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**Weisenberger Mill Bridge
before replacement
in Midway, KY**

See page 28



**Tennessee's I-40 Improvements
Smooth the Way to a Better
Ride**

See page 16

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Tim Matthews, PE
ASHE National President 2021-2022



New Directions

As we enter 2021, we find our nation still faced with challenging times. The COVID virus is still wreaking havoc; however, we must face our challenges head-on and find the best in new beginnings.

I have had the pleasure to serve as your National President, and I hope to continue to guide this organization in a positive trajectory. Thanks to all the Sections that have reached out and invited me to their local Section and Region Board meetings. I have learned so much from each of you at these events. To me, one of the many rewards of being a member of ASHE are the things we learn from each other. I know that every state does things differently, but that is what makes our interaction so valuable. We can all take our experiences with each other back to our home organizations and apply new ideas and lessons learned. Keep up the great work!

In my last message, I announced a new initiative called “Coffee, Cocktails & Conversation with ASHE’s President.” I hope these virtual meetings can be fruitful and serve as a substitute for my not being able to travel. I do hope that we can all get out of our “bubble” and see each other again soon. That said, based on the inability to conduct our normal ASHE National business last year, the Board has passed a motion to extend the terms of the National President, First Vice President, Second Vice President and National Past President as allowed by our bylaws. The Board also passed a resolution to allow the National Directors to extend their current term a second year. This decision, not taken lightly, was coordinated through all the Regions for support. I am excited to have the opportunity to serve a second term to continue the mission of advancing our organization. My hope is that by July, I can start traveling to see all of you.



Please stay safe and actively involved in your Sections! 🇺🇸

In This Issue



6 SmartLane: A Shoulder to Drive On



12 Upgrade of White Horse Circle



20 Well on the Road to More Safety for Virginia's I-66



24 The Olentangy Trail/Bethel Road Connector

- 3- New Directions: President's Message
- 6- **ASHE 2019 Project of the Year Over \$5M, SmartLane: A Shoulder to Drive On**
- 10- 2021 ASHE National Conference
- 11- As the Wheel Turns
- 12- Upgrade of White Horse Circle Reduces Crashes, Eases Traffic Flow
- 16- Tennessee's I-440 Improvements Smooth the Way to a Better Ride
- 20- Well on the Road to More Safety for Virginia's I-66
- 24- **ASHE 2019 Project of the Year Under \$5M, Enhancing Accessibility with the Olentangy Trail/Bethel Road Connector**
- 28- **ASHE Bluegrass Section, 2020 Transportation Improvement Project of the Year Under \$5M, Replacement of the Historic Weisenberger Mill Bridge**

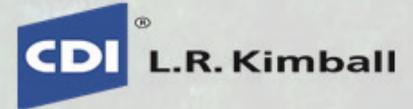
on the COVER
Replacement of the Historic
Weisenberger Mill Bridge
ASHE Bluegrass Section

See page 28



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SmartLane: A Shoulder to

by Brian Toombs, PE,
Burgess & Niple, ASHE
Central Ohio Section



From drivers' perspective, dynamic message signs use arrows, words and symbols to communicate which lanes are open and the current speed limit.

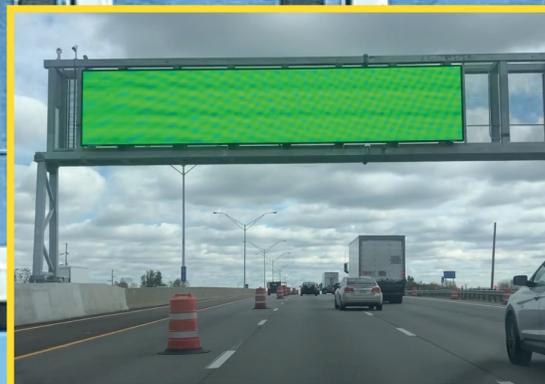
2019 ASHE
PROJECT OF
THE YEAR
OVER \$5M

The I-670 corridor serves as the primary artery connecting downtown Columbus, OH, to the I-270 outerbelt and past the John Glenn Columbus International Airport. The congestion during the evening commute presented an opportunity for the state's first Hard Shoulder Running (HSR) implementation. This project, called SmartLane, opened in October 2019 as the first HSR corridor in Ohio and the 14th constructed in the United States.

HSR allows temporary use of the shoulder to alleviate congestion during peak travel hours, creating a faster and more reliable commute. During congestion times, the Traffic Management Center (TMC) operators can open the shoulder to allow for an additional lane of capacity. The HSR solution is significantly less expensive than other options, such as traditional road widening. It uses the existing roadway infrastructure and typically requires fewer impacts to overhead bridges, interchange ramps and signs.

Drive On

SPEED
LIMIT
65



Dynamic message sign test screen before SmartLane opened to the public. On top-left edge of gantry, there is side-fire radar and one of the 46 closed-circuit TV cameras.

What Makes it Smart?

SmartLane incorporates intelligent transportation systems (ITS) to create a dynamic lane and communicate with drivers. Using 46 closed-circuit television (CCTV) cameras, the TMC operators can monitor traffic conditions and optimize flow, then communicate to the drivers via eleven dynamic message signs (DMS).

This communication includes emergent information, permitted lane usage and the variable speed limit (VSL). VSLs harmonize speeds and eliminate start-stop operations. According to former Ohio Department of Transportation (ODOT) Director Jerry Wray, the VSLs alone could allow up to 30 percent more vehicles through this busy area at a given time.

Innovation Presented Challenges

This Ohio HSR pilot project presented legislative challenges. In 2017, when the project design plans were under way, former Governor John Kasich requested the passage of special legislation to permit permanent VSLs in this corridor. The legislation included allocating funds to study the effects of different speed limits within the corridor. The law took effect in 2018, allowing the SmartLane project to move forward.

This project required a change in driver behavior. Typically, drivers refer to permanent signs located near the ground on the road's right side to know the speed limit. Now, they must look up to the DMS to see the current speed limit. To address this, the design team met with stakeholders and ODOT to develop a unified message for the public, complete with examples, drive-through simulation videos and scenario workshops. *(continued on page 8)*



**SmartLane:
A Shoulder to Drive On**
(continued from page 7)

The ramp braid required widening the middle-level bridge, wedged between piers from the top-level bridge, from three to four lanes.

There were only 13 active HSR corridors at the completion of design, so there was not an abundance of HSR data or lessons learned. This led the design team to reach out to several DOTs that had implemented HSR for a list of their best practices.

Compressed Schedule

ODOT required a nine-month project development schedule to accommodate funding for the project. Burgess & Niple (B&N) completed a Value Engineering workshop that identified \$10 million in construction cost savings for the project to meet this schedule. B&N also managed stakeholder communications, including public meetings and targeted stakeholder meetings, as well as public outreach and education. The firm used interactive strategies. It conducted hands-on workshops and in-person traffic modeling demonstrations, coordinating with the Federal Highway Administration (FHWA) to obtain the Systems Engineering Analysis and Design Exception approvals concurrently with the design and keep the project on schedule.

Stakeholder Coordination

Stakeholders for this project included several government agencies, the Mid-Ohio Regional Planning Commission, City of Columbus, John Glenn Columbus International Airport, public safety, first responders and FHWA. Coordination with the City of Columbus Division of Power was needed to identify the power sources, power the information technology systems (ITS) and develop the temporary ITS alignment used to carry 911 dispatch calls.

B&N met with those who routinely used the shoulder, such as emergency services and the Central Ohio Transit Authority (COTA). COTA's buses were formerly permitted to use the left (median) shoulder on I-670 when speeds dropped below 35 mph. SmartLane eliminated this option for the COTA bus when the shoulder was in use. However, to mitigate their loss, B&N created a solution that prevents speeds from dropping below 35 mph, allowing the buses to use the "general purpose" lanes without needing to use the shoulders.

Eliminating Congestion Down the Road

The analysis showed that SmartLane would relieve congestion within the I-670 corridor. However, to achieve maximum benefit, the SmartLane needed to extend beyond the additional lane of capacity to avoid shifting congestion to another spot on the corridor. It required modification to the I-270 interchange where I-670 eastbound terminated, to eliminate problematic weaving movements. This was resolved by braiding critical ramps in the interchange to improve traffic flow and safety performance. The project also added a lane through the center of the interchange as the extension of SmartLane. With this addition, drivers in SmartLane were not forced to merge into the “general purpose” lane, and traffic could continue to flow freely into the interchange.

A Safer, More Reliable Commute

Located on the heavily traveled I-670 corridor near John Glenn Columbus International Airport, SmartLane creates a more reliable commute for those who work in Columbus and for people traveling from out of state. SmartLane can also be used during off-peak times for special events, such as The Ohio State University football games or festivals in downtown Columbus that have specific ending times. This gave ODOT flexibility on how to best apply this new technology, given various road conditions.

Former ODOT Director Jerry Wray said, “This project is a smart investment for Ohio. By repurposing the shoulder, which already exists, and investing in state-of-the-art technology, we are able to decrease congestion in this corridor without the high costs and long timelines associated with highway widening. Ultimately, we believe the combination of the extra travel lane and the reduced speed limits will allow for a more reliable commute for travelers along that route.” 🇺🇸

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Dewberry Promotes Curt Sanno in the Firm's Mechanicsburg, PA, Office

Fairfax, VA—**Curt Sanno, PE, CBSI**, was promoted to vice president and serves as the business unit manager of Dewberry's Mechanicsburg, PA, office. **Sanno has served on the Board of Directors of the ASHE Harrisburg Section** and has more than 18 years of experience working on numerous bridge and transportation projects. His technical expertise is in preliminary design, preparation of final plans, specifications and estimates for bridge elements. He earned his Bachelor's degree in Civil Engineering from Penn State and is a professional engineer in Florida, Pennsylvania and Virginia.

He was named a 2019 Top Young Professional by *ENR Mid-Atlantic*. Sanno is also a member of the American Council of Engineering Companies, American Railway Engineering and Maintenance-of-Way Association, Association for Bridge Construction and Design, Pennsylvania State Association of Boroughs and WTS.

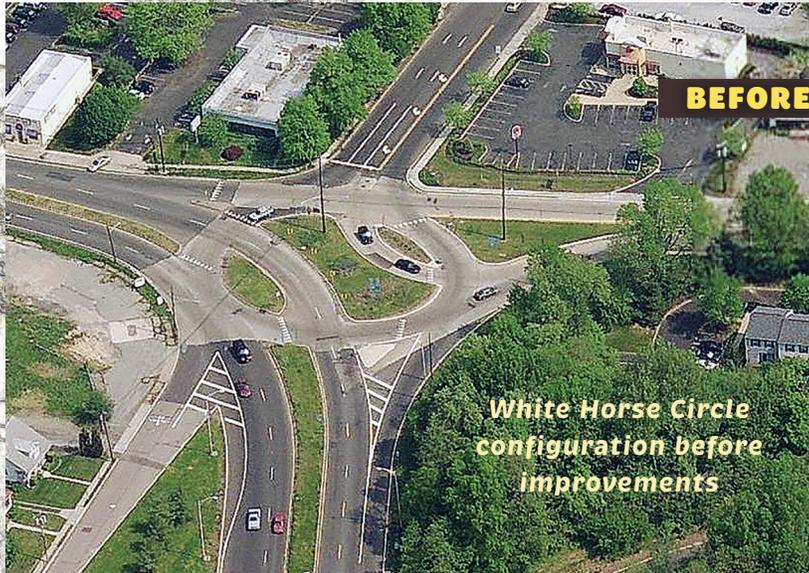
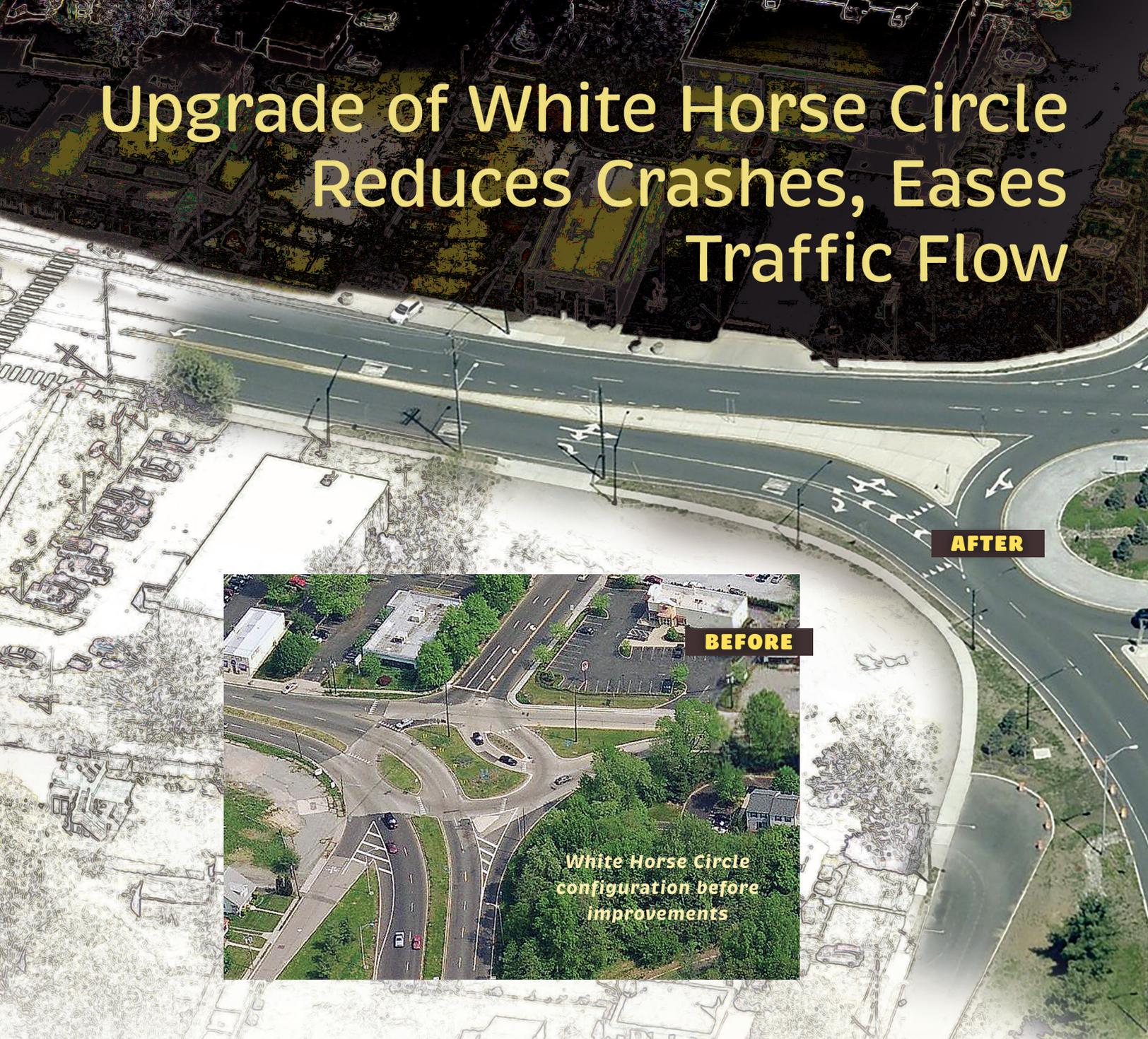


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Upgrade of White Horse Circle Reduces Crashes, Eases Traffic Flow



by Daniel Hutton
and Adam Brown,
PE, Urban Engineers,
ASHE Southern New
Jersey Section

Once referred to as a “death trap” by the Times of Trenton, the intersections of US 206, South Broad Street and White Horse Avenue were overdue for a change. For drivers in Hamilton Township, White Horse Circle was more akin to a maze than an intersection; drivers often avoided it because of the confusing crisscrossing lanes at the intersection. Between 2006 and 2008, there were 161 crashes at the intersection, and 56 of those included injuries.

The New Jersey Department of Transportation (NJDOT) began exploring ways to improve safety at the circle and enlisted Urban Engineers (Urban) to develop conceptual designs for several options, including a modern roundabout that was ultimately selected for construction. Rather than cutting through the circle, all approaching vehicles would yield to circulating vehicles within the roundabout. This design removed several conflict points that existed in its original configuration. *(continued on page 14)*



Pre-construction: Southbound double yield move crossing both northbound and southbound US 206



Post-construction: Northbound US 206 passing Broad Street westbound entrance

Upgrade of White Horse Circle Reduces Crashes, Eases Traffic Flow

(continued from page 12)



Completed
White Horse
Circle project



View of circulating roadway,
using intelligent transportation
system camera

Promoting the roundabout as a solution in a state known for removing “traffic circles” was not an easy task. Along with NJDOT, Mercer County and Hamilton Township, Urban educated the public on the difference between roundabouts and traffic circles. These entities demonstrated how the roundabout was the best solution, through pamphlets, presentations, virtual modeling and Q&As. Urban worked with partners to create a multistaged traffic control plan with limited detours. The firm designed a single/double lane hybrid roundabout 170 feet in diameter with 16-foot-wide lanes. Each approach had a splitter island, and the White Horse Avenue and South Broad Street approaches both included high-visibility crosswalks.

Completed in April 2018 by South State, Inc., the roundabout serves as a gateway into Hamilton Township that is safer for drivers and pedestrians. It also provides a smooth transition from the multilane highway section of US 206 to the residential streetscapes of town. In the first six months since its completion, improvements to White Horse Circle resulted in decreasing the average total crashes per month by 71 percent and total injury crashes by 93 percent. 🇺🇸



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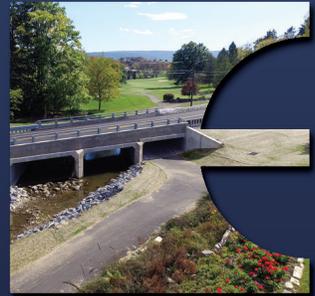
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Tennessee's I-440 has provided a critical southern bypass around the City of Nashville for more than three decades. Because of safety concerns and the desire for an improved ride, due to the rapidly deteriorating condition of the existing pavement, the public demanded updates and improvements.

Project Need and History

The \$154.8 million reconstruction of I-440, between I-40 and I-24 in Nashville, is the single largest transportation project in the history of the Tennessee Department of Transportation (TDOT). Procured via the design-build (DB) delivery method, this project served as a focal point for the Improving Manufacturing, Public Roads and Opportunities for a Vibrant Economy (IMPROVE) Act of 2017. The IMPROVE act, which increased fuel taxes for the first time since 1989, also required the completion of 962 critical transportation projects throughout Tennessee.

The original "Four-Forty Parkway" was designed and constructed in the 1980s to address urban congestion in Nashville that had grown, due to a trucking industry boom at that time. The highway created a way for traffic to avoid downtown Nashville. However, the four-lane highway was built to accommodate up to 64,000 vehicles per day. Today, the corridor averages 100,000 vehicles per day, and the eastern terminus was once ranked as the nation's third worst freight bottleneck by the American Transportation Research Institute.

The project just completed involved reconstruction of nearly seven miles of roadway and included a full-depth replacement of deteriorated concrete pavement with asphalt, the addition of a third travel lane in each direction and ramp safety improvements at the 21st Avenue and Murphy Avenue exits. Work also entailed the widening of three bridges, removal of an elevated median, upgrades to the intelligent transportation system and roadway lighting, noise walls, rock fall mitigation and landscaping improvements. The I-440 over I-65 and CSX Railroad was one of the most challenging aspects and posed the largest potential risk factor for delaying the schedule. The work required the widening of a pair of 1,000-foot-long bridges on the fourth level of the system interchange.

Design-Build Team and Process

TDOT awarded the project to Kiewit Infrastructure South with WSP USA serving as the team's designer in August 2018. The DB schedule for completion was

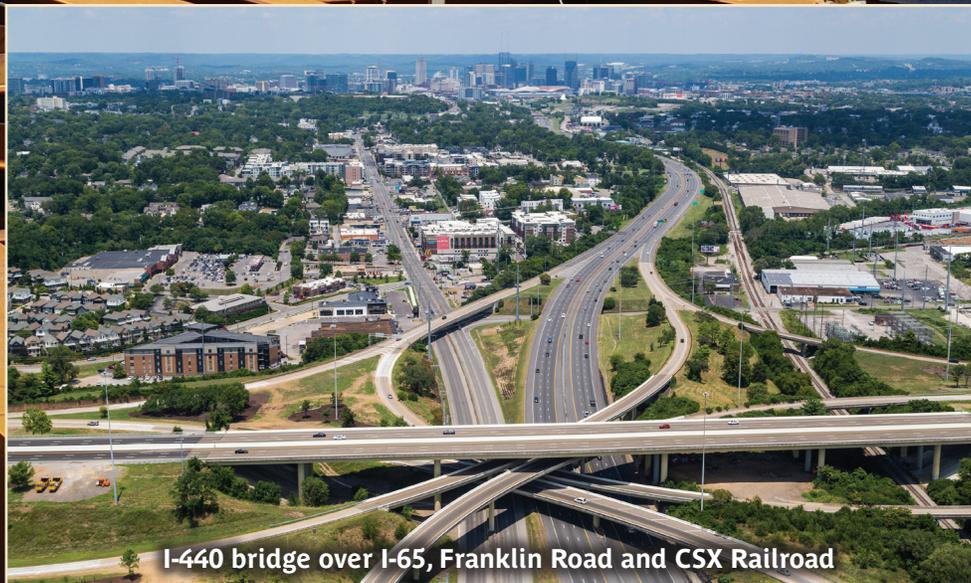
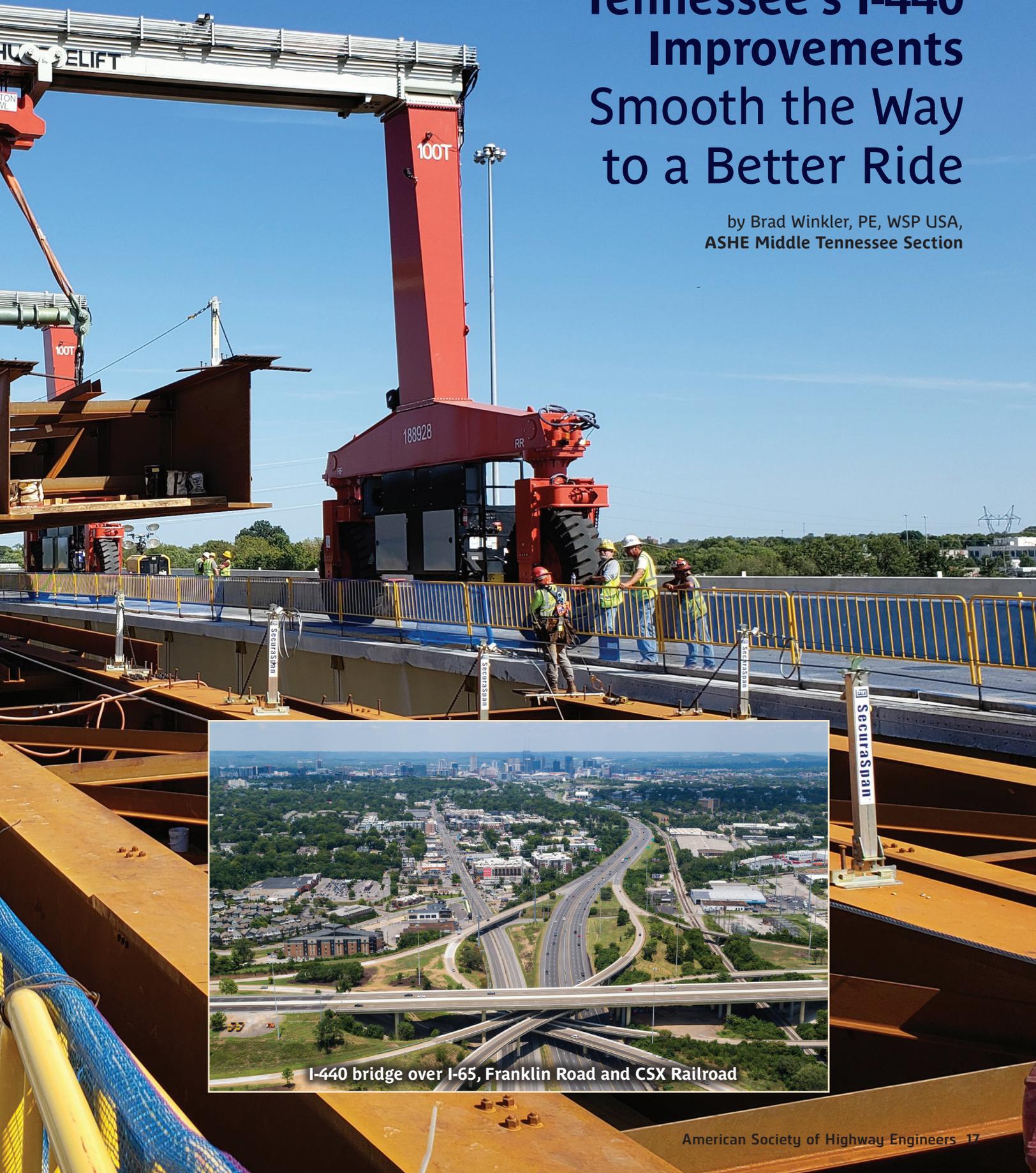
(continued on page 18)



A gantry rolled girders into position.

Tennessee's I-440 Improvements Smooth the Way to a Better Ride

by Brad Winkler, PE, WSP USA,
ASHE Middle Tennessee Section



I-440 bridge over I-65, Franklin Road and CSX Railroad

Tennessee's I-440 Improvements Smooth the Way to a Better Ride

(continued from page 16)

set at 708 days. The project included a disincentive, if not completed on time, of \$100,000 per day for the first 30 days and \$400,000 each day after. This was a substantial motivator for all parties involved.

Throughout the fall of 2018, design progressed. Permits were secured, and utility coordination and constructability reviews and approvals from TDOT, the Federal Highway Administration and vendor shop drawings were well under way. The DB team, with TDOT's approval, released a series of early works packages that focused on critical elements requiring construction prior to other activities. This work included new noise walls, relocation of existing fiber and two ramp terminal improvement projects. These early works packages were approved for construction by November 2018, which allowed limited construction to start in December 2018. Heavy construction commenced in earnest in early 2019.

Pavement Rubblization

This project included the implementation of a rubblization process. Rubblization for the I-440 project involved the crushing of the top layer of the concrete pavement, which was then recycled for use as graded base material for the final asphalt pavement.

The rubblization process decreased the amount of debris that needed to be hauled off-site or directed toward landfills. It also reduced the number of trucks leaving the construction site and subsequently creating traffic congestion issues on other roadways. The contractor estimated reducing the number of truckloads of import/export materials by 25,000.

I-440 Over I-65 Bridge Widening

One of the more significant aspects of the project involved the widening of the twin bridges on the fourth level of the I-440/I-65 interchange, which also crossed Franklin Road and CSX railroad. The bridges, over 1,000 feet in length (with a span arrangement of 115-166-282-205-160-102 feet), have only a 32-foot gap between them. The bridge reaches a maximum height of 80 feet over I-65 mainline lanes.

The alignment of I-440 at this location was curved with a radius of 3,820 feet and three and six-tenth percent superelevation, which precluded combining the two structures into one and further compounded the design and construction. The existing bridges were built with steel tub girders. The proposed design called for the addition of continuous steel plate girder pairs for each bridge.

Due to location constraints, the DB team determined that the use of cranes at this location would not be optimal. Rolling gantry cranes were used to place rebar cages for the drilled shafts and pier columns, and to lift girder pairs from the roadway median to place them on the substructures. Bridge piers consisted of reinforced concrete hammerhead piers supported on single drilled shafts. Work at this interchange was constrained for maintenance of traffic, with only a few weekends allowed for closures of the interchange. Girder erection schemes allowed much of the girder fit-up to occur off the bridge, thus limiting the amount of time required when a full closure was needed.

Project Completed During COVID-19

A ribbon-cutting ceremony to mark the roadway's reopening took place in July 2020, a month ahead of schedule. About the I-440 project, Tennessee Governor Bill Lee said, "This roadway is a vital part of Nashville and Middle Tennessee's transportation system, and it will now be capable of serving this community for decades to come."

Due to COVID-19, the ceremony to celebrate the opening of the reconstructed highway was modified from such traditional events. A 60-vehicle caravan paraded through the project corridor, escorted by TDOT HELP trucks. Vendors and contractors along the route celebrated the project's completion.

COVID-19 has lessened the anticipated impact of the reconstruction project as traffic volumes have not yet returned to normal levels. However, feedback so far has revealed that the ride is smoother, and the two additional lanes have created improved free-flow vehicle movement along the new stretch of highway. 🇺🇸





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Segment One near
Gainesville, VA:
new lanes



TRANSFORM 66
OUTSIDE the Beltway

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Well on the Road to More Safety, Better Traffic Flow on Virginia's I-66

by Cerasela M. Cristei, PhD, PE, PTOE, EXP USA,
Past President, ASHE Potomac Section



One of the major thoroughfares through the Commonwealth of Virginia, I-66 has been under construction since 2017. Virginia Department of Transportation (VDOT) has stayed abreast of technology innovations through all of its construction activities, along with the unforeseen changes that occurred over the past year. VDOT remains committed to its mission to “plan, deliver, operate and maintain a transportation system that is safe, enables easy movement of people and goods, enhances the economy and improves our quality of life.”

Part of the 1,119 miles of the Interstate Highway System in Virginia, I-66 stretches from I-81 in Warren County to the Potomac River, the border to the District of Columbia for a length of 75 miles, as it crosses the Blue Ridge Mountains and Potomac River.

The first nine-mile section opened in December 1961 stretching from US 29 in Gainesville to US 29 in Centerville. In November 1964, the interstate was extended, connecting US 29 in Centerville to I-495 for a stretch of 21 miles. This portion of I-66 was built with three lanes in each direction of traffic, and it is now under construction again.



Bridge deck ramp
from Braddock Road
to SR 28 south and
I-66 west



Noise wall
installation
at SR 123
interchange

The interstate went through several widening initiatives:

- In 1993, a fourth shoulder lane was added, to be opened during peak hours to allow the inner lane to operate as a high-occupancy vehicle lane.
- In 1997, it was widened from four and six lanes to eight lanes for an 18-mile stretch between SR 234 and I-495.
- In 2006, a four-mile widening was completed between SR 234 and the SR 234 bypass, adding two lanes in each direction.

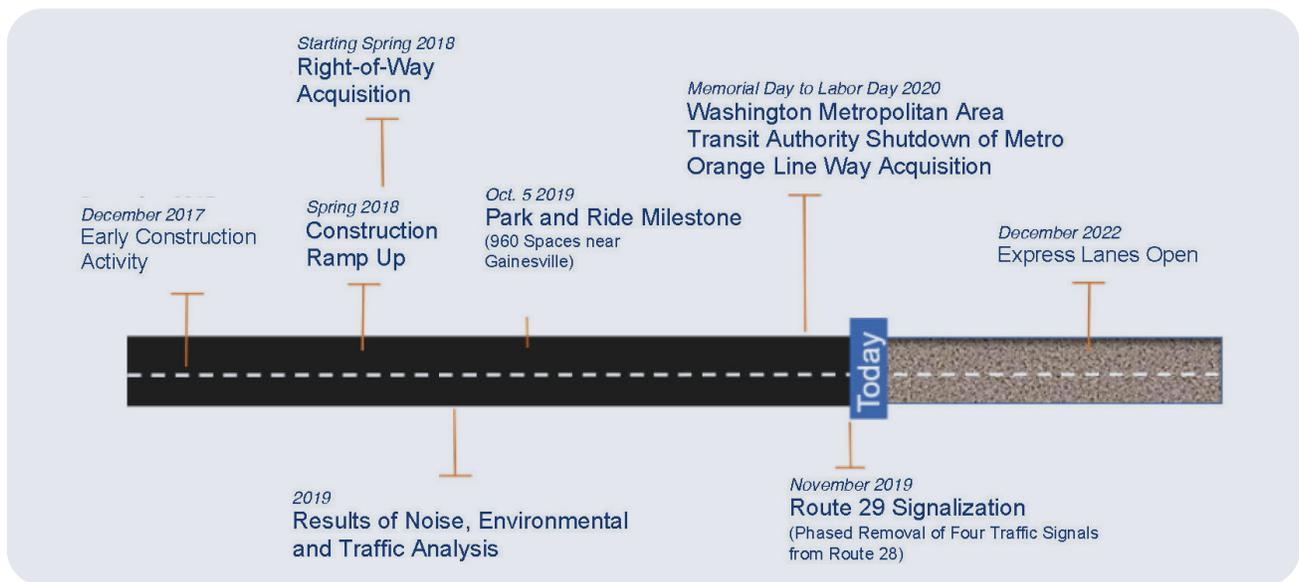
Traffic volume increased to the point that I-66 became a bottleneck. After nearly a decade of studies, plans, reports and public meetings, in 2016 the Commonwealth of Virginia selected I-66 Express Mobility Partners to finance, design, build and operate the express lanes on I-66 outside the Beltway.

The project is a Public-Private-Partnership (P3) procurement

between VDOT, Department of Rail and Public Transportation and the private partner. During the four years of lane shifts, temporary lane closures and numerous traffic changes, the construction team employed several programs to help the traveling public stay mobile, including measures to:

- Take the bus, with half-price fares, rides for \$1 on Fairfax Connector selected routes and a commuter bus service from Front Royal to Washington, DC.
- Form a vanpool, offering monthly memberships at \$150 for riders in a vanpool of five or more.
- Start a carpool program, with rewards up to \$130 for new carpoolers and an additional \$100 for commuters who started a three-person carpool on I-66.
- Telework, with technical advice, on-site assistance and financial incentives for

(continued on page 22)



Well on the Road to More Safety, Better Traffic Flow on Virginia's I-66 (continued from page 21)

interested employers. (At two of the virtual meetings held by ASHE Potomac Section in September and October 2020, VDOT and industry leaders spoke about telework programs implemented across all trades. VDOT representatives said their Construction Quality Improvements Program, Construction On-Budget and On-Time programs were above the minimum target.)

All of the options were eligible for the Commuter Connection Guaranteed Ride Home program, implemented throughout the life of the project.

To continue the adjustment to the new normal work conditions, VDOT implemented the tablet-based inspection and PlanGrid programs in October 2020 on the I-66 Outside the Beltway Project, in parallel with 49 other projects across eight districts. According to VDOT, PlanGrid is a "construction productivity software application that allows construction staff to remotely access plans, mark up PDF copies of plan sheets, attach pictures to plan sheets, compose daily work reports and collaborate with other project staff."

The project construction under way includes the following major interchanges and crossing bridge locations (listed from west to east along the project alignment):

- US 29 in Gainesville: University

Boulevard Park and Ride lot with 2,200 spaces is being finalized.

- SR 234 (Sudley Road): New bridge is under construction for ramp from I-66 west to Sudley Road.
- SR 28 (Sully Road): New bridge for SR 28 north is being built, along with multiple ramps and flyovers at this interchange.
- SR 286 (Fairfax County Parkway): Retaining walls and noise walls are to be added.
- SR 50: Retaining walls and noise walls are under construction, in addition to preparations for rebuilding Waples Mill Road Bridge.
- SR 123 (Chain Bridge Road): Retaining walls and noise walls are being built, and there are changes in traffic patterns to accommodate new express lanes by moving and adding necessary ramps.
- Nutley Street interchange is under construction.
- I-495 (Capital Beltway): Bridge piers for new ramps to connect existing and new express lanes are being built. New piers and abutments for the new Gallows Road Bridge are also under construction. Washington and Old Dominion Trail Bridge is undergoing slight realignment to accommodate new ramps for the project.

The new express lanes are scheduled to open in December 2022. 🇺🇸



Sucevic, Piccolomini
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Enhancing Accessibility with the Olentangy Trail/Bethel Road Connector

by Michelle Bosco, PE, Burgess & Niple, ASHE Central Ohio Section

2019 ASHE PROJECT OF THE YEAR UNDER \$5M

Precast concrete tunnel connected new trailhead to Olentangy Trail; trail users can avoid directly crossing SR 315 on-ramp traffic.



Running through central Ohio, the Olentangy Trail is a heavily used pedestrian and bike path that connects the northern Columbus suburb of Worthington to the Scioto Trail in downtown Columbus. The first sections of the trail were constructed more than 30 years ago, and it now has an estimated 400,000 combined bicycle and pedestrian users per year.

The City of Columbus Recreation and Parks Department wanted to improve connectivity, reduce congestion and improve safety between an area known as the Bethel Road corridor

and the trail. Burgess & Niple (B&N) was selected to lead the project, known as the Olentangy Trail/Bethel Road Connector, which included the design and construction of a new trailhead, a shared-use path as an off-street trail connector and widening of a portion of the existing trail.

Connecting Communities

The Olentangy Trail/Bethel Road Connector improved accessibility within the community and to the surrounding areas. The new trailhead decreased the distance between access points to the trail for nearly 30,000 people in the

Bethel Road corridor and reduced the distance that users must travel on a shared roadway before reaching the trail.

“As Columbus continues to grow, we know that connecting residents from their homes to where they need to go, through projects like the Bethel Road trail connector, is a critical part of focusing our growth in smart and sustainable ways,” said Elizabeth Brown, Columbus City Council and President Pro Tempore.

By connecting the Bethel Road corridor with the trail, people in the area have better access to surrounding commercial

developments and neighborhoods, including 13 parks, downtown Columbus, The Ohio State University campus and the City of Worthington. In addition, the project included trail-wide curb ramps that comply with the Americans with Disabilities Act for the new shared-use path.

Meeting Congestion and Safety Needs

The narrow width of the trail created congestion during peak hours for trail users. To address this, the design incorporated widening nine-foot sections of the trail to a preferred 12-foot width per the recommendations in the AASHTO (American Association of State Highway and Transportation Officials) Guide for the Development of Bicycle Facilities.

Another major concern was user safety. The design had to move trail system users through the busy SR 315/Bethel Road interchange. Construction also included a grade-separated tunnel under the freeway on-ramp, which required detailing the precast box and wingwalls so that the contractor could limit the ramp closure to no more than 30 days, as mandated by the contract.

A rectangular rapid flashing beacon was added for enhanced visibility and safety. Another tunnel was not feasible due to adjacent wetlands that could not be disturbed.

Navigating the Project Site

Due to the project's location over and around SR 315, a limited access facility owned by Ohio Department of Transportation (ODOT), significant coordination with the state agency was required to find an acceptable alternative. This presented a challenge during the preliminary engineering stage of the project when multiple alternatives were considered. Arriving at a design alternative that satisfied the project goals was complicated by several factors, including the project's location within the 100-year floodplain and a 12-inch sludge pipeline through the project limits.

Cost-Effective Solutions

Project stakeholders determined that widening the bridge would not be cost-effective. To avoid any widening, the final design repurposed the width of the existing structure over SR 315. *(continued on page 26)*

Using space between SR 315 and the SR 315 on-ramp allowed trail users to avoid traffic while connecting to the existing trail.



Rectangular rapid flashing beacon at SR 315 southbound to Bethel Road off-ramp crossing enhanced visibility and safety.





The widened trail accommodates cyclists and pedestrians while combating congestion along the trail segment.

added along the bridge fascia to support a new fence, and the other was placed between the shared-use path and vehicle travel lane to enhance safety.

A micro-silica concrete deck overlay was added between the new barriers to improve drainage and rideability along the

shared-use path. This solution required structural calculations and an updated bridge load rating analysis to ensure that the structure could support the additional barrier weight; however, it ultimately reduced costs.

A trail ramp was created from the unused SR 315 infield area. Construction elevated the ramp by using embankment,

maintaining all proposed work outside of the SR 315 clear-zone and shielding it with the existing Bethel Road bridge forward abutment.

Improved Accessibility and Safety

By working with the City's Recreation and Parks Department and ODOT, the Olentangy Trail/Bethel Road Connector was completed in 2019, meeting project goals to enhance accessibility, reduce congestion and improve safety. "We're excited to see the Olentangy Trail/Bethel Road Connector come to fruition," said Paul Rakosky, Interim Director of Columbus Recreation and Parks Department. "This has been on the wish list for northwest Columbus for many years, and it will be a powerful addition to their active transportation system." 🇺🇸

Enhancing Accessibility with the Olentangy Trail/Bethel Road Connector

(continued from page 25)

The existing median between the eastbound and westbound travel lanes was narrowed to create enough space on the existing structure to incorporate a 12-foot shared-use path and new adjacent barriers. One barrier was

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Frederick Douglass Memorial Bridge
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New Pratt pony truss transported to site



New truss lifted in place

Historic Weisenberger Mill Bridge

by Casey Smith, PE, ASHE Bluegrass Section

The Weisenberger Mill Bridge in central Kentucky sits between Lexington and Frankfort, in the heart of the Bluegrass. The bridge, adjacent to the Weisenberger Mill, is the central point of a historic district. The mill, in continuous operation since 1913, has been owned by the same family for six generations.

The purpose of the Weisenberger Mill Bridge project was to provide a safer, more structurally sound crossing over South Elkhorn Creek on Weisenberger Mill Road. The existing bridge, built in 1930, was a 72-foot, single span, single lane, steel Pratt pony truss.

A public information meeting in January 2013 gathered input on whether to rehabilitate or replace the existing bridge. The public preferred to rehabilitate the bridge, if possible. However, after further investigation, it was determined that rehabilitation would be costly for the additional service life expected. A second meeting in October 2014 informed the public of the findings and presented an option to reconstruct the bridge with a two-lane truss similar in structure and style. Presentation of this alternative brought opposition from the community and heightened the level of controversy in respect to the sensitive historic nature of the area.

Despite maintenance repairs to the bridge in the last three decades of its life, the bridge was listed as structurally deficient, with a sufficiency rating of 17, and the weight limit gradually decreased from 15 tons to 3 tons by 2015. The bridge was closed in July 2016, requiring the community to travel a 13-mile detour on state routes or on less traversable county roads for a five-mile detour.

The Kentucky Transportation Cabinet (KYTC) decided to use federal funding for replacing the bridge in August 2016, which required the bridge project to follow the processes set forth in the National Environmental Policy Act of 1969. The cultural historic survey identified several resources eligible for listing on the National Register of Historic Places within the area of potential effect. These resources, which included the mill and bridge, were determined to comprise the 25-acre Weisenberger Mills and Related Buildings National Historic District. Section 4(f) avoidance alternatives were examined but found to be neither feasible nor prudent.

Through a consultation process, a memorandum of agreement (MOA) was developed and signed at the end of 2018.

(continued on page 30)



Replacement of the Historic Weisenberger Mill Bridge

(continued from page 29)

The commitments in the MOA included replacing the bridge with a one-lane Pratt pony truss bridge of similar scale and form as the original and installing interpretive signs that described development of the historic district. It also entailed reusing the existing abutments and applying a smooth surface shotcrete treatment, monitoring of vibration at the Weisenberger Mill building (out of concern for damage from vibration during construction) and a recordation of the bridge using State Level I Documentation. The final environmental document was signed by the Federal Highway Administration in January 2019, through a Categorical Exclusion Level 3.

One of the more challenging objectives of the project was how to preserve and reuse the existing abutments. To prevent the abutments from further movement, a plan was devised with the use of a series of soil nails and micropiles. The micropiling around the base helped provide the necessary scour protection. Each pile was specifically located so as not to collide with the soil nails around the abutment and retaining walls. Per the stipulations listed in the MOA, the applied shotcrete was given a smooth finish for the desired appearance.

Following the acquisition of only three temporary construction easements, the project was awarded for construction in August 2019 to Louisville Paving Company, Inc., for \$877,000. The old structure was removed in one piece by crane and hauled away. After the removal of the superstructure, the geotechnical work on the abutments followed, with the micropiles and soil nails installed and protected with shotcrete.

The superstructure was placed after the abutments were complete. To reduce the environmental impacts, as well as impacts to the mill business, the new truss bridge was assembled off-site, approximately four miles away, and transported by a semi-truck in one piece to the project site. Despite some tight squeezes along the way, the superstructure arrived intact.

Although the fixed completion date was in May 2020, the contractor was able to reopen the bridge in December 2019, a gift to a community that went without a crossing for over three years.



As a result of the teamwork between KYTC, design company H.W. Lochner and Louisville Paving Company, Inc., the Weisenberger Mill Bridge received an ASHE Bluegrass Section 2020 Transportation Improvement Project Award. 🇺🇸

The first bike rider across the new Weisenberger Mill Bridge





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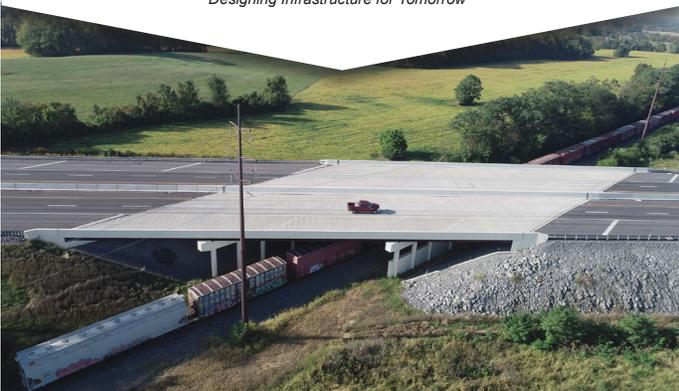
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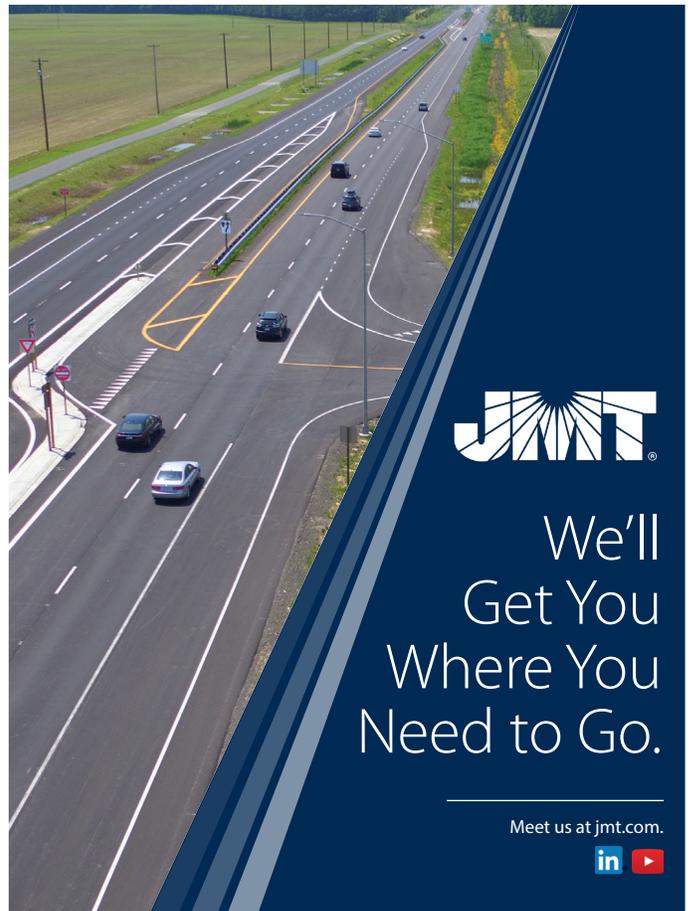
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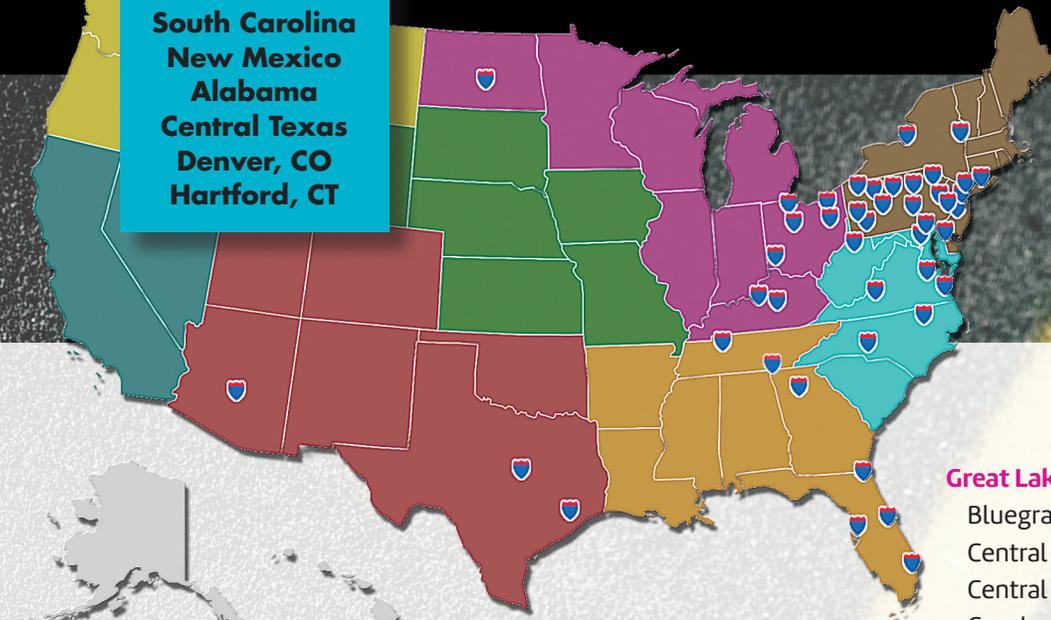
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Mid-Allegheny	126
New York Metro	137
North Central New Jersey	140
North East Penn	132
Pittsburgh	529
Southern New Jersey	177
Southwest Penn	292
Williamsport	81
Subtotal	3,344

Mid-Atlantic Region

Blue Ridge	60
Carolina Piedmont	79
Carolina Triangle	230
Chesapeake	288
Greater Hampton Roads	82
North Central West Virginia	52
Old Dominion	84
Potomac	188
Subtotal	1,063

Southeast Region

Central Florida	91
Georgia	500
Middle Tennessee	308
Northeast Florida	181
South Florida	10
Tampa Bay	77
Tennessee Valley	54
Subtotal	1,221

Great Lakes Region

Bluegrass	82
Central Dacotah	85
Central Ohio	191
Cuyahoga Valley	102
Derby City	88
Lake Erie	195
Northwest Ohio	53
Triko Valley	174
Subtotal	970

Southwest Region

Dallas-Fort Worth	18
Houston	91
Phoenix Sonoran	134
Subtotal	243

National Total

6,841	
Professional Status	56%
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Contractor	5%
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