate connections were located on the main line rather than at the exit ramp. The team was then able to improve movement between the interstates.

The new electronic tolling collection system went live November 2020, and reconstruction work was completed during fall 2021. The system has a far smaller footprint than the original tollbooths. Thirty-seven acres of impervious surfaces were converted to vegetated areas, benefiting the environment by reducing the amount of stormwater runoff, as well as the areas that require de-icing in the winter. 🇺🇸



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Typical mainline gantry with toll utility building



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# I-475/Dorr Street Interchange Spurs Community Partnerships

by Andrew Langenderfer, PE, Senior Project Manager, Tetra Tech,  
ASHE Northwest Ohio Section

For many decades, there were discussions about adding an interchange at I-475 and Dorr Street in Toledo, OH. At this location, it would improve connectivity to western Lucas County and the City of Toledo to the east.

In 2002, the Toledo Metropolitan Area Council of Governments (TMACOG) developed the Expressway Needs and Major Investment Study (MIS) to identify the transportation needs for the expressway network in the region. Potential projects were evaluated and ranked on criteria established by the MIS scoping committee. In addition to identifying such concerns as substandard roadway design, lane imbalances, improper weaving movements and substandard interchange configurations throughout the system, the MIS recognized the need for a new interchange in the Dorr Street area.

In 2017, Ohio Department of Transportation (ODOT) prepared the study titled A Strategic Plan to Improve I-475, outlining transportation needs through the year 2035. This report identified the need for widening I-475 from four to six lanes and for new service interchanges along I-475. It also mentioned “safer and greater access from I-475” for the University of Toledo, located on Dorr Street approximately four miles east.

TMACOG had included this interchange as a priority project in its original 1996 and 2004 update of the 2025 Regional Transportation Plan. It was imperative that the proposed widening of I-475 and the addition of a new interchange were funded and constructed concurrently. That is because the widening would provide the needed mainline capacity for approval of the Interchange Justification Study.

ODOT initiated planning for the widening and new interchange and held a local shareholder meeting in March 2014. They challenged local stakeholders to participate by determining a project sponsor and funding partnership. ODOT also encouraged them to apply to the ODOT Transportation Review Advisory Council (TRAC) for funding for the interchange. As this would be a new service interchange, ODOT required 50 percent of the funding to be local. The Lucas County Engineer (LCE) at that time, Keith Earley, PE, PS, and Chief Deputy Jeff Lohse, PE, stepped up to lead the local funding effort and sponsorship. The Lucas County Transportation Improvement District (LCTID) was created to act as the project sponsor, along with establishment of a funding partnership comprising four initial local entities. In May 2014, LCTID submitted a TRAC application to ODOT for the first phase of funding.

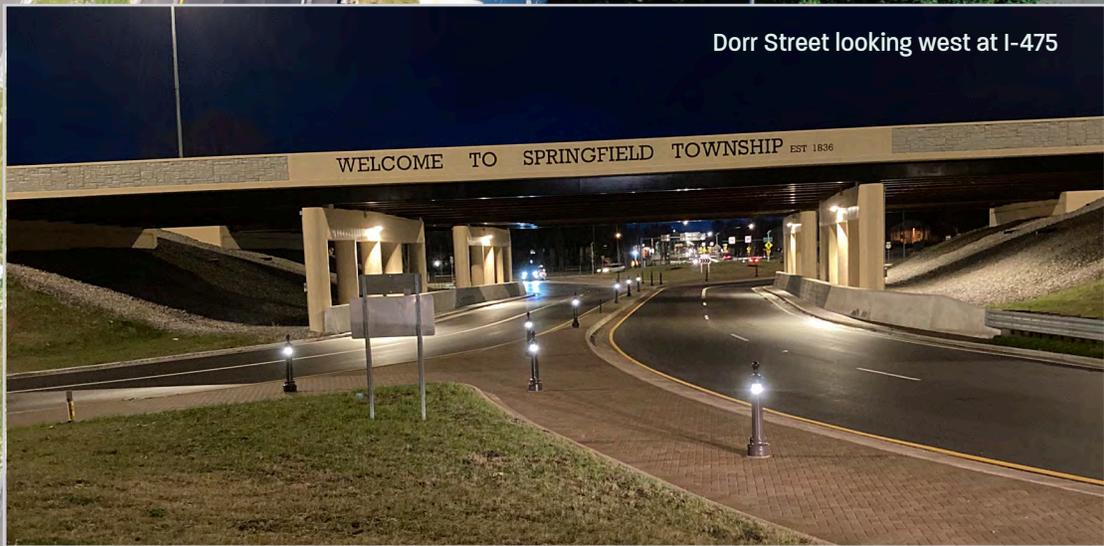
ODOT approved the TRAC funding for preliminary design of the project in 2015. Following recommendations of the feasibility study, a roundabout interchange was selected. The detailed design, led by a

*(continued on page 19)*





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Dorr Street looking west at I-475



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New I-475/Dorr Street Interchange

## I-475/Dorr Street Interchange Spurs Community Partnerships

*(continued from page 16)*

team of consultants, started in late 2016. Major elements of the project included roadway, pavement, grading, water mains, drainage, detention ponds and lighting. It also encompassed detailed maintenance of traffic, right-of-way (R/W), signing and markings, bridge widening, noise barriers, landscaping and other aesthetics. Dorr Street was widened from two to five lanes, which included a two-way, left-turn lane.

ODOT approved the next TRAC application for construction funding in 2018. A design modification was added to the project later that year, which included design of two additional roundabouts on Dorr Street. This posed a challenge because the additions came so late in the overall plan development. Other challenges included an aggressive project schedule, coordination with the I-475 widening, numerous utility relocations and difficult R/W acquisition of more than 100 parcels along the corridor, with relocation of 20 properties.

The LCTID Board also endured multiple funding challenges, including the loss of two of the original funding partners and a significant increase in the overall project cost. Ultimately, LCE and Springfield Township provided the local funding to the LCTID. A Tax Increment Finance district was created for the adjacent parcels, and Mike Hampton, Springfield Township Administrator, helped secure funding from a private partner.

The project was awarded to Miller Brothers Construction, Inc., at just over \$45 million, which included the I-475 widening. Construction started in late fall 2019, with an incentive that the interchange should open to traffic by August 2021, prior to the Solheim Cup. This event pairs the best U.S. women golfers against top professionals of Europe. In September 2021, the Inverness Club hosted the week-long

event for the first time. A record 130,000 fans attended, with an estimated economic impact to the region of \$40 million. The I-475/Dorr Street Interchange, which opened only weeks prior to the Cup, was dedicated August 2, 2021.

Many public and private entities were involved in the addition of the interchange. Lucas County's Chief Deputy Lohse commented, "This project had considerable uncertainties throughout development. Credit the decisions of the LCTID Board led by Keith Earley to keep this project moving despite the hurdles. It was gratifying to be a part of the multiple dedicated individuals from ODOT, Springfield Township, consultant team led by Tetra Tech, real estate acquisition team and utilities and construction workers to deliver this successful project."

Todd Audet, PE, and Rich Martinko, PE, both former ODOT District Two Deputy Directors, along with Mike Gramza, PE, Capital Programs Administrator, led the initial charge on the project. Current ODOT District Two Deputy Director Patrick McColley, PE, Capital Programs Administrator Kacey Young, PE and LCE Mike Pniewski, PE, PS, completed the project. McColley said, "... ODOT, together with the Lucas County Engineer, Lucas County Transportation Improvement District, Springfield Township, City of Toledo, TMACOG and a private contributor, all provided financial support for this project. The regional cooperation and necessity earned this project the highest score in the history of ODOT's Transportation Review Advisory Council."

The Dorr Street Interchange has already proven itself invaluable in providing more safety and convenience for the region. 



# 2022 ASHE National Conference

## Columbus, OH

The 2022 ASHE National Conference took place May 12-15 in Columbus, OH. The event included various events throughout the city, including the Renaissance Downtown Hotel, Columbus Zoo and Aquarium, Golf Club of Dublin, Ohio Stadium and more!

The event brought together more than 450 industry professionals for education and networking.

### Thursday

The Conference kicked off with a tournament at the Golf Club of Dublin. Thirty-three teams participated in the outing...132 individual players! For those that chose not to golf, a guided walking tour of the German Village neighborhoods of Columbus was provided. Thursday evening was highlighted by a Welcome Reception and Ice Breaker with Exhibitors event at the Renaissance Downtown Hotel. More than 45 exhibitors welcomed attendees for an evening of fun, food and drinks.



### Friday

The opening session kicked things off with featured speaker Hari Kalla, Associate Administrator for Infrastructure at the Federal Highway Administration. The day included more than 10 technical sessions covering everything from highway safety and bridges to community connectivity and technology. The luncheon honoring National Past Presidents featured Dr. Jack Marchbanks, Director of the Ohio Department of Transportation, and a presentation from Ed Lentz, a local historian and storyteller who gave the history of Columbus. The award presentations for ASHE National Project of the Year and the Robert E. Pearson/Person of the Year were also handed out during the luncheon. In addition, the day featured guest tours of Ohio Stadium, the North Market and High Bank Distillery. The night ended at the Columbus Zoo and Aquarium for an evening of animal entertainment and interaction, great food and drink and relationship development.



# Saturday

The Conference came to an end with another day of technical sessions and guest tours. Tours included the Franklin Park Conservatory and Easton Town Center. The National Board Meeting wrapped up the end of the technical program, but it kicked off the start to the evening's entertainment at the President's Reception and Annual Banquet. Magician Drew Murray provided the crowd with mind-blowing tricks, and there were games galore, including casino games, ping pong, giant Jenga and more!



**Many thanks to all who helped to make the 2022 ASHE National Conference a success!**

**Special thank you to our volunteers, committee chairs, sponsors, exhibitors and attendees. We hope you enjoyed Columbus!**

Photos from the 2022 ASHE National Conference can be found on the Conference website:  
<http://2022conference.ashe.pro/>



# Hybrid Solution for a Temporary Condition

by Lodovico (Vico) Innocenti, PE, Fisher Associates, **ASHE Franklin, Southwest Penn and Pittsburgh Sections**, Shirley Tang, MSCE, PE and Sebastian Lobo-Guerrero, PhD, PE, American Geotechnical and Environmental Services, Inc.

The Pennsylvania Turnpike Commission (PTC) has had a longstanding commitment to the continuous modernization of its roadway. One example of such an upgrade was the replacement of the overhead bridge (No. B-502) at milepost 110.12, carrying North Center Avenue (SR 601) over the turnpike in Somerset County.

The bridge replacement project allowed the PTC to complete the full-depth reconstruction and widening of the turnpike from two lanes to three lanes in each direction. The North Center Avenue Bridge was heavily traveled, which eliminated utilizing a detour during construction. The existing superstructure was a fracture critical steel through girder and floor beam system that prevented the use of half-width construction methods. As a result, the PTC turned to a temporary bridge to maintain traffic during construction.

The project was let with a design-build component for the temporary bridge, allowing the contractor and engineers to find a cost-effective solution. The contractor, Beech Construction, Inc., teamed with Fisher Associates for the structural design of the temporary bridge abutments and construction support engineering. American Geotechnical and Environmental Services, Inc., managed the geotechnical design.

## The Challenge and Solution

Due to the design-build nature of this project, a cost-effective solution was essential for the temporary abutments, wingwalls and foundations. Traditional abutments, such as concrete cantilever abutments and Mechanically Stabilized Earth (MSE) walls, represented higher costs for this temporary





structure. After considering several alternatives, the team arrived at a hybrid solution.

A temporary bridge consisting of a 180-foot, single span, two-lane Acrow bridge was to be supported on hybrid pile cap/geosynthetic reinforced soil (GRS) abutments. The superstructure span length was decreased from 200 feet to 180 feet, eliminating the use of temporary shoring along both shoulders of the turnpike and existing SR 601 bridge. This resulted in significant cost reductions and time savings. The hybrid abutments still had to satisfy all design codes, special provisions and standard details for these separate technologies.

### Cost-Efficient Hybrid Abutments and Wingwalls Design

The design team developed the idea of constructing the abutments and wingwalls using geogrid for reinforcement, geotextile and wire mesh struts for the facing and a concrete cap on piles to support the superstructure. The face of the geogrid was designed and constructed vertically to help decrease the span lengths and loadings of the temporary superstructure. The design integrated the technologies of traditional MSE walls, GRS walls and pile foundations to achieve the final hybrid abutments.

Traditional MSE walls are attractive due to their simple construction methods, relying on the anchoring effect of metallic strips connected to precast concrete panels

and embedded in granular backfill. The earth pressure generated by the backfill is counteracted by the friction on the metallic strips. Although a simpler technology, concrete panels and metallic strips can represent a significant cost for temporary structures.

On the other hand, GRS walls and slopes only require geogrids and geotextiles and are more economical. They rely on the anchoring effect of the friction between the geogrid and granular backfill. Because the geogrid spacing is closer, the internal earth pressure is significantly smaller than MSE walls.

Traditional GRS slopes benefit from these principles but are typically not constructed vertically because of the potential lateral movement needed to mobilize the strength. This is due to the relatively low stiffness of the geogrids. Thus, the analysis for the abutments and wingwalls used a critical geotechnical model for internal, external (bearing capacity, sliding, overturning) and global stability for the minimum required strap lengths. Most of the computations were performed using ReSSA+, the Federal Highway Administration's program.

The pile foundation saw challenges in the form of poor-quality bedrock: claystone and shale were encountered in the borings where the pile tips were anticipated. Typical pile design would avoid terminating piles in claystone or shale due to the

*(continued on page 24)*

<<< Geosynthetic reinforced soil abutment construction with installed piles

(continued from page 23)

susceptibility to stress relaxation (decrease of capacity over time) after pile driving. As a result of the subsurface challenges, the design team considered driving the piles to claystone and developing a series of restrrike tests to demonstrate that relaxation did not occur. Test piles were instrumental to confirm capacity and to test for pile relaxation after initial driving. This allowed for the optimization of pile lengths and avoidance of additional predrilling costs. The computer program LPILE was used in determining required length of the piles to achieve fixity.

As for the structural design of the concrete cap and piles, by using the principles of GRS technology, it was possible to neglect horizontal earth pressures at the rear face of the pile cap and backwall, decreasing the lateral loads on the piles. This was significant, as the design also had to take into consideration the loads associated with the launching of the temporary superstructure as well as the crane loadings that would be supported by the hybrid abutments.

Development of special details, such as the geogrid being placed around the installed piles and the staggering of the geogrid for the abutments and wingwalls, was necessary to integrate the three technologies. The GRS allowed for the bottom of the GRS wingwalls to be stepped with the slope of the existing ground, which helped reduce the amount of excavation. The design and construction teams worked together to develop these details for the construction plan set. Special attention to testing also helped corroborate the hypothesis of this hybrid design.

### Completion

Work began in spring 2018 with the construction of the temporary GRS abutments. The temporary Acrow bridge



Construction of GRS wingwalls and GRS backwall fill

was assembled on-site and then launched over the turnpike in June 2018 during a single overnight closure of the turnpike. Once the temporary bridge structure was completed, North Center Avenue traffic was shifted to the temporary bridge. This allowed the contractor to begin demolition of the existing bridge, followed by construction of the new structure.

The temporary bridge allowed PTC to reach its goal in constructing the replacement bridge while maintaining traffic in both directions. The new bridge opened to traffic in July 2019. In pursuing such a hybrid methodology, this project used a recent technology in the form of GRS abutments with piles. This represented an estimated cost savings of half of the MSE construction cost.

The most significant cost savings for the temporary substructures came from avoiding predrilling of the piles and reduction of the amount of concrete and rebar from traditional abutments. It also eliminated the need for temporary shoring to support the temporary abutment excavation and demolition of the temporary abutments. The implemented hybrid abutment design was the first bridge of its kind for the PTC. 🇺🇸





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Pictured, from left: Kevin McAlister (Bridge Engineering), Jonathan Haycraft (Business Unit Director), Jack Kimbrough (Roadway Design), Jeff Glass (CEI)

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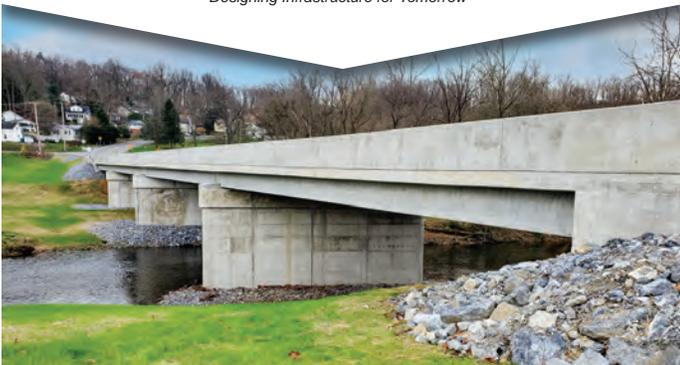
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# Rising to Florida's I-4 Ultimate Challenge

by David Parks, Community Outreach Specialist, FDOT Consultant, ASHE Central Florida Section



Placing steel girders over I-4, some more than 160 feet long and seven feet tall, required maintenance of traffic coordination and equipment operators.

In addition to the concessionaire's sourcing of more than 2,000 craft workers, these additional facts further underscore the magnitude of the project:

## 9.5 million

9.5 million cubic yards of dirt would fill enough trucks to stretch from Jacksonville, Florida to Los Angeles, California.





Layered flyover ramps allowed more than 150,000 vehicles per day to travel between I-4 and SR 408, at highway speed, above local surface street traffic.

Orlando, FL, known as the Theme Park Capital of the World, attracts more than 75 million visitors a year, many driving I-4 to popular tourist destinations. Another 2.5 million people reside in the metro area, a number that could double in the next 10 years. But popularity comes with a price: traffic. In 2014, Florida Department of Transportation (FDOT) began work on what it called I-4 Ultimate, a project to meet current needs and tomorrow's demands.

Substantially complete in February 2022, I-4 Ultimate, the largest infrastructure project in FDOT's history, rebuilt 21 miles of I-4 through the heart of downtown Orlando, reconstructing the entire existing roadway. It reconfigured 15 major interchanges, replaced more than 140 bridges and added two managed lanes in each direction, known locally as I-4 Express. And it was accomplished by keeping more than 150,000 vehicles per day moving along the region's transportation backbone.

FDOT first started groundwork for I-4 Ultimate in the 1980s, developing plans and conducting studies. It considered every option possible throughout the process, even double-decking the highway. The department needed creative solutions.

Building improvements as funding became available could have taken more than 20 years. But public-private partnership (P3) procurement methods allowed FDOT to upgrade I-4 in nearly a quarter of the time. FDOT entered a 40-year concessionaire agreement with I-4 Mobility Partners to design, build, operate, maintain and finance the corridor. The project received 2014 America's Transport Deal of the Year from Project Finance International, and FDOT won the 2015 Silver Award for Government Agency of the Year from P3 Bulletin.

With a \$2.3 billion (year-of-expenditure dollars) price tag, I-4 Ultimate was not an average project. FDOT wanted

to create a more functional roadway and a signature corridor unique to Central Florida, with hardscapes, accent lighting, fountain illumination and a landscape design.

As part of its substantial completion, FDOT opened I-4 Express, using an introductory 50-cent toll per segment, the minimum allowed under Florida Statutes. Benefits of the added capacity on I-4 were immediately realized, while drivers learned how to use I-4 Express. Public response was positive, with over 15,000 customers per day choosing to use the lanes. As demand grows, FDOT will migrate to a variable toll structure to further manage congestion.

**The Challenge**

I-4 Ultimate was a major undertaking in a dense urban environment through multiple jurisdictions. The challenge was management of traffic during construction of 270 lane miles that essentially overlaid existing I-4 facilities. Given tight right-of-way constraints, the project team developed a Temporary Traffic Control Plan (TTCP) that maintained the existing number of travel lanes, provided community connectivity and gave the concessionaire space to safely build the project. The TTCP involved hundreds of phased traffic switches, temporary lanes and ramps and more than 40,000 nighttime lane closure requests.

**Project High Points**

I-4 Ultimate earned Florida's first Institute for Sustainable Infrastructure Envision Platinum certification, similar to Leadership in Energy and Environmental Design certification for vertical construction. I-4 Mobility Partners received the award for programs minimizing environmental impacts, including relocating protected wildlife, using efficient

*(continued on page 28)*

**1.3 million**  
If the 1.3 million linear feet of steel pile were placed end-to-end, the line would reach from Tampa to Key West, about 240 miles away.

**2.25 million**  
2.25 million square feet of decks for bridges and overpasses were built in downtown Orlando. That's enough area to cover nearly 30 soccer fields.

**50 years**  
Concrete lanes can last 50 years without major maintenance. Lanes built in 2020 should still be usable in 2070.

# Rising to Florida's I-4 Ultimate Challenge

(continued from page 27)

A new 12-foot-wide pedestrian bridge over I-4 provided a gateway to the City of Maitland.

machinery, controlling stormwater runoff, planting noninvasive vegetation and recycling 99 percent of concrete and steel removed from existing I-4 roads and bridges. The project also facilitated alternative transportation, integrating rail projects and improving pedestrian crossings and connections with bike trails.

FDOT's communications team and Global-5, their consultant, won an American Association of State Highway and Transportation Officials TransComm Skills Award for I4Ultimate.com, featuring a first-of-its-kind customizable alert system. This allowed drivers to receive advanced text and email notifications specific to areas they drove through. These tools gave motorists more control over their commute, helping them make informed decisions about when and where to drive, reducing work zone travel stress.

Use of technology helped to streamline project administration. The team adopted an all-electronic approach to design submittals, including digitally signed and sealed plans, which exceeded 70,000 sheets. Review comments from FDOT's design consultant RS&H were collected and shared electronically, as were comment resolution exchanges, facilitating an efficient process with a readily traceable history.

For construction, the concessionaire used a web-based witness and hold system that integrated its daily Quality Assurance (QA) and Quality Control (QC) inspection reports. It also expedited material sampling and testing requests from the contractor to QA and QC teams. In its oversight capacity, FDOT worked with its consultant HNTB Corporation, using industry experts and software developers to create a first-of-its-kind, web-based, risk-based audit plan/platform known as RBAP. This could statistically validate effectiveness of the concessionaire's QA/QC processes, demonstrate compliance to satisfy Federal Highway Administration requirements and provide a platform to communicate and resolve oversight findings of nonconforming work. These web-based systems provided the concessionaire, QA and QC teams, contractor and FDOT with ready access to extensive inspection and testing data. And this enabled them to make informed decisions regarding both positive and negative work trends.

I-4 Ultimate included a \$1.5 million art endowment program that funded permanent art installations along the roadway. Spearheaded by I-4 Mobility Partners, the program's artwork highlighted community identities and enhanced the interstate's transformation into a signature corridor. Five

## 1.2 million

1.2 million tons of asphalt were used to pave 270 lane miles of I-4. That's enough to pave a single-lane road from Orlando to Savannah, Georgia.



## 412,000

Workers hauled more than 412,000 tons of asphalt, concrete, and metal — equal to the weight of 2,793 SunRail engines — to temporary recycling yards along I-4.



## 98.6%

Nearly 99% of the asphalt, concrete and steel removed from old roadways and bridges was recycled.



The I-4 Ultimate project poured 461,000 yards of concrete — enough to overflow the Camping World



sculptures were installed in Altamonte Springs, Maitland, Winter Park, Orlando and Orange County. The town of Eatonville used its endowment to fund youth arts.

Partnering with regional first responders, the project team provided emergency personnel with opportunities to drill on new facilities, particularly the third- and fourth-level flyovers, and I-4 Express, which was separated by a concrete barrier wall from General Use Lanes. Training exercises were held to familiarize first responders with how to access and navigate the new interstate facilities, including “mock” accidents on I-4 Express weeks before the opening. First responders gained experience using electronic emergency access gates between I-4 Express and General Use Lanes.

#### Far-Reaching Benefits

The benefits of I-4 Ultimate stretched beyond the footprint of the Sunshine State’s largest infrastructure project. It enhanced quality of life for residents and visitors alike. It also strengthened the economy by improving access to businesses, medical facilities, education centers, tourism venues and attractions. The project promoted ports and railways by providing a reliable distribution corridor to

enhance regional safety and connectivity. In short, I-4 Ultimate transformed Central Florida, ushering in a new era of transportation in this fast-growing region. 🇺🇸

**161,000**

imate team  
0,000 cubic  
concrete —  
fill and  
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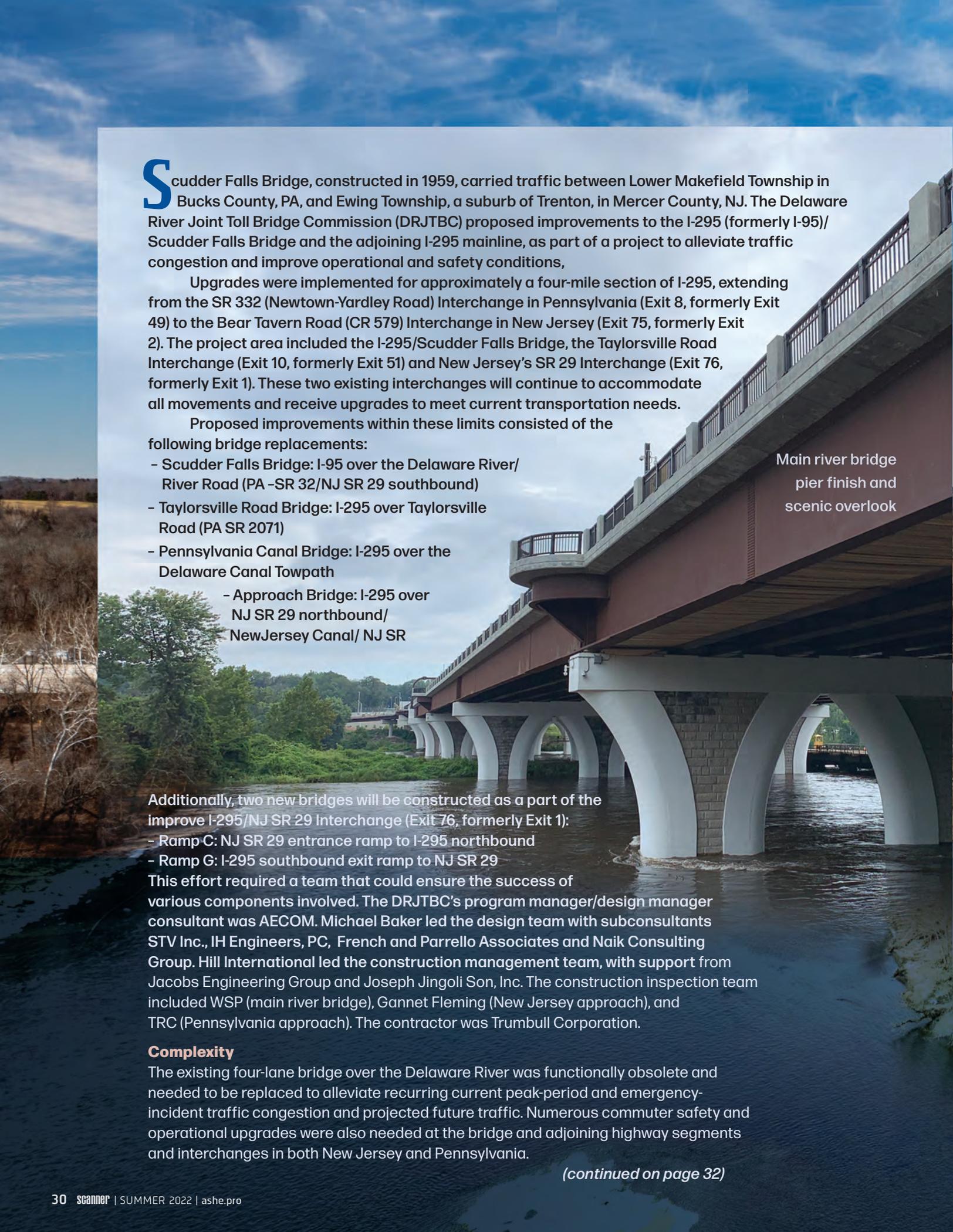


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**S**cutder Falls Bridge, constructed in 1959, carried traffic between Lower Makefield Township in Bucks County, PA, and Ewing Township, a suburb of Trenton, in Mercer County, NJ. The Delaware River Joint Toll Bridge Commission (DRJTBC) proposed improvements to the I-295 (formerly I-95)/Scudder Falls Bridge and the adjoining I-295 mainline, as part of a project to alleviate traffic congestion and improve operational and safety conditions,

Upgrades were implemented for approximately a four-mile section of I-295, extending from the SR 332 (Newtown-Yardley Road) Interchange in Pennsylvania (Exit 8, formerly Exit 49) to the Bear Tavern Road (CR 579) Interchange in New Jersey (Exit 75, formerly Exit 2). The project area included the I-295/Scudder Falls Bridge, the Taylorsville Road Interchange (Exit 10, formerly Exit 51) and New Jersey's SR 29 Interchange (Exit 76, formerly Exit 1). These two existing interchanges will continue to accommodate all movements and receive upgrades to meet current transportation needs.

Proposed improvements within these limits consisted of the following bridge replacements:

- Scudder Falls Bridge: I-95 over the Delaware River/ River Road (PA -SR 32/NJ SR 29 southbound)
- Taylorsville Road Bridge: I-295 over Taylorsville Road (PA SR 2071)
- Pennsylvania Canal Bridge: I-295 over the Delaware Canal Towpath
- Approach Bridge: I-295 over NJ SR 29 northbound/ New Jersey Canal/ NJ SR

Main river bridge pier finish and scenic overlook

Additionally, two new bridges will be constructed as a part of the improve I-295/NJ SR 29 Interchange (Exit 76, formerly Exit 1):

- Ramp C: NJ SR 29 entrance ramp to I-295 northbound
- Ramp G: I-295 southbound exit ramp to NJ SR 29

This effort required a team that could ensure the success of various components involved. The DRJTBC's program manager/design manager consultant was AECOM. Michael Baker led the design team with subconsultants STV Inc., IH Engineers, PC, French and Parrello Associates and Naik Consulting Group. Hill International led the construction management team, with support from Jacobs Engineering Group and Joseph Jingoli Son, Inc. The construction inspection team included WSP (main river bridge), Gannet Fleming (New Jersey approach), and TRC (Pennsylvania approach). The contractor was Trumbull Corporation.

### **Complexity**

The existing four-lane bridge over the Delaware River was functionally obsolete and needed to be replaced to alleviate recurring current peak-period and emergency-incident traffic congestion and projected future traffic. Numerous commuter safety and operational upgrades were also needed at the bridge and adjoining highway segments and interchanges in both New Jersey and Pennsylvania.

*(continued on page 32)*

# Replacing the Delaware River's Scudder Falls Bridge

by ASHE Delaware Valley Section



Main river bridge looking upriver



Taylorsville Road interchange (looking toward New Jersey)



Route 29 interchange (looking toward Pennsylvania)

ASHE  
Delaware Valley Section  
**2021 Project of the Year**  
Over \$20 Million



## All-electronic tolling building and Pennsylvania bike-pedestrian bridge connection

recreational canal paths on both sides of the river. The proposed inside shoulders were sized to allow for future mass transit service. In addition, Michael Baker designed an all-electronic tolling (AET) collection system in the southbound direction with high-speed E-ZPass tag readers and video cameras. These would identify license plates for collecting tolls by mail from motorists who did not have E-ZPass. Noise-abatement walls

were also designed along the approach roadways leading to and from the bridge.

### New Application of Existing Techniques

An intelligent transportation system equipment building was designed for the installation of the AET equipment and to provide shelter for the DRJTBC bridge monitors. The building was sized to house the proposed AET system equipment with consideration for future needs. Equipment housed in the toll building included, but was not limited to, lane controller cabinets, E-ZPass reader equipment cabinets and electrical, heating, ventilation and air conditioning, generator control/monitoring and network cabinets.

The client previously used a leased fiber optic system for connectivity between toll collection facilities. The provider of the leased fiber optic system will extend its service to the new building. Space was included in the toll equipment building for other leased communications systems for T1 connectivity, such as video surveillance systems, and for vendor demarcation and associated equipment. A stand-by generator was provided to support the AET equipment and associated building systems in the event of power failure or building maintenance. The generator and automatic transfer switch were located adjacent to the toll equipment building in a secure, weatherproof enclosure. Annunciation for remote alarm monitoring was provided. The distribution system for the generator included an uninterruptible power supply (UPS) system to eliminate disruption in AET system service. The UPS maintained power during generator start-up. 🇺🇸

## Replacing the Delaware River's Scudder Falls Bridge (continued from page 30)

The project involved replacement of the existing four-lane bridge with a twin-span structure carrying six lanes of through traffic (three in each direction), two auxiliary northbound lanes for entry/exit travel and one auxiliary southbound lane for entry/exit travel over the Delaware River. The project also included complete reconstruction of the deficient SR 29 Interchange on the New Jersey side and reconfiguration of the Taylorsville Road Interchange in Lower Makefield Township, PA, to improve the safety and efficiency of the interchanges.

Two roundabouts were constructed on the New Jersey side to improve the efficiency and safety of the interchange. The design followed Federal Highway Administration Roundabouts: An Informational Guide and National Cooperative Highway Research Program 672. Roadway work also included the widening of approximately two miles of I-295 (formerly I-95) on both approaches of the bridge. The effort entailed evaluation of existing guide rail and design of the appropriate roadside protection for the proposed improvements. A key element of the design was the roundabouts within the SR 29 Interchange.

The Scope of Work included drainage upgrades and other improvements along the approach highway between the SR 29 Interchange and Bear Tavern Road in New Jersey and widening of the Pennsylvania approach highway between the SR 332 Exit and the Scudder Falls Bridge by adding a lane in each direction. Michael Baker also designed a bicycle/pedestrian shared-use walkway connecting the



As a proud team member, congratulations to our friends at Michael Baker, the DRJTBC, and the entire Scudder Falls Bridge Replacement Team.

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# MileMarkers

News From Across ASHE-Miles



## ASHE Southwest Region Summit: Transportation Dollars and Sense

ASHE's newest Region, composed of the Phoenix Sonoran, Houston, Dallas-Fort Worth and Austin Sections, hosted the inaugural Southwest Summit on May 25, 2022. The Southwest is home to some of the nation's fastest growing communities and economies. Keeping pace with the infrastructure needs of that growth is challenging and requires vision, commitment and the ability to deliver. Approximately 100 guests convened to hear from industry thought-leaders, elected officials and public sector partners as they shared perspectives on the challenges and opportunities that lay ahead. The Southwest Summit: Infrastructure Dollars and Sense gave attendees the opportunity to:

- Meet and network with peers from throughout the Southwest
- Learn about programs under development and others currently delivered in the Region
- Discuss challenges related to funding infrastructure
- Discover how communities in Arizona and Texas are leveraging the new Infrastructure Investment and Jobs Act



Phoenix Mayor Kate Gallego gives the welcome address.

The program consisted of a morning breakfast and networking kick-off, followed by opening remarks and an update from Southwest Region President James Barr, Vice President and Unit Manager at T.Y. Lin International. Mayor Kate Gallego of the City of Phoenix welcomed attendees to the Valley of the Sun and stayed to hear from federal partners Karla Petty, Arizona FHWA Administrator, and Ray Tellis, Regional Administrator for Federal Transit Administration Region 9.

After a break and networking, Robin Dameron Ayers, Senior Congressional Liaison with Texas Department of Transportation, provided a Texas perspective. Attendees also heard from Arizona State Engineer Greg Byers and David Martin, President of the Arizona Associated General Contractors, regarding statewide initiatives and Maricopa County's upcoming election to continue its sales tax.

Guests earned continuing education units during a Funding and Programs: Ethics presentation provided by Joe Gervasio with Gervasio & Associates and Michael King with Gammage & Burnham. Guests then received an update from Sam Sargent, Capital Metro Director of Government Affairs, Austin, TX.

John Bullen, Transportation Economic and Finance Program Manager for the Maricopa Association of Governments, provided more insight into the Proposition 400E Maricopa County sales tax extension planning process, contents and status. The afternoon included a presentation from County Engineer and Transportation Director Jennifer Toth about diversity in the workforce.

The summit closed with a national perspective presented by ASHE Immediate National Past President Tim Matthews, along with a networking and social hour. The Phoenix Sonoran Section hosted the annual Scholarship Golf Fundraiser on the following day and generated approximately \$9,000 for the program. The Southwest Region plans to host future summits in alternating locations, so stay tuned about upcoming activities and events from our newest Region! 🇺🇸



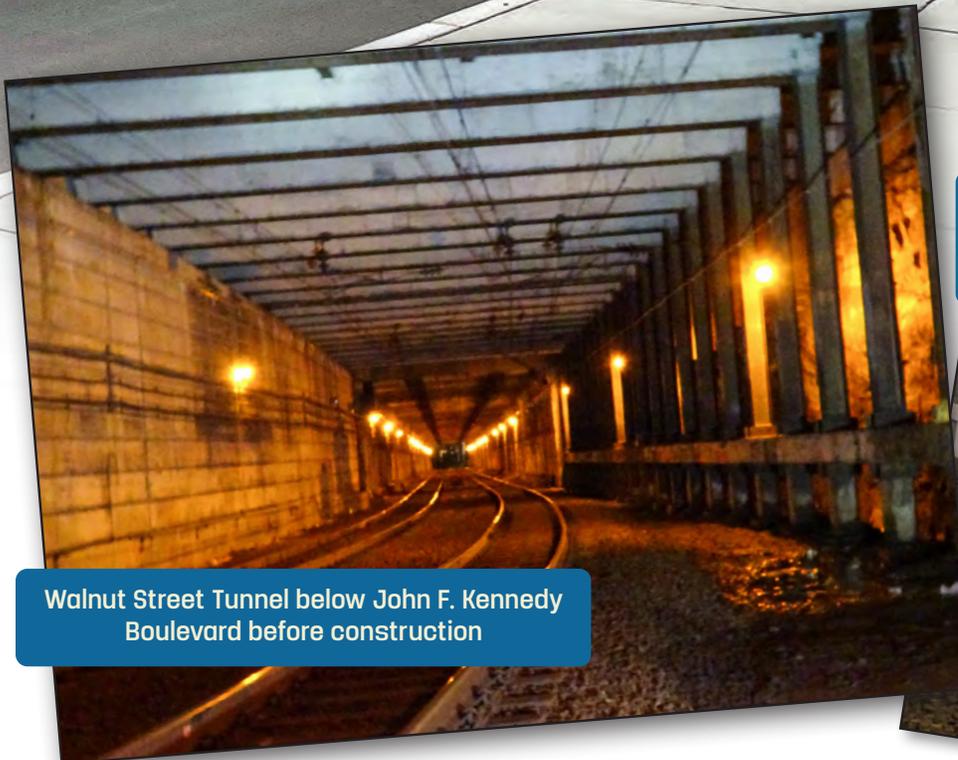
Photo by Zachary Radei

# Rehabilitating a Vital Connection in Philadelphia

by ASHE Delaware Valley Section

ASHE  
Delaware  
Valley Section  
**2021 Project  
of the Year**  
*Under \$20  
Million*

John F. Kennedy  
Boulevard reopened  
to traffic



Walnut Street Tunnel below John F. Kennedy Boulevard before construction

Columns repaired using ultra-high-performance concrete to protect and strengthen columns



**T**he Pennsylvania Department of Transportation's (PennDOT) SR 3028, known as John F. Kennedy Boulevard (JFK Boulevard), is in Center City, Philadelphia. The structure spans over Southeastern Pennsylvania Transit Authority's (SEPTA) Walnut Street Tunnel beneath 32nd Street. It also connects 30th Street to Market Street, providing a vital road network to nearby universities and the 30th Street Train Station. This project was the first rehabilitation for the bridge since it was built in 1955.

The main Scope of Work included bridge joint replacement, concrete deck repairs and critical steel repairs to remove the 15-ton load posting on the bridge. The total construction cost of the project was \$15.6 million. SEPTA let and managed the construction contract for PennDOT. Alfred Benesch & Company led the design team, and the construction inspection team included PennDOT, SP Engineering and Urban Engineers, Inc. The contractor was A. P. Construction.

### Complexity

In 2020, PennDOT District 6-0, in conjunction with SEPTA, began rehabilitation of the PennDOT bridge structure. It is located in SEPTA's Walnut Street Tunnel, which serves three busy SEPTA regional rail lines.

The 66-year-old bridge was mainly a two-span structure composed of non-composite concrete-encased rolled steel I-beams or built-up girders (in a few locations) with exposed bottom flanges. All spans had a concrete deck that was continuous over the interior support. The span lengths varied by location, and the beams were primarily oriented perpendicular to the direction of traffic, which was 90 degrees from normal. The substructure consisted of a reinforced concrete abutment cap on top of a stone masonry wall on the west. There was also a reinforced concrete cantilever abutment on shallow concrete foundation on the east and a steel pier bent composed of rolled

steel columns with an upper steel diaphragm and lower concrete/steel composite railroad collision strut. It was all supported on a shallow concrete foundation. The bridge/tunnel included a series of steel columns supporting the tunnel ceiling that were experiencing advanced corrosion and section loss. The stringers along the joint also had advanced section loss and deterioration.

This project included the rehabilitation of the interconnected "tunnel" structure, approximately 400 feet long (along the baseline) and 50 feet wide, supporting JFK Boulevard over SEPTA, with 185+ daily trains a day on two tracks with overhead electric catenary lines for train power. The project was also integral to the planned \$6.5 billion Schuylkill Yards urban revitalization initiative located in close proximity to the project area.

*(continued on page 36)*

Column repairs, beam and joint replacement and abutment work during construction



# Rehabilitating a Vital Connection in Philadelphia

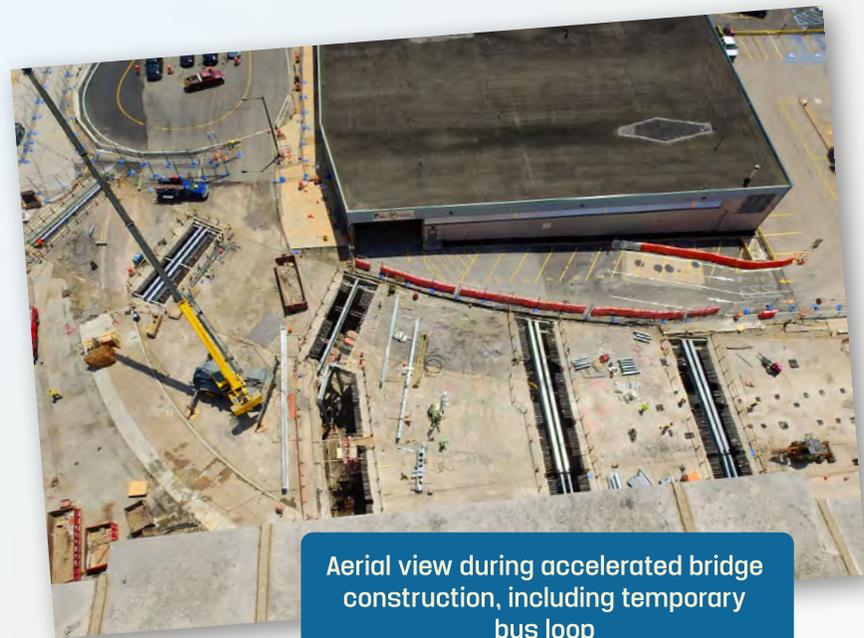
(continued from page 35)

This work required balancing the needs of PennDOT, the city, local businesses, SEPTA, public and private agencies, universities, vehicular/bicycle/pedestrian commuters and the residents in regard to traffic, schedule and budget. The project's goal was to extend the remaining useful life of the structure by at least 30 years. It included all the work that affected the SEPTA tunnel and was included in a SEPTA-sponsored project for improvements to the Walnut Street Tunnel.

## New Application of Existing Techniques

While the existing columns at the joints were replaced due to severe deterioration (up to 100 percent section loss in areas), it was not feasible to replace every column. The columns that remained between joints had section loss below the existing collision strut, due to moisture in the tunnel. The track-level drainage causing the issues was retrofitted to route the water away from the columns. Ultrahigh-performance concrete (UHPC) encasement was the preferred option for strengthening and protecting the steel columns due to the short construction duration. This was the first project using UHPC for steel column repairs in North America.

The existing concrete pedestals were removed down to the top of the footing. The pedestal was replaced from the top of the footing and extended to the bottom of the collision strut. The additional concrete on the pedestals addressed corrosion issues due to



Aerial view during accelerated bridge construction, including temporary bus loop

track level drainage along the columns. The project called for UHPC to be used for the deck closure pours and the pier bent column repairs, using PennDOT's standard special provision mix for UHPC with additional criteria. The specified mix required a minimum compressive strength of 12 ksi in 12 hours. In order to achieve this, the specification called for the use of accelerated heat curing before significant loading of the deck and columns was allowed. The UHPC concrete provided additional compressive and buckling resistance to the steel columns to compensate for the steel column section loss that was not plated with steel. It also protected against future corrosion of the column bases in the moist tunnel environment. Due to COVID-19, the 12-hour curing requirement was waived during construction, resulting in the use of conventional concrete for the deck closure pours.

The UHPC concrete was mixed in batches of six cubic yards with a ready-mix truck on top of the deck. The UHPC was lowered to track-level using a tremie line. Each column repair used one-and-one-half cubic yards of UHPC for 50 total columns repairs. All batches exceeded a

28-day compressive strength of 22 ksi and an average 56-day strength of 26 ksi.

## Social and Economic Considerations

SEPTA's Regional Rail service operates through the Walnut Street Tunnel seven days a week from 5 AM to 12 midnight. Trains are scheduled at least every half hour. It was agreed to schedule a three-week rail outage with substitute busing provided by SEPTA for the Airport Line and alternate service patterns for the other affected lines (Wilmington and Media/Elwyn) as the most efficient and least disruptive to SEPTA's passengers. Accelerated Bridge Construction began in March 2020, which coincided with the statewide COVID-19 shutdown. The project proceeded under emergency authorization by the governor, and the Airport Line outage was permitted to be extended to seven weeks due to low ridership during COVID-19.

As part of the traffic control for the project, a temporary bus loop was designed for the contractor to construct on the 30th Street Station side of JFK Boulevard. This allowed the bus stops to remain on JFK Boulevard and allowed the bus traffic to turn around with minimal impact from construction. 🇺🇸

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___Spring	<b>March</b>	January 15
___Summer	<b>June</b>	April 15
___Fall	<b>September</b>	July 15
___Winter	<b>January</b>	October 15
___One Year (4 issues)	___Each issue as checked above	

## Specifications:

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

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

## Payment (by check):

- \_\_\_ Payment enclosed for four issues (at discounted rate), made payable to ASHE
- \_\_\_ Payment enclosed for first issue; please bill me for each additional issue.

Send payment to:  
ASHE, 610 Radcon Street, Johnstown, PA 15904

**Email ad agreement and art files to:**  
[tammy@mytntgraphics.com](mailto:tammy@mytntgraphics.com)

## NEW DIRECTIONS

*(continued from page 3)*

This year, we will renew the Strategic Plan, incorporating the ideas and goals of Vice President Stan Harris and Second Vice President Don Di Zuzio to ensure that our three-year goals align with the development of the plan. In addition, I would like to continue the momentum that Tim Matthews achieved in pursuing departments of transportation, suppliers and contractor members. We have added a Membership Diversity committee under the Outreach umbrella to continue this effort. Finally, we have endeavored to take a thorough review of the role of the Regions along with committee structure. This is to ensure that the organization is properly supporting the Regions and leaning on them, where appropriate, for certain ASHE pursuits (e.g., new Sections and professional development).

I would like to encourage Sections to invite members of the National Board to attend Section events and meetings. Board members are ready to hit the road and visit with you. We are all busier than ever in the respective facets of the transportation industry. However, I would like to make getting the Board back in front of the Sections a priority for this year and will ask my fellow Board members to help me with this effort. I thank my employer, David Nelson Construction Company, for providing me with the support and flexibility to take on this role, and I look forward to meeting and learning from as many of you as possible this year.

Again, you get out of ASHE what you put into it, so please reach out if you have an interest in becoming more involved in your local Section, Region or a committee. There are so many different avenues to pursue, and we look forward to your participation! 🇺🇸



2022



**2022 ASHE National Conference**

**Registration**




MEMORIES

**AMERICAN SOCIETY OF HIGHWAY ENGINEERS**

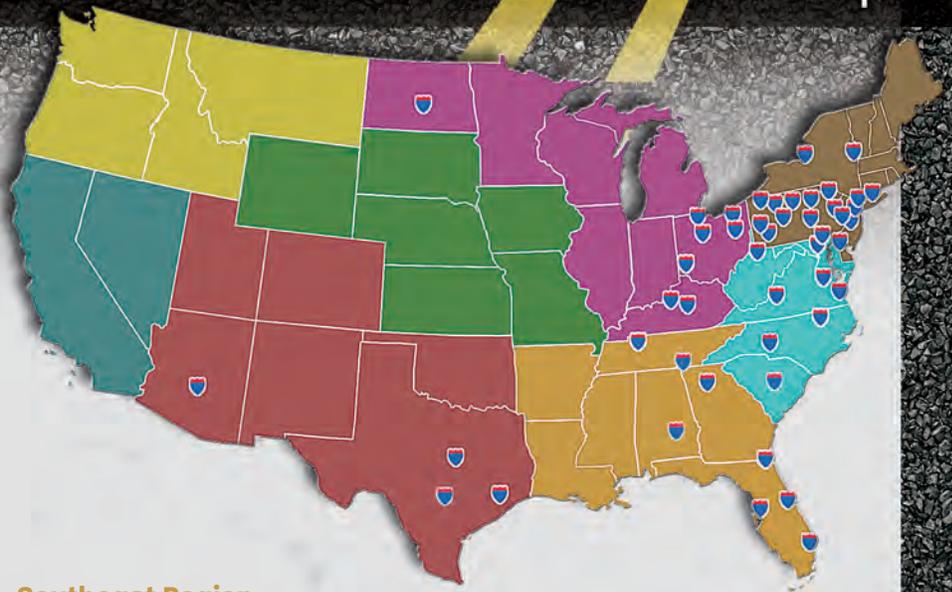
610 Radcon Street  
Johnstown, PA 15904

Change Service Requested



**ASHE**

# National Membership



**Regions and Sections**

**Northeast Region**

SECTIONS

Albany	84
Altoona	196
Central New York	50
Clearfield	174
Delaware Valley	344
East Penn	112
First State	198
Franklin	123
Harrisburg	369
Long Island	47
Mid-Allegheny	126
New York Metro	134
North Central New Jersey	136
North East Penn	134
Pittsburgh	523
Southern New Jersey	170
Southwest Penn	271
Williamsport	76

**Subtotal 3,267**

**Mid-Atlantic Region**

SECTIONS

Blue Ridge	64
Carolina Piedmont	68
Carolina Triangle	216
Chesapeake	281
Greater Hampton Roads	83
North Central West Virginia	51
Old Dominion	87
Potomac	157
South Carolina	101

**Subtotal 1,108**

**Southeast Region**

SECTIONS

Alabama	55
Central Florida	85
Georgia	541
Middle Tennessee	298
Northeast Florida	181
South Florida	11
Tampa Bay	46
Tennessee Valley	106

**Subtotal 1,323**

**Great Lakes Region**

SECTIONS

Bluegrass	95
Central Dacotah	96
Central Ohio	194
Cuyahoga Valley	106
Derby City	85
Lake Erie	209
Northwest Ohio	48
Triko Valley	158

**Subtotal 991**

**Southwest Region**

SECTIONS

Central Texas	71
Dallas-Fort Worth	35
Houston	101
Phoenix Sonoran	135

**Subtotal 342**

**National Total**

**7,031**

Professional Status	56%
Government	12%
Consultant	75%
Contractor	5%
Other	8%

**Emerging Section locations:**

- New Mexico
- Denver, CO
- Hartford, CT

**Want to join and don't see a Section near you? Visit our website to see how to start a new Section. [www.ASHE.pro](http://www.ASHE.pro)**