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Transportation Builder® (TB) is the official publication of the American Road & Transportation Builders Association, a federation whose primary goal is to aggressively grow and protect transportation infrastructure investment to meet the public and business demand for safe and efficient travel. In support of this mission, ARTBA also provides programs and services designed to give its members a global competitive edge. As the only national publication specifically geared toward transportation development professionals, TB represents the primary source of business, legislative and regulatory news critical to the success and future of the transportation construction industry.

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Transportation Builder® (ISSN 1043-4054) is published bi-monthly by the American Road & Transportation Builders Association (ARTBA). Postmaster: Send change of address to Transportation Builder®, c/o ARTBA, The ARTBA Building, 1219 28th Street, N.W., Washington, D.C. 20037. Phone: 202-289-4434, Fax: 202-289-4435, www.artba.org; artbadc@aol.com. Periodicals postage paid at Washington, D.C., and additional mailing offices. Subscriptions are $105/year for ARTBA members, which is included in the dues; $120/year for non-members; and $200/year non-U.S. mailing addresses. Copyright ©2016 ARTBA. All rights reserved. Material may not be reproduced in any form without written permission from the publisher. Reg. U.S. Patent & Trademark Office.

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This issue of “Transportation Builder” is all about bridges … and airports.

We typically focus on bridges in this issue. We have added features about airport construction as a timely reminder that Congress is still working on an important FAA reauthorization bill.

On the following pages, you will find useful and interesting information about 10 bridge projects and major capital work at 14 airports across the nation. The bridge work includes new construction and rehabilitation efforts. The airport construction includes terminals and runways, plus roads, transit and parking garages. A few of these projects are finished, others are still being built, and some of the airport work remains on the drawing boards.

In this issue, we've also introduced a new Question & Answer feature with Woman Leaders in Transportation Design & Construction. We spoke with AECOM's Jihane Fazio about her role as chair of ARTBA's Woman Leaders Council. We will highlight other women in following issues. And we continue to spotlight innovations by members of ARTBA's Research and Education Division.

The May/June issue is our annual focus on transportation construction safety. Please contact me at mholan@artba.org with story ideas and suggestions.

Finally, after more than four and a half years at ARTBA, Publications Editor & Graphic Designer Jenny Ragone is moving on to an exciting new graphic designer position at “Bethesda” magazine, which covers people, restaurants, real estate, arts and entertainment and community issues in the Maryland suburbs north of D.C. Jenny has been a great asset to ARTBA and a wonderful colleague. We will miss her, and wish her all the best!
From the Chairman

3 Reasons Why You Should Be in the Nation’s Capital This May

The May 9-11 ARTBA Federal Issues Program (FIP) and the Transportation Construction Coalition (TCC) Fly-In is quickly approaching. There are at least three key reasons why you should attend.

First, this annual event provides an important leadership opportunity to communicate directly with your members of Congress to help them better understand the importance of transportation investment to your company and to constituents in their district or state, and to let them know their job is not done just because they passed the FAST Act.

A permanent fix for the Highway Trust Fund; ensuring Congress actually appropriates the highway and transit capital funds agreed to in the FAST Act for FY 2017; and obtaining a multi-year increase in airport capital improvements as part of the FAA reauthorization bill, all remain on the legislative agenda.

Second, this is the first year for the revamped Industry Leader Development Program (ILDLP), formerly the Young Executive Development Program. Your attendance at the FIP/Fly-In will allow you to meet and help mentor the next generation of industry leaders.

IDLP participants will be learning how federal highway and transit funding works, ARTBA’s role in shaping policy, and why coming to Washington to build relations with elected leaders and agency officials is like any other important business development opportunities. Shouldn’t you be there to help set the example?

Third, this is one of the most important opportunities of the year for ARTBA’s membership to come together in one place; both as a group, and for separate divisions and councils meetings. You’ll receive important legislative, regulatory, legal and economic updates from ARTBA staff, and you can share with your peers what’s happening in your part of the country.

Please see the opposite page for the program schedule and more details about how to register. I look forward to seeing you in the Nation’s Capital in early May as we work together to build on the achievements of the FAST Act.

David Zachry
President & CEO
Zachry Corporation
2016 ARTBA Chairman
Federal Issues Program & TCC Fly-In | May 9-11

Hotel Information:
Hyatt Regency
400 New Jersey Ave. N.W, Washington, D.C. 20001

For more information on where to make your room reservations, visit the list of hotels at www.artba.org.

Registration:
Member: $775
Non-Member: $875

Sponsorship:
Contact Ed Tarrant at etarrant@artba.org or 202.289.4434.

Register: www.artba.org

Schedule

Monday, May 9
11:00 a.m.-Noon
Public Private Partnerships Division
Noon-2:00 p.m.
Executive Committee
12:30-3:30 p.m.
Contractors Division Roundtable with Federal Highway Administration

2:00-3:30 p.m.
• Transportation Safety Advisory Council
• Research & Education Division
• Joint Planning & Design and Transportation Officials Divisions
• Transportation Development Foundation Trustees

3:30-5:00 p.m.
Environmental Committee Meeting with Federal Officials

3:45-4:45 p.m.
Bridge Policy & Promotion Council

5:00-6:00 p.m.
• Joint Industry Leader Development Council and Women Leaders Council Meeting
• Council of State Executives Meeting

6:00-8:00 p.m.
ARTBA Reception

Tuesday, May 10
7:30-9:30 a.m.
Contractors Division
8:30-9:30 a.m.
Materials & Services Division
9:30-9:45 a.m.
Networking Break
9:45-11:00 a.m.
General Sessions:
• Legislative and Regulatory Update
• Transportation Construction Market Report

11:00 a.m.-1:00 p.m.
ARTBA Board of Directors Meeting
1:00-2:30 p.m.
ARTBA Foundation Awards Luncheon
Speaker: Chris Cillizza, reporter and political analyst, The Washington Post

TCC Fly-in
Tuesday, May 10
2:30-5:00 p.m.
TCC Legislative Briefing
6:00-7:30 p.m.
TCC Capitol Hill Reception

Wednesday, May 11
7:00-8:00 a.m.
TCC Breakfast
8:00 a.m.-5:00 p.m.
Meetings with members of Congress
Everyone needs a vacation once in a while. The beach, the golf course, the hunting lodge—we all have our favorite destinations. Ideally, it’s an opportunity to get away from work, “unplug” and recharge for at least a few days.

Everyone needs a vacation… except ARTBA’s “Transportation Makes America Work!” (TMAW) program. No one would blame TMAW for taking some time off, given its integral role in helping pass the Fixing America’s Surface Transportation (FAST) Act, the five-year federal highway/transit law last December. Because of support from many of ARTBA’s members and chapters, we used our TMAW program to spearhead advocacy efforts like coalitions, advertising, research, media events, grassroots tools and websites.

But that was then (2015) and this is now. ARTBA and the TMAW program remain just as engaged as during the pre-FAST Act days, which is why we really need your help in the weeks and months ahead. TMAW is the engine that drives ARTBA’s legislative, regulatory and legal advocacy machines. By contributing, you can help us resolve some unfinished business from recent years, as well as take on some new challenges on your behalf.

In the FAST Act, Congress failed to include a permanent revenue solution for the Highway Trust Fund (HTF). Since federal fuel tax increases in recent history have sprung from non-transportation legislation, ARTBA is pursuing every possible opportunity to address this deficiency in a comprehensive tax bill or similar measure. We believe a HTF fix should happen long before the bill expires.

Congress is debating the reauthorization of the federal aviation programs as this issue of the magazine goes to press. We are pushing for an increase to the Airport Improvement Program (AIP), an important market-driver for many ARTBA members, and a boost to the Passenger Facility Charge (PFC), which would generate more local revenue for airport projects.

ARTBA continues to fight for the industry in the federal courts. We have joined broad-based coalitions to challenge the U.S. Environmental Protection Agency’s attempt to extend its jurisdiction to every ditch, pond and stream in the nation, and the Occupational Safety & Health Administration’s flawed new silica rule, which will divert safety resources away from more urgent hazards in highway work zones. ARTBA has also filed an amicus brief supporting Dunnet Bay Construction’s appeal to the U.S. Supreme Court, after lower courts ruled that contractors have no right to challenge state DOT interpretations of federal rules.

These three cases are just part of a federal regulatory “tsunami” that ARTBA is now battling on a weekly basis. We are aggressively protecting the industry from new compliance burdens and costs relating to Buy America, local hire mandates, the Disadvantaged Business Enterprise (DBE) program, the Cargo Preference Act, the Equal Employment Opportunity Commission’s “EEO-1” form and more.

ARTBA’s TMAW program is critical to all of these advocacy activities. TMAW gives us the resources to runs ads, lead a coalition, initiate research, call the grassroots army to action, hire skilled legal counsel, run the Transportation Investment Advocacy Center, and virtually anything else we need to do to fight these battles. And again, TMAW is 100 percent funded by ARTBA’s members and chapters—over and above their dues investment. Please do your part and financially support the program this year!

Finally, all the topics I’ve described will be addressed in depth at the upcoming ARTBA Federal Issues Program and Transportation Construction Coalition Fly-in, May 9-11 in D.C. You’ll have the chance to hear from and meet leading members of Congress, your own delegation and key federal officials over those three days. In the meantime, be assured that ARTBA and our TMAW program will be working full time—as always—to help grow and protect your market!
3rd Annual National Workshop for State & Local Transportation Advocates  
Washington, D.C.

### Program

**Tuesday, July 12**

4:00-6:00 p.m.  
Transportation Investment Advocates Council Meeting

6:00-7:00 p.m.  
Council Networking Reception

**Wednesday, July 13**

8:00-8:30 a.m.  
Networking Breakfast

8:30-8:45 a.m.  
Welcome

8:45-9:15 a.m.  
Trends in State and Local Transportation Funding  
_A review of 2015 action and preview of 2016 transportation ballot initiatives_

9:15-10:00 a.m.  
Understanding and Neutralizing Opponents Arguments  
_Advice on anticipating the arguments from gas tax/tolling opponents and building preemptive communication strategies._

10:00-10:15 a.m.  
Coffee Break

10:15-11:00 a.m.  
Framing the Gas Tax Package: What the Public Supports  
_New research on how policy characteristics and messaging can influence public support for raising the gas tax._

11:00-11:45 a.m.  
Maintaining Momentum after Legislation Stalls  
_Advocates share their lessons learned on campaigning for a transportation funding increase after legislation failed to pass._

11:45 a.m.-1:00 p.m.  
Hot Topics Lunch  
_An interactive discussion on transportation funding methods and campaign techniques._

1:00-2:00 p.m.  
How to Get Legislators on your Side and Help Champions Win the Battle  
_Advice from state legislators._

2:00-2:15 p.m.  
Coffee Break

2:15-3:00 p.m.  
Winning Local Transportation Ballot Measures  
_Learn how advocates ran successful campaigns to increase local transportation funding._

3:00-3:45 p.m.  
Winning Motor Fuel Tax Strategies in 2015  
_Campaign strategists from three of the eight states that successfully increased taxes on motor fuel last year share insights._

3:45-4:00 p.m.  
Closing Remarks

6:00-7:30 p.m.  
Capitol Hill Reception

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Washington, D.C. 20001

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Ask for the ARTBA P3 Conference rate of $279 per night.

Registration:
Member: $1,050
Non-Member: $1,550

Early registration ends May 13.

Sponsorship:
Contact Ed Tarrant at etarrant@artba.org or 202.289.4434.

Register: www.artbap3.org
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ARTBA Challenges New OSHA Silica Exposure Regulation in Federal Court

by Mark Holan

The Occupational Safety and Health Administration (OSHA) issued new regulations March 24 that will significantly tighten the existing federal standard for allowable worker exposure to crystalline silica dust. Work zone safety is a top industry and ARTBA priority. And that is why, on behalf of its membership, ARTBA is financially supporting litigation to stop implementation of this unwarranted regulatory action, which we believe will increase overall safety risks to transportation construction workers. Here are answers to some of the frequently asked questions about this issue:

What are the details?
Crystalline silica is a basic component of dust from soil, sand, granite and other minerals associated with construction. The new rule sets the limit of 50 micrograms per cubic meter of air, averaged over an eight-hour shift, compared to the previous level of 250 micrograms for the construction industry. However, the air sampling requirements are simply unworkable in the transportation construction industry, requiring time-consuming sampling and testing procedures. By the time the results are known, the “workplace” location and conditions tested will have moved and/or changed. As it stands now, the regulation takes effect June 23, but construction companies will have one year to comply.

How does this impact the transportation construction industry?
ARTBA’s biggest concern with the new OSHA standard is that it would divert significant resources—human and financial—away from activities aimed at mitigating, if not eliminating, documented serious hazards to our workers’ health and safety, such as runovers, backovers and work zone intrusions. Also, the new rule may be doing more harm than good by requiring workers to wear respirators in hot environments, potentially exposing them to otherwise avoidable heat stroke and stress.

Are there other concerns?
Yes. The new rule is based on outdated health data. In setting the new standard, OSHA has relied on studies from as early as the 1930s. More recent data clearly shows silica exposure has been dramatically reduced under the existing standard. According to the Centers for Disease Control and Prevention (CDC), deaths due to silicosis have declined 93 percent over a 40-year period. The new rule is also based on faulty economic data. OSHA estimates the rule will cost the construction industry $658,971,248 per year. An ARTBA co-sponsored, independent economic analysis of the proposed standard, conducted by Environomics, Inc., for the Construction Industry Safety Coalition (CISC) shows the new standard will cost the construction industry about $2.2 billion per year.

What is ARTBA doing about this?
Now that OSHA has ignored our concerns in the final rule, ARTBA has joined a lawsuit filed in early April in the 5th U.S. Circuit Court of Appeals in New Orleans. ARTBA’s goal is to have this unnecessary rule struck down so that it does not become an additional burden on transportation construction firms.

How can I help?
Our litigation efforts are being funded through voluntary contributions to the ARTBA Transportation Makes America Work! (TMAW) program. Your financial support of this effort is crucial. Contributions can be payable to and sent in c/o the “ARTBA TMAW Program” to The ARTBA Building, 1219 28th Street, N.W., Washington, D.C. 20007.

For further information, contact ARTBA’s Nick Goldstein at 202.289.4434 or ngoldstein@artba.org.
Specially designed traveler was produced by VSL, which also is providing 209,000 of post-tensioning strand and 12,200 lf of post-tensioning bar. Courtesy of Brayman Construction Corporation.
PERSEVERANCE AND INNOVATION:
Lessons from Ohio’s Ironton-Russell Bridge Replacement Project

by Jerry Pfuntner and Tom Hesmond

Constructing the longest span on record for the Ohio Department of Transportation (ODOT) and implementing the first-ever use in the U.S. of a precast stay anchor block system doesn’t come without difficulties. It takes innovation, a team approach to problem solving, and perseverance to surmount the challenges.

The Ironton-Russell Bridge replacement over the Ohio River between Ironton, Ohio, and Russell, Kentucky, languished for years because earlier bids were far above budget. But in 2012, with a new design by URS (now AECOM), the Brayman Construction Corp., Finley Engineering Group (FINLEY), and VSL team proposed a number of construction and design modifications that helped reduce overall costs.

“The changes were very innovative, kept to our high standards, and resulted in less cost to our taxpayers,” said David Bame, ODOT project engineer. “After years of hard work, patience and diligence, the area residents and other travelers will soon enjoy a reliable, safe crossing to enhance commerce and quality of life in the area.”

The $81.2 million project includes $79.3 million in construction bonds and $1.4 million in federal funds.

The new 2,616-foot-long Ironton-Russell Bridge is comprised of a 900-foot cable-stayed main span and two 370-foot cable-stayed side spans, two 315-foot tall towers and two anchor piers on the river’s edge. The structure is cast-in-place with 22,500 cubic yards of reinforced concrete (5.8 million pounds of rebar), utilizing the cable stays to construct the bridge by the one-directional cantilever method. Foundation units consist of 53 large-diameter drilled shafts ranging from 42 inches to 96 inches.
When completed, the 900-foot main span will be the longest span the ODOT has ever built.

The existing Ironton-Russell Bridge, a cantilever structure, was opened in 1922 as the first highway bridge along the Ohio River between Parkersburg, West Virginia, and Cincinnati. It was retrofitted in the 1970s and later posted with restrictions, having become inefficient for traffic and economically impractical to maintain. In 2000, ODOT determined the bridge was functionally obsolete, structurally deficient and recommended replacement. This bridge is a major river crossing that provides a main route for trucking and other transportation.

**The Innovations: Precast Stay Anchor Blocks and the Casting Back Spans on Falsework**

“Probably the most notable of the alterations to means and methods and design are the casting of the back spans in place using specially designed falsework and the first known use in the USA of precast stay anchor blocks,” said Craig Finley, Jr., managing principal of FINLEY.

Constructing the back spans on falsework simplified construction and minimized the amount and size of equipment required for the cable-stayed portion of the project. The falsework was designed as a modular system, allowing it to be used for both the Kentucky and Ohio approaches and reducing the number of travelers from two to one. This, along with precast concrete girders for floor beams on side spans, allowed Brayman to have land access to build the main span.

Together, these approaches saved time and money while increasing project safety. Project officials agree that minimizing
water work has been a success. With an average of 50 workers on site on a daily basis, there have been no major accidents on the project since its inception.

The innovative and first U.S. use of a precast stay anchor block system simplified stay cable anchorage placement, accelerated the construction schedule and simplified the form traveler system by eliminating the need for a temporary stay anchorage. VSL was a key part of the team and solution. It allowed the integration of the design and fabrication of the traveler through one stay supply and installation provider.

The team evaluated and identified other elements that could be precast rather than poured in place. This allowed items to be pre-manufactured under controlled conditions while other work was able to continue. The use of precast cofferdams greatly reduced the amount of tremie concrete required, as well as provided a sacrificial form for the tower footing.

Precast tubs were used for footings at Pier 3 and Pier 4, eliminating the need for pile coffer cells. The precast tubs were tied into the drilled shafts, diminishing excavation and its impact on the environment, and incorporated a sheet pile follower system which was required to extend the footer to the necessary river elevation. Although precast tubs are not unique, the tugs on this project were approximately 30 feet below river elevation, and possibly the deepest known use of a precast tub system.

Facing the Challenges

As with many of the projects of this size that incorporate innovative technology and processes, advancement doesn't come without challenges.

The Dispute Review Board (DRB) process helped resolve technical challenges as they arose in a fair and impartial manner. ODOT and the contractor also had the ability to engage in the Advisory Recommendation Process, which provided a preliminary assessment of their positions prior to a claim reaching the DRB. This advisory process gave the parties the opportunity to resolve the issue in a timely and efficient manner.

“Cooperation between the ODOT and Brayman helped resolve unforeseen weather conditions, while it took cooperation from ODOT and URS and input from Finley and VSL to resolve precise adjustments to the precast anchor blocks,” said Steve Muck, CEO, Brayman Construction.

Furthermore, “the density of rebar and post-tensioning required the utmost attention to detail from the Brayman Precast Group.”

While the first precast tub presented challenges in sealing between it and the foundations due to the unusual placement depth and unexpected weather conditions, the team worked together to make modifications significantly improving the process for the second tub. Sealing the 30 foot deep coffer boxes required commercial diving support and was performed by Specialty Underwater Services.

“There were many challenges in the precast operation, most due to the alignment of the guide pipe and the density and tolerances of the rebar. There was a bit of a learning curve to smooth out this process,” Muck said.

With the cantilever from the Kentucky side complete and the Ohio-originating cantilever in the works, the next major milestone will be the closure of the main span late this summer. The new Ironton-Russell Bridge is expected to open to traffic by Thanksgiving.

Jerry Pfuntner is Finley Engineering Group’s lead bridge engineer for the Ironton-Russell Bridge project: jerry.pfuntner@finleyengineeringgroup.com.

Tom Hesmond is Brayman Construction Corporation’s project manager for the Ironton-Russell Bridge project: t.hesmond@brayman.com.
During a $62 million, eight-bridge rehabilitation project on Interstate 40 in Nashville, the Tennessee Department of Transportation (TDOT), Kiewit Infrastructure South Co., and design engineer Gresham, Smith and Partners, found innovative and creative ways to reduce weekend closures.

One solution called for replacing a 428-foot, six-span bridge, with two single-span bridges. Using Mechanically Stabilized Earth (MSE) walls, or reinforced soil for bridge abutments, allowed more pre-weekend replacement work without sacrificing safety or disrupting travel.

Eliminating bridge spans also required fewer crane picks on the weekends, further shortening road closures and reducing project risks. Fewer bridge spans also gives the project longer life expectancy.

Once the team decided to use MSE walls, it had to find a way to backfill behind the walls and underneath the bridge as high as possible before the weekend replacement. This reduced the amount of backfill work needed during the 58-hour replacement window.

The team used a robotic, extra low profile dozer that needed little clearance to work underneath the bridge. The 33-inch tall, remote-controlled dozer was able to backfill within inches below the existing steel girders. This innovative tool, combined with a truck-mounted conveyor, helped increase productivity and reduce safety concerns that come with traditional low clearance backfill operations.

Working one bridge at a time, the old structures were removed and replaced within each 58-hour weekend period, from 8 p.m. Fridays to 6 a.m. Mondays. The eight bridges were replaced in 10 weekends. The job was completed seven months early resulting in a safer and smoother ride for the 140,000 vehicles a day that use it.

More information: Nicholas Olp, nicholas.olp@kiewit.com.
The village of Meredosia, Illinois, population about 1,100, is located on the east side of the Illinois River, about 260 miles southwest of Chicago. A bridge replacement at the same location as the existing bridge would touch down further into the village due to an increased grade. That elevation would mean the downtown businesses would be looking directly into the sides of retaining walls.

The Illinois Department of Transportation (IDOT) relied on Context Sensitive Solutions (CSS), a holistic approach to project development, to help determine the location of the new bridge alignment. Three major alternates were considered, each with multiple slight variations. The three alternates included a “through-town” alternate that paralleled the existing bridge, a near bypass, and a far bypass. Although the through-town alternate had more displacements and impacted a popular park, a project community advisory group strongly favored the through-town alternate.

While the final design involved moving the bridge alignment 250 feet to the north to prevent the road from being elevated through Meredosia’s Main Street, there still was the potential to separate the town with a 30-foot high retaining wall. Through regular meetings with the community advisory group, a resolution was developed to build the wall to accommodate a side road that originally would have been closed. This opening through the wall helped alleviate many concerns of a large retaining wall separating the village.

The through-town location had several other challenges. The new bridge would have to cross over a U.S. Fish and Wildlife Service refuge. Two of the piers had to be built on the refuge property. This problem was solved with a land exchange between IDOT and the federal agency.

A tied-arch design was selected as the best way to reduce future maintenance costs and ease bridge inspections. The project is nearing the end of the first year of a three- to four-year replacement schedule.

Halverson Construction is the main contractor on the $75.1 million project.

More information: Guy Tridgell, IDOT, 312.793.4199.
The U.S. 52-Illinois 64 bridge linking Savanna, Illinois, and Sabula, Iowa, is a crucial link between the two states, with the nearest alternate crossing over the Mississippi River more than 20 miles away. Located about 150 miles west of Chicago, the “Savanna-Sabula” opened in 1932 as a private toll bridge and helped boost the regional economy. In 1999, it was added to the National Register of Historic Places. But the 84-year-old bridge has outlived its intended useful life.

Safety is a big concern. At 20 feet across, the bridge is too narrow to accommodate bicycles or disabled vehicles. Wider vehicles often overlap the opposite lane. Maintenance and rehabilitation costs keep growing.

Four years ago, the Illinois Department of Transportation, in coordination with the Iowa Department of Transportation, began exploring ways to meet current and future needs. Six alternatives were considered.

The selected option consists of 12 spans totaling more than 2,400 feet—stretching from the middle of the Upper Mississippi River Wildlife & Fish Refuge in the Mississippi River on the Iowa side, to the high bluffs of the Mississippi Palisades in Illinois. The focal point of the new bridge will be the main span, a steel tied-arch over the river.

The location of the bridge and its unique surroundings pose additional challenges. A 150-foot shift of the navigation channel to the west needed to be coordinated and approved by the U.S. Coast Guard. The cooperation of the BNSF Railroad, which operates two heavily travelled tracks under the bridge, also has been critical in meeting safety requirements and obtaining access to the river during construction.

The new bridge is 40 feet wide between a central barrier, with 8 feet of shoulder on each side to accommodate disabled vehicles and still leave room for cyclists.

Kraemer North America is the main contractor for the $80.6 million project.

Construction began in 2015. The new alignment is approximately 100 feet to the south of the existing bridge, which will remain open to traffic until the replacement is finished in 2017.

More information: Guy Tridgell, IDOT, 312.793.4199.
Historic Bridge in Minnesota Gets Special Support for New Life

Submitted by Acrow Bridge

Modular steel components are helping to support an historic bridge over Long Meadow Lake in Bloomington, Minnesota, while also providing access to rehabilitation crews and their equipment.

The Old Cedar Avenue Bridge (also called the Long Meadow Bridge) was built in 1920 in what today is the 11,000-acre Minnesota River Valley National Wildlife Refuge. When it was built, the structure was the longest steel highway bridge with concrete flooring in the state. It was added to the National Register of Historic Places in 2013 because of its unusual design.

Contractor Kraemer North America has rented three support structures for the rehabilitation from Acrow Bridge. Each support structure is 170 feet long on 35 feet tall Acrow panel towers.

As the in-place restoration work on each of the bridge’s five spans is completed, the support structures are “leapfrogged” forward to accommodate the next phase. Such techniques significantly save project costs by mitigating the risks faced by contractors, who often have to move a structure rather than working on-site.

Acrow’s reusable steel system supports will be needed until June. The $20 million rehabilitation project is expected to be completed later this fall.

Despite periodic repairs over the decades, the Old Cedar Avenue Bridge deteriorated and was closed to vehicular traffic in 1993 and to pedestrians and cyclists in 2002. Although replacement options were considered to restore non-motorized traffic crossing, rehabilitation was chosen due to the bridge’s historic status.

“It has been gratifying to have been a part of this important project to restore a historically significant bridge with an innovative use of the Acrow truss system,” said Bill Killeen, president and CEO of Acrow Bridge.

The Parsippany, N.J.-based firm has been serving the transportation and construction industries for more than 60 years, with projects throughout the U.S. and over 80 countries.

More information: Eugene Sobecki, Acrow Bridge, 973.244.0080.
New Lake Bridges Take Shape in Western Kentucky

Submitted by Michael Baker Engineering, Inc.

Traffic on one of the two twin signature spans of the Lake Bridges project on the US-68/KY-80 corridor in Western Kentucky opened April 8. The Kentucky Transportation Cabinet (KYTC) is overseeing the combined $260 million in construction.

Kentucky Lake Bridge features a 550-foot-long basket-handle tied-arch main span. Project contractor Johnson Bros. Corp. of Roanoke, Texas, erected the arch on barges near the lake shoreline. On Dec. 1, 2015, crews hoisted it up to hang from temporary towers on the barges, then floated it into place and set it down high above the Tennessee River navigation channel. (View a time-lapse video of the lift at www.transportationbuilder.org.)

The new 3,611-foot-long bridge, including the steel plate girder approach units, replaces the Eggner’s Ferry Bridge, an obsolete truss structure with trestle approaches, originally built in 1932 to cross the Tennessee River and then raised in 1944 to accommodate the reservoir forming behind Kentucky Dam.

Its sister bridge is under construction eight miles east and spanning another major water way, Lake Barkley, (Cumberland River). The contractor for this project, PCL Civil Constructors Inc., of Denver, is currently drilling shafts into the rock deep below the lake bottom. Lake Barkley is significantly shallower and PCL chose to erect a temporary trestle system to access the pier locations. The bridge, which will replace another Depression-era span, is expected to open in 2018.

Each main span is situated in the deepest part of its respective lake, providing improved navigation clearance for the commercial vessels transiting the heavily traveled inland waterways.

“KYTC’s investment will provide benefits of improved mobility for the community, commerce and tourism, as well as providing a reliable earthquake evacuation route for the Western Kentucky region,” said Mike McGregor, KYTC’s District One chief engineer, who has led the project through pre-construction and design development.

New Technology Provides an Economical Solution for Bridge Replacement

Submitted by Kevin Irving, national marketing specialist, AZZ Galvanizing

Agricultural equipment overloads had a cumulative effect on the Amish Sawmill Bridge in Fairbank, Iowa, about 65 miles north of Cedar Rapids. The bridge had become structurally deficient and functionally obsolete.

And it isn't the only span in rural Buchanan County with this problem. Many of the county's more than 250 bridges need reconstruction or replacement.

Now, a new press brake-formed tub girder technology is providing a solution for new and replacement bridges with modular and prefabricated components.

When completed in December 2015, the Amish Sawmill Bridge became the first replacement bridge in the U.S. designed with the new technology.

Buchanan County Engineer Brian Keierleber said his team chose the press brake-formed tub girder technology because it was economical and helped accelerate construction.

“Press Brake Tub Girders were formed in the same process as when constructing steel utility poles,” Keierleber said. “We press into a box shape, put sheer studs on it and then galvanized it.

Everything on the bridge is galvanized—the beams, rebar and barrier rail. The bridge should last 80 to 100 years.”

New Vienna, Iowa-based Taylor Construction did the work using modular shallow trapezoidal boxes that are either galvanized or made from weathering steel and fabricated with full-width steel plate that has been cold-formed using a press brake and supported by geosynthetic reinforced soil (GRS). Four, 52-foot-long press-brake tub girders were used. The deck was precast on the girder and trucks hauled the modular units to the bridge site.

Keierleber said the tub girder technology reduces additional details such as stiffeners and cross frame, and also has the ability to be used for both tangent and skewed configurations on simple or continuous spans. The bridge also used galvanized rebar provided by AZZ Galvanizing.

The Federal Highway Administration’s (FHWA) Innovative Bridge Research and Deployment (IBRD) program partially funded the $398,960 project with design and research assistance of the Iowa Department of Transportation and the Iowa Highway Research Board.

More information: Kevin Irving, AZZ Galvanizing, 815.693.4242.
Michigan motorists are joining other drivers across the nation in using an innovative interchange that routes vehicles temporarily onto the opposite side of the road to improve safety and operations. It’s known as the diverging diamond interchange (DDI), and has been used in Europe and other states. It reduces the number of “conflict points,” which create the potential for accidents, by routing traffic temporarily to the left side of the road at a highway interchange. The very first DDI in the U.S. opened in 2009 in Springfield, Missouri. Now there are more than 60 DDIs across the U.S.

The Michigan Department of Transportation (MDOT) is midway through construction on the state’s second DDI, located at Cascade Road over I-96 in Grand Rapids. MDOT has completed a DDI in Auburn Hills at Interstate 75 and University Drive.

The Cascade Road bridge, which is more than 50 years old, will be replaced with two new bridges. Once the first bridge is complete, traffic will be rerouted onto the new structure, and the old bridge will be demolished to make way for bridge number two.

Milbocker and Sons is the main contractor for the $15.8 million project.

MDOT, for the first time, is replacing aging bridges using bridge slide technology.

A traditional bridge replacement typically requires months of lane closures and detours. With this slide-in bridge method, the new structure is assembled on temporary foundations adjacent to the existing bridge and, once complete, slid into place on lubricated skids, or “sliding shoes.”

The northbound and southbound U.S.-131 bridges over 3-Mile Road in Mecosta County, 60 miles north of Grand Rapids, and the M-50 bridge over I-96 in Lowell Township, 25 miles east of Grand Rapids, were replaced using this new method.

To maintain mobility in Lowell Township, M-50 traffic was shifted onto the east half of the new bridge in its temporary location while crews demolished the existing and worked on the new structure’s permanent foundations. This reduced the amount of time the bridge was out of service. Just two weekend closures were needed: one for demolition, and one for the slide. The new M-50 bridge has the unique distinction of carrying traffic over I-96 in two different locations.

CA Hull is the main contractor on the $4.3 million U.S. 131 project; Anlaan for the $8.2 million M-50 project.

Another bridge project on the M-100 north of Potterville in Eaton County is expected to be completed this fall.
When Southeastern Pennsylvania Transportation Authority (SEPTA) commuters rumble across the new Crum Creek Viaduct in Swarthmore later this year most will take for granted the project’s critical foundation work. Chicago-based Walsh Construction is currently building the $89.9-million viaduct to replace the existing 121-year-old, 925-foot-long, 100-foot-high structure.

The project’s keystone is foundation work for the substructure, which includes two abutments and four sets of piers. Meeting the challenges of this complex job required Walsh to rent two custom rotary drilling rigs from Equipment Corporation of America (ECA) in nearby Aldan, Pennsylvania. The BAUER Premium Line BG 18 H and BG 20 H Drilling Rigs cored through Schist with ECA-supplied standard tooling including augers, core barrels, and drilling buckets, but it was the firm’s roller bit core barrels that allowed Walsh to maintain production in this extremely hard metamorphic rock.

The BAUER Drilling Rigs were selected to overcome challenging site conditions, which included drilling through various types of extremely hard rock; navigating steep inclines; operating with limited overhead; and monitoring vibration of the slopes and tracks to ensure safe passage of commuter trains during construction. Both rigs were light enough to navigate steep inclines while delivering adequate hydraulic output to core through hard rock of up to 25,000 psi. The low headroom capability of the BG 18 H also proved optimal for drilling in the height-restricted east and west abutments.

“Drilling is make or break,” Walsh Superintendent Richie Vance said as a SEPTA railcar rattles across the viaduct behind him. “Depending on how that goes, it’s almost how the whole job goes.”

SEPTA will suspend service for roughly 10 weeks this summer so Walsh can install new girders, bridge deck, and catenary towers. Rail cars are expected to travel over the new viaduct by Labor Day. The contractor will conclude the project by summer 2017 with demolition of the existing viaduct, removal of the access road, and restoration of the site to original condition.

More information: Brian M. Fraley, 610.906.7275.
More than $10 billion of combined infrastructure investment is proposed to take off at New York’s LaGuardia and Los Angeles International Airport by the end of this year.

In Texas, Dallas Fort Worth International and Houston George Bush Intercontinental are herding over $4.2 billion in improvements.

In Florida, the sun is shining on more than $2 billion in construction at the Tampa and Orlando airports, less than 90 miles apart.

Airports in Seattle, San Francisco, Salt Lake City, Denver, New Orleans, Chicago, Philadelphia and Charlotte, North Carolina also have either just completed projects, or continue working on major upgrades. (See more details on pages 30-34.)
“It’s an exciting time and a frustrating time,” said Roddy L. Boggus, senior vice president/aviation director at WSP | Parsons Brinckerhoff.

It’s exciting because of the projects mentioned, plus many others. According to ARTBA’s market forecast, the total value of airport runway and terminal construction will grow to $14.3 billion this year from $12.9 billion in 2015.

“Right now there’s more focus on terminals,” said Laddie Irion, Florida-based national aviation market sector leader for HNTB Corporation. “But there are also runway incursion mitigation projects, and building multimodal connections and automated people movers.”

**Funding frustration**
It’s a frustrating time for airport construction because of continued uncertainty about the multi-year Federal Aviation Administration (FAA) reauthorization bill.

As the cherry trees blossomed in Washington, Congress passed legislation to keep the nation’s aviation programs operating until July 15. The extension gives lawmakers more time to negotiate a longer-term deal.

House Transportation & Infrastructure Committee ranking member Peter DeFazio (D-Ore.) and others warned such a bill must be completed by the July deadline, which comes at the eve of a seven-week summer recess. Once members return to Capitol Hill after Labor Day, it will only be a matter of weeks before they again head home to campaign for the November elections.

ARTBA has worked to secure Airport Improvement Program (AIP) investment increases in both the House and Senate multi-year aviation program reauthorization bills. The program helps airports pay for runways, taxiways and other core infrastructure projects.

The two-year Senate proposal would increase AIP funding by $400 million to $3.75 billion in FY2017. The House measure includes more modest annual increases, but would grow the program to $4 billion by FY2022. Annual AIP investment has been held at $3.35 billion since 2012.

However, neither bill includes an adjustment to the $4.50 cap on the Passenger Facility Charge (PFC), a user fee imposed by airports to support capital improvements. The PFC has not been adjusted in 16 years.

**Meeting needs**
“We have to modernize our funding for these infrastructure projects,” said Joe Lopano, CEO at Tampa International. “We would like to see the federal government get out of setting the PFC rate.”

He noted that a locally-controlled customer facility charge is helping to pay for a new consolidated rental car facility at Tampa. Similar parking structures are also being built at other airports, often with new automated people movers or transit connections.

The massive LaGuardia makeover is being financed through an ambitious public-private partnership (P3). It’s not the first aviation construction P3, but “certainly the largest and most relevant as to how aviation projects could be done in the future,” Boggus said.

But HNTB’s Irion said the variable ownership and political structures at U.S. airports creates challenges for the P3 model.

Airport capital development needs through 2019, adjusted for inflation, are about $15.1 billion annually, according to Airports Council International-North America’s March 2015 assessment. That’s “significantly higher” than funding available through AIP grants, PFC revenue and airport-generated revenue.

“It is clear that the existing federally-mandated funding system cannot meet U.S. airport capital needs for modernizing and expanding airport capacity, which is critical for a safe, efficient and globally competitive aviation system,” the report says.

Given the abridged legislative calendar for the remainder of 2016, the Senate proposal—or something close to it—is seen as the more likely outcome. The House plan to privatize air traffic control functions has drawn opposition from a wide range of aviation stakeholders and congressional committees.

ARTBA is continuing to push Congress to increase both AIP investment and the PFC cap to stabilize and grow the airport construction market.

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Roddy Boggus, senior vice president/aviation director, WSP | Parsons Brinckerhoff
Laddie Irion, Florida-based national aviation market sector leader, HNTB Corporation
Joe Lopano, CEO, Tampa International

ARTBA Senior Vice President of Government Relations David Bauer contributed to this story.
Mark Holan is ARTBA editorial director: mholan@artba.org.
Airport Project Profiles

New and renovated terminals; runways and taxiways; roadways and parking garages; transit connections and people movers; plus other infrastructure construction is taking shape at U.S. airports, even as Congress continues to wrangle over the renewal of federal aviation programs. Tens of billions of dollars are being invested, creating tens of thousands of jobs. Here’s a select look at some major projects at airports across the country, including recent arrivals, now in flight, or taking off very soon.

Charlotte-Douglas International Airport

- Taxiway D South Extension: Approximately 2,400 linear feet of taxiway will be added to Runway 18L/36R, $6.9 million.
- Terminal Westside Expansion, $10.5 million.
- $24 million new entrance roadway with connection to I-85 and other highways opened April 2015.
- $120 million new 4,000-space parking garage and rental car facility opened April 2015.

Chicago O’Hare International Airport

- $1.3 billion for new runway and associated taxiways, set to open in 2020.
- WSP | Parsons Brinckerhoff also exploring new express rail service from Chicago downtown Loop to the airport.

Dallas Fort Worth International Airport

- The $2.69 billion Terminal Renewal and Improvement Program (TRIP) began in 2011 with a targeted 2021 completion. The project includes work at four terminals, plus improved airport parking.
- A new Dallas Area Rapid Transit (DART) rail service station at the airport opened in 2014.
Denver International Airport

- Westin Denver International Airport Hotel. The $600 million hotel and transit center, which includes an outdoor plaza and light-rail station. The hotel opened in November 2015, the 23-mile route between the airport and downtown begins service in April 2016.
- Mortenson/Hunt/Saunders, CM/GC. Team also included Parsons Transportation, HNTB, JViation, Iron Horse and Gensler.

New York LaGuardia Airport

- In 2015 the Port Authority of New York and New Jersey selected LaGuardia Gateway Partners for a $5.3 billion project that includes a 1.3 million-square-foot, 35-gate terminal; a new aeronautical ramp; frontage roads to serve the new terminal; a new central heating and refrigeration plant; and other utilities and site improvements.
- Work is expected to begin later this year and take up to four years to complete.
- The private development team will be responsible for designing, constructing, operating and maintaining the new terminal.
- The Port Authority also is considering a $2.3 billion terminal redevelopment at Newark Liberty International Airport.

Louis Armstrong New Orleans International Airport

- In January, the city broke ground for the $826 million North Terminal and related improvements, including $87 million for a flyover addition from I-10 to improve access to the airport. The new terminal is scheduled to open on October 2018.
- The joint venture of Hunt Gibbs Boh Metro is working on the project.

Houston George Bush International Airport

- United Airlines and Houston Airport System last year began building a $244 million Terminal C concourse, a critical step toward developing the Mickey Leland International Terminal. The $1.5 billion project includes demolition of existing terminal and the construction of a modern, state-of-the-art facility, plus numerous roadway modifications and other work.
Los Angeles International Airport

- LAX is now in the 10th year of an $8.5 billion modernization program that’s projected to last through 2017. More than 20 individual projects created an estimate 40,000 construction jobs along the way.
- The nearly $2 billion New Tom Bradley International Terminal, the centerpiece of the project, opened in September 2013. Ticket lobby, baggage screening, baggage claim and concourse work continues through next year on the $508 million Terminal 1, $300 million Terminal 2 and $574 million Terminal 7/8 renovations, as well as concession areas.
- An estimated $5-billion Landside Access Modernization Program (LAMP) project, pictured above, now getting started includes and automated people mover that will connect the central terminal area with a new consolidated rental car facility.

Orlando International Airport

- Work is underway on a $1.1 billion expansion and renovation project, including construction on the South Airport automated people mover station and $243 million intermodal transportation facility, plus enhancements at the North Terminal Facility.
Philadelphia International Airport
- More than $611 million in expansion and improvement work at four terminals.
- Runway extension and associated taxiway work is estimated at $193 million.

San Francisco International Airport
- New $77 million, 221-foot air traffic control tower set to open in October. HNTB was conceptual designer; design/build by Fentress and Hensel Phelps.
- $2.4 billion terminal project in early phases. Austin Commercial and joint-venture partner, Webcor-Builders, have been awarded first phase contract.
- $253 million Terminal 3 East opened in November. $792 million Terminal 3 West design-build contract being awarded in May, with work through 2021.

Salt Lake City International Airport
- Construction on the $1.8 billion program began in 2014 and will continue through 2023. The terminal building will be completed in 2020.
- The project is a joint venture of Holder Construction, Utah's Big-D Construction, and HOK Architects.
Seattle-Tacoma International Airport

- Up to $2 billion in terminal, runway and other improvements either recently completed or set to begin later this year.

Tampa International Airport

- The $971 million project broke ground in November 2014 and includes construction of a consolidated rental car facility, expanded automated people mover system, roadways and taxiways, plus new concessions.

- A $9 million concessions receiving and distribution opened in February, and the $35 million Taxiway J should be finished by fall, with the rest of the project expected to wrap up by late 2017.

- Major contractors include Austin Commercial for the APM and rental car facility; Kimmins Contracting for the roadways; and Cone & Graham for the taxiway bridge. Skanska is doing the main terminal expansion.

Editor’s Note

This is only a partial roundup of U.S. airport construction projects. Information was obtained primarily from airport websites and media offices, plus news accounts and some interviews. Major project budgets are often revised over time. Some work might be added, while other projects are delayed or cancelled. Engineering and contractor firms, where mentioned, were usually taken from airport websites or news releases. Any omission of ARTBA members involved in these projects is unintentional.
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Dedicated to providing a wealth of information on how to make road construction zones safer for motorists, pedestrians and highway workers.
Q&A

With Transportation Design & Construction Leaders

The ARTBA Women Leaders in Transportation Design & Construction Council (WLC) was established in 2010 to help promote leadership and career advancement for these professionals through networking, mentoring, recognition and educational activities, both through the association and other stakeholders. Jihane Fazio, an AECOM associate vice president and delivery excellence leader for the Northeast Region, serves as WLC chair. She recently shared her thoughts about how the WLC has helped her career, mentorship, and what changes she would like to see over the next 10 years.

Jihane Fazio

- Associate Vice President, Delivery Excellence Leader, Northeast Region/AECOM
- Chair of ARTBA’s Women Leaders Council
- Vice Chair of the Industry Leaders Development Council

Q: Why should a woman consider a career in the transportation design & construction industry?

JF: There are plenty of opportunities for a rewarding career in the transportation design and construction industries for both men and women. Women should not overlook this industry simply because it has been typically associated with men. They have the same capabilities as men and can offer new perspectives that can benefit them and the industry as a whole.

Q: Best advice for young women in college thinking about a career in this industry?

JF: Pursue it! It’s a very rewarding career with plenty of opportunities to make a difference. Secure internships in both office settings and field environments to determine the best fit. It will help determine which path to take and is a good resume builder.

Q: Who has been a mentor to you in your career? Has mentorship helped you further your career goals?

JF: I have had many mentors throughout my career, both men and women. My mentors have never been formally appointed, but have resulted from natural relationships. Some probably don’t even know they are my mentors. They are people I respect and look up to, and if given the opportunity, I reach out to them for advice and guidance. They have definitely helped me along the way.

Q: The industry is still dominated by men. Do you see this changing? What do women need to know about that?

JF: The industry is changing, but it is a slow process. I would say over the past five years, we are hiring more and more female interns and entry level engineers, with better than ever career advancement opportunities. The transportation design industry is multi-faceted and it takes a lot of talent to get things done, and that includes women engineers, scientists, designers, accountants and construction professionals.

Q: How has ARTBA’s Women Leaders Council helped your career and/or your industry involvement?

JF: ARTBA itself and ARTBA’s WLC have helped me a lot in my career and in the industry in general. By understanding and staying abreast of what is happening in Washington, I am better equipped to serve my clients and understand their needs and their perspectives. ARTBA’s WLC provides me with an opportunity to place a spotlight on women and recruit more of them to our industry.

Q: Regarding women in this industry, what would you like to see happen over the next five to 10 years?

JF: Ideally, I would like to see equal representation of men and women in this industry and change the conversation from how do we recruit more women to the transportation industry to how do we all collaborate to make this industry great once again and ensure that our infrastructure is in good shape, safe, reliable and convenient to the traveling public.

Woman Leader coming in the May/June issue: Mary Beth Klein of Trinity Highway.

Information provided by the National Work Zone Safety Information Clearinghouse, award Administration, (FHWA) or the American Road & Transportation Builders Association-imply endorsement by the Clearinghouse or FHWA.

The National Work Zone Safety Information Clearinghouse

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Dedicated to providing a wealth of information on how to make road construction zones safer for motorists, pedestrians and highway workers.
Cement beams that use corrosion-resistant aramid fiber reinforced polymer (AFRP) could help to increase the service life of bridges over marine environments. Researchers at Morgan State University, in Baltimore, Maryland, and the University of Virginia, in Charlottesville, tested the non-metallic material to see how well it holds up to salt water compared to conventional rebar.

The study compared six beams created with prestressed and non-prestressed AFRP, carbon fiber reinforced polymer (CFRP) and stainless steel bars to evaluate their bond durability. The 7-foot beams were exposed to conditions that mimicked a marine environment, with a wet/dry cycle and exposure to sea salt and thermal fatigue. State-of-the-art digital imaging monitored the beams’ behavior. Pull-out tests were also conducted on smaller samples to evaluate the bond strength between the concrete and FRP and stainless steel bars.

Beam test results show that all specimens failed in shear due to the lack of shear reinforcement, which was expected. The steel bars exhibited higher bond strength and stiffness, but the AFRP and CFRP bars were not influenced by salt water, which lowers the bond strength of steel bars. Thermal fatigue causes a greater loss in bond strength for AFRP (55 percent) compared to CFRP (13 percent), and both lost more than the steel bars. This is attributed to the larger difference in thermal expansion between FRP and concrete. Interestingly, this exposure condition increases bond stiffness. Steel bars with its deformed shape shears the concrete located between lugs to resist slippage and then pulls out smoothly because the sheared concrete offers little change in friction. AFRP and CFRP show a cyclic stick-slip behavior after bond breakage as a characteristic of friction-dominated bond mechanisms.

The use of FRP composites shows promise for civil engineering applications, particularly the concrete in bridge decks. Beams internally reinforced with FRP could potentially be used for bridge decks as well as concrete sea walls. Work is in progress at smaller length scales to understand the mechanisms of all the results produced in this study.

To read the full report, visit the Morgan State University website: www.morgan.edu.

For more information, contact Monique Head, Ph.D., at monique.head@morgan.edu, or Devon Harris, Ph.D., at dharris@virginia.edu.
A team of researchers at the Iowa State University’s Institute for Transportation has developed a device to measure curling and warping in concrete pavements that is lighter and cheaper than existing technologies.

Portland cement concrete (PCC) pavement is impacted by temperature, moisture and traffic. Fluctuations in temperature and moisture across the depth of the PCC can cause curvature in the slab, known as curling and warping. With heavy traffic, this curling and warping can result in pavement cracking. Therefore, it is important to measure the true degree of curling and warping in PCC pavements for quality control and quality assurance, and also to better understand its relationship to long-term pavement performance.

Current approaches and devices—including linear variable differential transducers (LVDT) and digital indicators—to measure curling and warping are limited in their application in the field due to cost, inconvenience, and complexity of operation.

Faced with this challenge, the Iowa State University team developed a device with these specifications:

- It is 12 inches high and weighs 18 pounds, meaning it can be easily carried and used in the field by one adult.
- There are two levels of resolution (0.05 inches and 0.001 inches) that can be adjusted depending on project requirements and the total degree of curling and warping. If the degree of curling and warping is small, the higher resolution ruler could be used.
- The horizontal measuring range is 30 feet, depending on the length of string used; longer strings can be used if the slab is longer than 30 feet.
- The total cost of this instrument is about $320.
- Accuracy of this device is comparable to or better than existing methodologies.
- It can also be applied to measure vertical curvature degree of a bridge deck.

This project was sponsored by the Midwest Transportation Center (MTC) as part of a competitive research program to fund projects focused on state of good repair in infrastructure with attention to safety and data-driven performance measures for enhanced infrastructure condition; and by the Iowa Department of Transportation and the Iowa Highway Research Board.

For more information on these and other projects, go to www.mycutc.org. If you are working on an interesting project and would like to have your research highlighted, contact Lital Shair Nada at lnada@artba.org.

For more information, contact Halil Ceylan, director of the Program for Sustainable Pavement Engineering and Research at Iowa State University’s Institute for Transportation, hceylan@iastate.edu.
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Many ARTBA member firms are known for corporate giving or philanthropic programs that are designed to improve the quality of life in the communities where they do business. Now their efforts are being extended overseas to isolated communities in Asia, Africa and South America.

In just the past few years, about a dozen ARTBA member firms have teamed with the nonprofit Bridges to Prosperity, a group dedicated to building pedestrian bridges that help these communities maintain access to education, healthcare and economic opportunities by providing safe passage over creeks and rivers that become swollen and dangerous during rainy seasons.

Volunteers travel to remote locations and work with local residents and Bridge to Prosperity staff. Along with the new footbridge, the teams leave behind tools and safety equipment. They return home with a sense of global citizenship.

But that’s not all.

The work also “reignites volunteers’ pride in the engineering profession,” said Tessa Anderson, program officer at the CH2M Foundation, part of the Colorado-based firm. CH2M has been involved in four Bridges to Prosperity projects since 2014.

“Partnering with B2P provides a way to empower local communities while giving our employees a valuable way to utilize their unique skills to make a difference, build leadership and teambuilding skills, and help build local engineering and construction capacity,” Anderson said.

Among the other ARTBA members volunteering with the organization include: Manhattan Construction, American Bridge, Arup, Balfour Beatty, Kiewit, PCL Construction, T.Y. Lin International Group, and Traylor Bros. Inc. Usually, a design and contracting firm partner on a project trip.

As “Transportation Builder” went to press in early April, ARTBA member National Steel Bridge Alliance (NSBA) was set to do its first project in Lura, Panama. The group was using a first-ever mix of volunteers from several private companies, including ARTBA member firms Hirschfeld Industries and WSP | Parsons Brinkerhoff, and four state transportation departments, said NSBA Managing Director Bill McElney.

Volunteer teams pay $60,000 to participate in a project, plus travel and other expenses they choose to cover for their employees. The nonprofit also encourages higher sustaining contributions.

“Our professional partners have helped us develop construction methods to pull these projects off safely and affordably,” said Bridges to Prosperity Development Director Abbie Noriega.

More information can be found at: http://bridgestoprosperity.org/.

Watch a video about CH2M’s work with Bridges to Prosperity: https://www.youtube.com/watch?v=Lw3nWmMASbk

Mark Holan is ARTBA editorial director: mholan@artba.org
Top Industry Executives: ARTBA Was The Leader on Passage of the FAST Act

“What differentiates ARTBA from other industry groups is the creativity and innovative thinking it brings to the transportation advocacy arena. The association continually pushes the envelope with unique funding proposals, cutting-edge economic reports and analyses, and attention-getting advertising on multiple platforms. It’s a formula for public policy success.”
—David Zachry, president & CEO, Zachry Corporation, San Antonio, Texas

“Focused. Persistent. Unwavering. Those are some of the words that come to mind to describe ARTBA’s singular push to complete action in 2015 on a long-term highway and transit bill. The credible and comprehensive information prepared by ARTBA’s government affairs team in the run up to the final passage of the FAST Act was invaluable to the engineering community.”
—Paul Yarossi, president, HNTB Holdings Ltd., New York City

“ARTBA doesn’t know the meaning of the word ‘quit.’ The end result of that relentless focus was the December 2015 passage of a long-term highway and transit investment bill that will provide much-needed market stability for the first time in a decade.”
—Ward Nye, president & CEO, Martin Marietta Materials, Raleigh, N.C.

“No other industry group worked harder than ARTBA to get the FAST Act across the finish line. The new transportation law is a significant public policy achievement for the engineering community and is a testament to ARTBA's effectiveness in the Nation’s Capital.”
—Matt Cummings, executive vice president, AECOM, Philadelphia, Pa.

“Throughout the long reauthorization battle leading to passage of the FAST Act, ARTBA provided the boots on the ground that the industry needed in D.C. We relied on them to keep us informed on what was going on, as well as when and how we needed to engage our congressional delegation. Once again, ARTBA proved to be a critical investment for our chapter and the industry in Wisconsin.”
—Pat Goss, executive director, Wisconsin Transportation Builders Association, Madison

“Astec Industries and ARTBA worked in partnership to generate strong grassroots support at critical times during the debate on the highway bill. Through ARTBA's use of cutting-edge digital grassroots technologies, Astec's Don'tLetAmericaDeadEnd.com campaign, and initiatives by other industry firms, we kept the heat on Congress until final passage of the FAST Act.”
—Benjamin G. Brock, president & CEO, Astec Industries, Inc., Chattanooga, Tenn.

“The five-year FAST Act will provide much-needed predictability and stability for public agencies charged with planning transportation improvement projects. ARTBA's efforts were outstanding. A long-term bill would not have happened if ARTBA and its allies had not kept the heat on Congress and the President to get the job done.”
—Mike Hancock, secretary, Kentucky Transportation Cabinet

“ARTBA is THE 'A' team when it comes to transportation. The FAST Act certainly did not happen by accident. It is the result of ARTBA's many years of leadership, persistence, creativity and continuous fact-based insight and information.”
—Doug Black, chief executive officer, SiteOne Landscape Supply, Roswell, Ga.

“Many pundits and prognosticators said passage of a long-term transportation bill wasn’t possible in the current harsh political environment. ARTBA proved them wrong. All along the way, no other organization in the construction industry came close to matching ARTBA's reliable and accurate information on federal transportation policy matters.”
—Steve Wright, president, Wright Brothers Construction, Charleston, Tenn.

“Public policy in Washington, D.C., may move at a snail's pace these days. But that has never stopped ARTBA. The national highway freight program and dedicated funding source for it contained in the 2015 highway and transit investment law achieves a goal that ARTBA had been doggedly pushing for since it introduced the ‘Critical Commerce Corridors’ in 2006.”
—Mike Walton, E.H. Cockrell Centennial Chair in Engineering, University of Texas
Beware the idea of May—plus a day.

As May 16 draws near, ARTBA is watching for a potential surge in regulatory activity by the Obama Administration. Federal regulations not finalized by that date are subject to the Congressional Review Act and could be struck down by the next Congress or president in January 2017, according to a February report by the Congressional Research Service. The deadline could further prompt the Democratic Administration to use the regulatory process to achieve policy goals that are objectionable to the Republican-controlled House and Senate.

Silica Regulation
There are signs that an uptick in regulatory activity is already underway. One example is the March 24 release of the Occupational Safety and Health Administration’s (OSHA) rule regarding worker exposure to crystalline silica. While OSHA contends the regulations are necessary to improve worker protection from exposure to silica dust, ARTBA has warned the agency’s proposal is flawed and threatens the safety of highway crews and motorists.

In both regulatory comments and face-to-face meetings, ARTBA has explained that OSHA used both outdated data and a faulty economic analysis in reaching the new standard. Specifically, OSHA relied on studies from 1930 to 1960, thus ignoring the successes of modern technology that have dramatically reduced silica exposure in work zones. ARTBA also believes the agency may be doing more harm than good by requiring workers to wear respirators in hot environments, potentially exposing them to heat stroke and stress.

Now, ARTBA has joined in federal litigation over the rule.

EEOC Proposal
A second indication of increased regulatory activity is the Equal Employment Opportunity Commission (EEOC) proposal to increase reporting requirements for numerous employers, including contractors working on federal-aid construction projects. Currently, all private contractors with 100 or more employees working on such projects must report data reflecting the ethnicity, race, and gender of their employees through the “EEO-1” form. EEOC’s Feb. 1 proposal would require those employers to report salary and number of hours worked for employees as well.

The proposal raises numerous issues, including anticipated administrative and project costs associated with this additional regulatory burden. Other areas of concern may include the lack of context for these salary records, since the required reports will not include information on the employees’ seniority, education level or performance. Finally, because of recent large-scale breaches of confidential data entrusted to the federal government, this collection of proprietary salary information may raise security and privacy concerns also.

Waters of the U.S.
Finally, federal litigation continues over one of the largest regulatory efforts under the current administration, the efforts of the United States Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) to expand the current definition of “waters of the United States.” Currently, federal jurisdiction extends only to “navigable” waters and adjacent wetlands, however, under a new EPA rule the government’s reach would extend to all waters of the United States.

For transportation construction, this raises a disturbing scenario where federal jurisdiction would reach roadside ditches as soon as they fill with water. This, in turn, could lead to increased permitting burdens and opportunities for project opponents to stop transportation improvements through frivolous litigation. ARTBA and other trade associations and states have sued to stop the rule from being implemented. As this issue of “Transportation Builder” goes to print, the rule is stayed nationwide while the litigation proceeds. It could take years to resolve the issue.

With these and other regulatory efforts still underway, it is important to recognize the role of ARTBA’s “Transportation Makes America Work” (TMAW) program in helping to protect the market. TMAW contributions directly help support ARTBA’s efforts to litigate against federal regulatory overreach, as well as our efforts to join other associations in coalitions who seek legislative relief when federal agencies attempt enact burdensome rules.

While May 16 is a significant date for regulatory activities in this Administration, other rules and proposed rules will continue to be issued on May 17 and thereafter. ARTBA always keeps a close eye on this activity. We take pride in ensuring the voice of the transportation construction industry is heard during all regulatory discussions. Your generous TMAW donations help immensely in this effort.

To those who have given to TMAW: Thank you for your generosity and support! If you have not yet made a TMAW donation—please consider doing so and helping ARTBA continue to protect our industry.

Nick Goldstein is ARTBA vice president of environmental & regulatory affairs:
nickgoldstein@artba.org
More than 3 million miles of roads and over 300,000 bridges in the United States are owned and maintained by local governments.

In 1982, the Federal Highway Administration established the Local Technical Assistance Program (LTAP). In 1991, the Tribal Technical Assistance Program (TTAP) was also created. LTAP and TTAP help local governments improve management of their transportation networks.

There are 58 LTAP/TTAP Centers: one in each state, one in Puerto Rico, and seven regional Centers that serve tribal governments. Most Centers are housed at colleges, universities and state departments of transportation.

The mission of LTAP/TTAP is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

LTAP/TTAP strives to improve safety for users on local roads, help local governments build and maintain their infrastructure, utilize the workforce efficiently, and teach road workers how to do their jobs safely.

The national program focus areas are safety, workforce development, infrastructure management and organizational excellence. LTAP/TTAP Centers help communities improve the quality and condition of their transportation network.

For more information about the LTAP and TTAP, or to get contact information for your local LTAP/TTAP Center, please visit:

www.LTAP.org
Telematics: Real-Time Data to Improve the Bottom Line

Features that make it easier to gather machine telematics data have been added to the new construction equipment telematics standard from the Association of Equipment Manufacturers (AEM) and the Association of Equipment Management Professionals (AEMP).

The standard, which is near completion of the International Organization for Standardization (ISO) approval process, will also include a test database and a manufacturer verification system.

“The AEM/AEMP standard enables equipment users to gather more OEM equipment data into their preferred business or fleet management software, providing easier access, improving ability to manage and analyze information across their fleets, and helping to save time and money on the job site or within their operations,” said John Somers, AEM director product management—construction, mining & utility.

Easier Data Gathering
While original data points and their desired intent in the AEM/AEMP standard have not changed, the ISO review and drafting process has resulted in several key changes, including:

- More frequent data polling
- More data flexibility
- Better security
- Faster API load time
- More options for customers’ integrators
- Unit of measures standardized to metric
- More data per customers’ requests

“This ISO standard gives fleet intensive companies confidence the format of the data being gathered from multiple OEMs conforms to an international standard, which in turn eases the implementation process to utilize the telematics data in making better informed business decisions,” said Tim Truex, manager of electrical/midsize equipment at Kokosing Construction Company and AEMP technology committee chairman.

Testing, Data Verification
In conjunction with the AEM/AEMP telematics standard, AEM will offer a test database that allows third parties, software developers and major fleet owner developers to verify that their business systems are functioning correctly to pull in their desired information. The test database will help them to more efficiently create their new reporting systems by minimizing the need to contact multiple manufacturers directly.

And, AEMP will oversee a telematics provider compliance program that their feeds are functioning correctly, to help end users be assured they will be able to access the data in the new standard format.

The two test programs from AEM and AEMP will be designed to work together, as the two organizations work to provide systematic checks to allow the industry to smoothly address the next generation of efficiency and coordination through mixed fleet data collection and management.

Global Markets Covered
The AEM/AEMP telematics standard is based on the Draft API (Application Programming Interface) standard developed by the two industry trade groups.

It was submitted for acceptance to ISO to provide manufacturers, equipment users, fleet managers and all industry stakeholders with a standard they can use confidently across all market areas globally.

“ISO acceptance also provides a global governance and maintenance process that can refresh the standard as technology changes or end-users request new data,” said Nick Bollweg, engineering manager, WorkSight/ForestSight at Deere & Co. and liaison between the ISO working group and AEM/AEMP telematics committee. “This allows the standard to remain responsive to user needs and helps reap maximum efficiencies and productivity from the machines.”

The AEM/AEMP telematics requirements will be part of ISO 15143 (Earthmoving machinery and mobile road construction machinery—Worksite Data Exchange) as a new section—“Part 3: Machine Data.” Future plans include expanding the standard’s coverage beyond earthmoving.

For more information contact AEM’s John Somers at jsomers@aem.org, or 414.298.4172.
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