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# NEWS

## ACPA Names Recipients of Annual “Excellence in Concrete Pavements” Awards

Rosemont, Ill. (December 18, 2015) – The American Concrete Pavement Association (ACPA) has named recipients of its 26th Annual “Excellence in Concrete Pavements” awards, which recognize quality concrete pavements constructed in the United States and Canada.

The awards program encourages high-quality workmanship in concrete pavement projects, and serves as a way to share information about challenging and highly successful projects.

Judges representing various stakeholder groups throughout the transportation-construction community evaluate projects. The program recognizes contractors, engineers, and project owners who completed outstanding projects. The program requires projects to be completed in the calendar year prior to judging (2015). The recipients of the 2015 ACAPA Excellence Awards are:

### Reliever & General Aviation Airports

#### Silver Award Recipient

Project: Sedalia Regional Airport Runway 18-36 Reconstruction, Sedalia, Mo.  
Contractor: Ideker, Inc.  
Owner: City of Sedalia (Regional Airport)  
Engineer: HW Lochner

In 2009, the City of Sedalia, Mo., applied for and received a state grant for the reconstruction of 5,000 feet of Runway 18-36. Bids for the project were received in May 2013. The contractor began construction on the 5,000 foot long, 100 foot wide runway on June 28, 2014.

The new pavement section was 8 in. of concrete on 6 in. of recycled concrete base on 12 in. of lime-treated subgrade. Two short sections of connecting taxiway were also reconstructed and tied in to the existing pavement. The runway reconstruction allowed the airport to increase its runway approach category from Category BII to CII.

This upgraded approach category will enable the airport to service corporate jet traffic—a potentially important economic benefit for the region. The concrete paving of the runway was completed in just 4 days—an average placement of 3,086 cubic yards per day.

**Gold Award Recipient**

Project: Bowman Regional Airport Construction Bowman, ND  
Contractor: Northern Improvement Company  
Owner: Bowman County Airport Authority  
Engineer: Brosz Engineering, Inc.

This project encompasses the total construction of a new general aviation (GA) airport facility, including a 5700 ft. long by 75 ft. runway, as well as taxiways, hangars, and aprons.

The airport is located in the very southwest corner of North Dakota and on the edge of oil country.

The runway is now the longest GA runway in the State of North Dakota. The 6-in. thick pavements will routinely handle 30,000 lbs. aircraft weights.

At an early stage of planning, discussions of pavement material alternates, included maintenance costs after the initial project was constructed.

The airport authority, in combination with the Federal Aviation Administration and North Dakota Aeronautics Commission, chose concrete pavements for all surfacing through an alternate bid selection process, which included a 12% life cycle cost analysis allowance for concrete pavement. In the end, 6-in. thick concrete bids were only 6.8% higher than 4 in. asphalt options. With attractive concrete pavement prices, even the airport access road was paved in concrete.

**Commercial & Military Airports**

**Silver Award Recipient**

Project: Detroit Metro Airport Runway 4R/22L, Wayne County, Mich.  
Contractors: Ajax Paving Industries, Angelo lafrate Construction Co., and Toebe Construction LLC  
Owner: Wayne County Airport Authority  
Engineer: Kimley-Horn of Michigan, Inc., and Alfred Benesch & Company

Detroit Metro Airport is one of the nation's top large hub airports. It provides economic benefits to the region and provides key airline departures to major cities in the U.S., Asia, Europe, and South America.

When Runway 4R/22L was initially built in 1950, it evolved into a vital runway for long-haul international departure flights. After years of use, a seemingly insurmountable problem arose: How to rehabilitate the entire runway, which handles all of the long-haul international flights.

To overcome this obstacle, the engineering consultant team split the project into six bid packages that was completed over three years by two prime contractors. Much of the concrete paving was placed on the north and south simultaneously by two construction teams.

With excellent coordination, the contractors placed more than 528,000 SY of 17-in. concrete pavement in 4 ½ months—12 days ahead of an aggressive schedule.

**Gold Award Recipient**

Project: Hartsfield-Jackson Atlanta International Airport Runway 8L/26R Pavement, Replacement, Atlanta  
Contractor: McCarthy Improvement Company  
Owner: City of Atlanta - Department of Aviation  
Engineer: Aviation Infrastructure Solutions: (Michael Baker International and Pond & Company)

Taking on a project with a \$700 per minute liquidated damages clause, there is no room for error. The 9,000 foot long Category III arrival runway, 8L/26R, handles more than 500 flights to Hartsfield-Jackson Atlanta International Airport (ATL) every day.

It is no small matter to take it out of service. Only 29 days were allowed for the runway and high-speed taxiway portion of the project to be completed. The pavement replacement was split into two different phases.

The spring portion of the project consisted of pavement replacement on Taxiways Echo and Foxtrot managing concrete pours in conjunction with the air traffic across five ramps to and from the gates. During the fall phase, the construction team had 29 days to demolish and replace nearly 100,000 SY of 20-in. thick concrete. Despite many challenges the construction team managed finish the projects six hours ahead of the original schedule.

## Overlays - Airport

### Silver Award Recipient

Project: Wabash Municipal Airport Runway 9-27 Rehabilitation, Wabash, Ind.  
Contractor: E&B Paving, Inc.  
Owner: Wabash Board of Aviation Commissioners  
Engineer: NGC Corp.

This project represents another in a growing number of concrete overlays being built at general aviation airports in Indiana. This project was bid as an alternate bid in August 2013.

Work began in June 2014. Alternate pavement sections included a full depth reclamation with a 5 in. hot mix asphalt (HMA) overlay vs a 6-in. concrete overlay on existing HMA after profile milling.

The concrete option was less expensive on initial cost, and was selected as the preferred solution. After profile milling was complete, surface cracks were filled, the milled surface was flushed with water and power broomed.

The 75-ft wide runway was paved in 25-ft widths. An educational open house was facilitated by the Indiana Chapter ACPA during paving operations on one of the few “daytime” pours.

Approximately 20 engineers, contractors and suppliers attended a technical briefing on the project and the concrete overlay process followed by on-site observation of paving operations in-progress.

### Gold Award Recipient

Project: Runway 9-27 Pavement Rehabilitation, Greenwood County Airport, Greenwood, S.C.  
Contractor: McCarthy Improvement Company  
Owner: Greenwood County  
Engineer: Michael Baker International

In late October, 2014, McCarthy Improvement received notice to proceed on the Runway 9-27 Pavement & Lighting Rehabilitation Project at the Greenwood County Airport in Greenwood, South Carolina. The scope of work included 55,600 SY of 3-in. asphalt milling followed by a 5-in. thick concrete overlay.

All work had to be completed in 60 calendar days. Adding further complexity to this challenging project, Greenwood County Airport does not have air traffic control. Instead, amateur pilots call out on

a radio to announce which runway on which they will land. Some pilots would announce they were landing on the runway that was under construction, and crews would have to notify them via radio that was not possible.

Another factor was the weather. Temperature averages in Greenwood for November range between 60 to 70°F; however, on November 1st, an inch of snow fell. Although the weather created many issues, the project was completed successfully.

### **Roller Compacted Concrete (Industrial)**

#### **Silver Award Recipient**

Project: Toyota Motor Manufacturing Container Yard, Princeton, Ind. (Gibson County)  
Contractor: E&B Paving, Inc. Toyota Motor Manufacturing, Indiana, Inc.  
Owner: Toyota Motor Manufacturing, Indiana, Inc.  
Engineer: Mannik & Smith Group

After exploring alternatives and evaluating but rejecting the first two RCC bids, Toyota Motors Manufacturing Indiana (TMMI) accepted E&B Paving’s third bid to be the General Contractor for a new container lot on the Toyota complex in Princeton, Indiana.

This project would be Toyota’s first RCC lot at any of their U.S. facilities. The sub-base was 4 inches of compacted dense graded stone placed on 16 in. of soil cement.

RCC paving operations were performed during the early morning hours to avoid paving during extreme heat. Crews started at 3:00 am daily and typically completed paving before noon. E&B achieved production levels of over 1,000 CY placed per day.

Upon completion, the owner was said to be so pleased with the results that E&B Paving was awarded a contract for an additional RCC lot. The level of quality exhibited on this project also has captured the attention of many industrial and logistics facility developers in southwest Indiana.

#### **Gold Award Recipient**

Project: Prichard Intermodal Facility, Prichard, W.V.  
Contractor: Morgan Corp.  
Owner/Engineer: WVDOH, Division of Highways (WVDOH)

The new Prichard Intermodal facility encompasses approximately a 100 acre site in Prichard, W.V.

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It is serviced by a Norfolk Southern railroad line. Approximately 43,000 SY of heavy-duty roller-compacted concrete (RCC) pavement was used for the intermodal container yard.

The pavement design called for multiple pavement layers to reduce stresses on the subgrade and prevent excessive settlements. The pavement design section consisted of 6 in. of ballast, a geotextile fabric, 4 in. of open-graded bituminous drainage layer, and 18 in. of RCC pavement.

The RCC was placed in two 9-in. lifts using two paving trains. The paving trains were operated back to back placing both RCC lifts within 30 minutes to ensure bonding.

Adding to the complexity of this project was the coordination for the project. The owner, the West Virginia Department of Transportation's Division of Highways constructed the project in accordance with Norfolk Southern's standards, which required a high degree of coordination and communications.

### **Roller Compacted Concrete (Special Applications)**

#### **Silver Award Recipient**

Project: Missouri Route 19 Resurfacing & Shoulder Widening, Dent County, Mo.  
Contractor: Pace Construction Company, LLC  
Owner/ Engineer: Missouri DOT Central District

Project J5L1400B on Route 19 in Dent County is a resurfacing project that included two-foot shoulder widening. The shoulder widening allowed for optional pavement types.

The contract was awarded to Pace Construction; they opted to use the Roller Compacted Concrete option for the shoulder widening.

The RCC option allowed for faster construction and at a lower cost. The 2.5 million dollar project contained over \$700,000 of RCC shoulders, which consisted of over 42,000 SY.

#### **Gold Award Recipient**

Project: 45th Street Rehabilitation, Sedgwick, Kans.  
Contractor: Andale Paving, Inc.  
Owner: City of Bel Aire, Kans.

The 45th Street project was selected for this award based on the speed of the process of total reclamation and roller compacted concrete.

Andale Paving, Inc. milled 3 in. of the existing 6 in. of asphalt then did total depth reclamation and super slurry stabilization. They pre-mixed the sub-grade and used the fines and aggregate with the super slurry for the base then paved 7 in. of roller compacted concrete on top of the reclaimed asphalt base. The total time on this job from start to completions an opening to traffic was 14 days.

### **Municipal Streets & Roads <30,000 SY**

#### **Silver Award Recipient**

Project: Oneida Street, Oneida Street Reconstruction, Brown County, Wis.  
Contractor: Vinton Construction Company  
Owner/Engineer: Brown County Public Works and City of Green Bay

The Oneida Street Project consisted of reconstructing and widening a 1,300 ft stretch immediately adjacent to the Green Bay Packer’s Lambeau Field and the Brown County Memorial Complex and Research Center.

The project also included colored concrete sidewalks, crosswalks, and intersection crosswalks in addition to storm sewer repairs and traffic signal installation.

The colored concrete crosswalks, traffic signals, and rapid flash beacon crosswalk assemblies add enhanced visibility and safety to one of the heaviest pedestrian intersections in the county.

By closing the section of Onieda Street to traffic, Vinton Construction provided an estimated savings of \$150,000 to \$200,000 on the \$1.035 million job, relative to performing the construction under traffic.

Additionally, closing the section from Stadium Drive to Lombardi Avenue cut the length of the schedule from 3 to 4 months to 8 weeks and avoided any interruption to the Green Bay Packers’ schedule.

#### **Gold Award Recipient**

Project: Kelly Avenue Reconstruction from Covell Road to Coffee Creek, Edmond , Okla.  
Contractor: Duit Construction Co., Inc.

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Owner: Oklahoma Department of Transportation  
Engineer: Poe & Associates, Inc.

The Kelly Avenue project involved the reconstruction, widening, and beautification of an old 2 lane asphalt road in Edmond, Okla. Landscaping and red brick, stamped concrete medians accented a new bridge also constructed as a part of this project. The Oklahoma DOT allowed Duit Construction to close the road while a 5-lane bridge was reconstructed with a milestone time frame of 90 days.

The closure allowed completion of this bridge to be expedited significantly. In addition, Duit installed underground pipe and inlets, and built the subgrade and asphalt base during the closure, to open to traffic earlier than expected.

Outside of the limits of the bridge, the road reconstruction, including significant pipe work, was done in phases to allow for longer paving runs with reduced cold joints for a better quality pavement.

All the work was completed well before the scheduled Senior PGA Golf Tournament which the road and bridge serviced. The short time frame for reconstruction of the roadway and bridge resulted in Duit receiving the full \$150,000 schedule incentive.

### **Municipal Streets & Intersections (>30,000 SY)**

#### **Silver Award Recipient**

Project: US Route 127 -- Wilkinson Blvd. Reconstruction Frankfort, Ky.  
Contractor: The W.L. Harper Company  
Owner: Kentucky Transportation Cabinet (KYTC)  
Engineer: KYTC, Division of Highway Design

The Wilkinson Boulevard project consisted of approximately 71,000 SY of 10-in. jointed concrete pavement along a 1.73-mile stretch of US-127. The 42-year old existing concrete showed signs of severe wear and tear and major drainage issues.

Accessibility to public entities on and surrounding Wilkinson Blvd was of the upmost importance and was considered in construction phasing and traffic planning. The contractor worked closely with Buffalo Trace and others to ensure accessibility would not be affected by construction activities.

Additionally, three major paving phases were used to construct the section under traffic.



Palmer Engineering was subcontracted to develop the design grades and elevations for the project, and also modified the locations of the existing and proposed drainage structures.

Even with significant issues encountered in the existing subgrade material, the project was completed 34 days ahead of the revised completion date and 4 days ahead of the original completion date.

**Gold Award Recipient**

Project: Monroe Avenue Reconstruction City of Green Bay, Wisc.  
Contractor: Vinton Construction Company  
Owner: Wisconsin Department of Transportation and City of Green Bay  
Engineer: McMahon and Mead and Hunt

This \$5.2 million dollar construction project involved reconstructing a 1.0 mile urban segment of Monroe Avenue which carries portions of three main state highways as a principal arterial on the National Highway System.

The existing 4-lane roadway was constructed in 1948 and had never been resurfaced. Vinton opted to use five phases of construction instead of two to better accommodate the 38 businesses, schools, churches, and other facilities as well as the traffic at the 13 intersections located along the route.

The project called for 15 pavement gaps, but Vinton was able to reduce the actual gaps to two, with one on one coordination with businesses. Careful staging was incorporated to account not only for vehicular traffic, but pedestrian traffic as well, and colored crosswalks were poured at several major intersections. This was a pilot project for the FHWA Every Day Counts Initiative which helped reduce utility conflicts and resulted in completion ahead of schedule.

**County Roads**

**Silver Award Recipient**

Project: Weld County Road 49 and 22 Improvement Project, Weld County, Colo.  
Contractor: Interstate Highway Construction, Inc.  
Owner: Weld County, Colorado Dept. of Public Works  
Engineer: Tetra Tech

This project was one of the first of several that will eventually widen Weld County Road 49 from a 2-lane asphalt to a 4-lane concrete roadway.

This particular intersection is one of only two arterial intersections on the road's length and was a critical starting point to relieving congestion and facilitate widening of the road.

The schedule on this intersection reconstruction proved to be the controlling factor on this 90 calendar day project, and started to affect the job as soon as the low bidder was announced. Significant utility relocations resulted in IHC re-phasing the project to allow paving to begin during relocations. The re-phasing plan ultimately resulted in nearly \$250,000 in savings.

Although the project team experienced numerous delays and disruptions, including two destructive storms which alone caused 10 days of delay, the team was able to complete the project by the original completion date, which was 13 days ahead of the adjusted contract schedule.

**Gold Award Recipient**

Project: Monona County, Iowa Route E34, Monona County, Iowa  
Contractor: Cedar Valley Corp., LLC  
Owner: Monona County, Iowa  
Engineer: JEO Consulting Group, Inc.

This \$4 million reconstruction project winds through the rolling hills of western Iowa. The 7.43 mile project was to be rebuilt in three stages over 90 working days.

During the first month of construction, the jobsite suffered the wettest June in 150 years of Iowa weather records. To address the wet subgrade, Cedar Valley Corp suggested using fly ash to stabilize areas that weren't drying out.

An additional obstacle was the requirement for adjacent property owners to be able to traverse through the staged construction at all times. This was achieved through continual positive communication in addition to early opening via maturity testing, which reestablished access every night after paving ceased.

In addition to all these challenges, the project contained 41 vertical curves including 21 exceeding 4% and 4 exceeding 6%. Despite all of these challenges, the contractor was able to achieve 96% of the maximum smoothness incentive and complete the project in only 75 days.

## Concrete Pavement Restoration (CPR)

### Silver Award Recipient

Project: Rehabilitation of I-35, Daviess County, Mo.  
Contractor: Interstate Improvement, Inc.  
Owner/Engineer: Missouri Department of Transportation

This project was for the rehabilitation of an experimental unbonded concrete overlay constructed in 2006, which was designed to advance competition between the concrete and asphalt industries.

Deficiencies appeared in the unbonded overlay due to joint spacing, thin pavement sections, pavement faulting/settlement, and the overlay actually overhanging the underlying pavement.

A variety of remediation techniques were employed for the rehabilitation. Saw cuts were installed between the existing joints to alleviate pavement stresses which were causing random cracking.

Small cracks were repaired utilizing pavement cross stitching and larger cracks or areas of more severe deterioration were replaced. Dowel bar retrofits were also used on faulted joints.

After all the repairs were completed the entire project was diamond ground. The alternative to this \$3.5 million extension of this experimental section was an estimated \$20 million asphalt overlay resulting in significant savings and continued performance observations of the experimental section.

### Gold Award Recipient

Project: Denver International Runway 7-25 Complex Pavement Rehabilitation,  
Denver  
Contractor: Interstate Highway Construction, Inc.  
Owner: Denver International Airport  
Engineer: Aviation

This CPR project provided 18,000 SY of selective airfield concrete pavement removal and replacement at one of the nation's busiest airports. The project also required demolition and installation of airfield lighting, asphalt removal and patching, and selective spall repair.

The project allowed for a 30 day Administrative Period and 45 day project duration but a delay in the notice to proceed caused the administrative period to be cut in half. Because the project involved

closing one of two heavily used east-west runways, a tremendous effort to meet the project schedule was required.

In addition, the other east-west runway was scheduled for a subsequent project, both of which needed to be completed prior to winter. To complicate things further, on the first day of the project, the scope of the panel replacement was increased by 11%.

Interstate Highway Construction used four separate pavers to eliminate resizing, and allowed pavers to be moved into place at subsequent locations so there were no gaps in paving operations. As a result, the project was completed satisfactorily and will provide quality service for years to come.

## Industrial Paving

### Silver Award Recipient

Project: HE Bailey Turnpike - Positive Median Barrier Construction MC53,  
Cotton County, Okla.  
Contractor: TTK Construction Co., Inc.  
Owner: Oklahoma Turnpike Authority  
Engineer: XD Engineering, PLC

This project on the Oklahoma Turnpike was designed to remove the existing dirt median and replace it with concrete pavement, along with the installation of a 4-cable barrier system. The Oklahoma Turnpike Authority's policy of a dirt median dated back to the early 1960's, but was ill-equipped to handle the size and design of today's vehicles.

TTK's Replacement of 20 miles of dirt median resulted in eliminating a significant hazard. One innovation that expedited the grading process was a large I-beam mounted on a front end loader to fine grade the dirt behind the excavation.

The I-beam cut the subgrade to the required depth and left the crown in the middle which saved time and kept the concrete yield low.

TTK Construction pre-drilled all of the cable barrier footings and post holes before paving operations began allowing the cable barrier anchor bases and post holes to be filled with PCC Pavement while paving.

Despite only being allowed to close 2.5 miles of the inside lane at a time, TTK finished 53 days ahead of schedule achieving 65% of the schedule incentive.

**Gold Award Recipient**

Project: Camp Atterbury Railhead and Container Facility Edinburg, Ind.  
Contractor: Milestone Contractors, L.P.  
Owner: Indiana National Guard Railhead & Container Facility  
Engineer: Tetra Tech/Mead Hunt Joint Venture

To increase Camp Atterbury’s load capacity and prepare for transport of a brigade sized element, an antiquated single spur rail head was to be transformed into a state-of-the-art deployment facility containing nine parallel rail loading tracks, a marshalling yard, container yard, a 4,500-square-foot scale house, a 21,000-square-foot vehicle inspection building and a Truck to Truck-Truck to Ground Ramp.

This \$25 million project contained 27,000 SY of concrete pavement. The contractor faced a big challenge in figuring out how to incorporate all the different design features, which included doweled joints, reinforcement, wire mesh, expansion joints, thickened edge, inlets, and light bases.

A very detailed paving sequence plan allowed Milestone to slipform 90% of the paving, which helped contribute to a smooth surface.

Even though Camp Atterbury’s operations have since been altered, Milestone’s work and attention to detail have provided the facility with a pavement that will last many years.

**Urban Arterials & Collectors**

**Silver Award Recipient**

Project: Hospital Road Reconstruction, Brush, Colo.  
Contractor: Castle Rock Construction Company  
Owner: City of Brush, Colo.  
Engineer: RG and Associates and CESARE Inc.

Hospital Road is the interchange in the middle of the City of Brush. The City of Brush wanted to make Hospital Road the “gateway” to Brush.

The City of Brush had never built a concrete road before, but was seeking a long-term solution for this road. The city hired a designer who relied on the ACPA and the contractor for guidance and design.

The roadway had several issues which had to be overcome, including a fiber optics line, cable TV line and a power line, all of which were overhead and needed to be buried. Also there was a gas line that needed to be lowered and relocated.

The project involved correcting the sight distance on the road; water and storm water utility work; subgrade preparation; application of Class 6 road base; 4,500 ft of curb and gutter; and 10,000 SY of 8-in. doweled concrete pavement.

Castle Rock Construction designed five optimized concrete mixes for this project due to changes in aggregate sources. With the help of a four-bin feeder and pug mill being added to the concrete batch plant, the contractor was able to achieve a more consistent concrete batch and a better platform for the concrete paver. As a result, the design specifications were achieved for strength, depth, and ride.

The construction team's effort overcame many problems to finish the project on time and below budget. The project is aesthetically pleasing and was built with as little inconvenience as possible to the traveling public and the surrounding area. This quality construction project will serve as the Gateway to Brush for years to come.

**Gold Award Recipient**

Project:	State Highway 100, from Interstate 94 to Watertown Plank Road, Milwaukee and Wauwatosa, Wisc.
Contractor:	Trierweiler Construction & Supply Co.
Owner:	Wisconsin Department of Transportation
Engineer:	CGC, Inc. / WCP-200 (Joint Venture)

The high traffic volume, urban reconstruction project was completed in a fully developed commercial area in the City of Wauwatosa in Milwaukee County. This \$35 million project is part of the Zoo Interchange reconstruction program to increase local road capacity during the future construction of the core portion of the interchange.

The reconstructed STH 100 is an 8 lane urban arterial with 4 signalized intersections, storm sewer, 2 storm water ponds, sign structures, street lighting, retaining walls, and streetscaping.

The Bluemound Road/ STH 100 intersection has a 2013 AADT of 62,000 making it one of the busiest intersections in the state. Running diagonally beneath this intersection is a Union Pacific Railroad

tunnel, which required extensive rehabilitation and extensions to each end. The project required an aggressive schedule to complete an extensive amount of work by the required interim/final completion dates. This project included the construction of 131,000 SY of concrete pavement, 48,500 lineal ft of concrete curb and gutter, 118,000 sq ft of sidewalk, 5,600 sq ft of concrete median, and 1,110 feet of concrete barrier.

The project management team met on a regular basis with local businesses to discuss connecting parking lots to reduce and avoid numerous paving gaps. Ingenuity among the prime, subcontractors, and engineering staff allowed for two major intersections to be re-staged to avoid planned full closures and complete them ahead of schedule. Each intersection was opened early, thereby qualifying the contractor to incentives. The benefits of the changes reached well beyond the intersections with reduced impact to businesses, community outreach and elimination of detour routes.

To provide an exceptional ride, Trierweiler maintained a consistent, workable concrete mix, which was monitored through rigorous Quality Management Program testing. The optimized mix was proportioned correctly to allow consistent consolidation without excessive vibrations. Trierweiler received a concrete pavement strength incentive of \$12,644, but equally important, received no disincentives for the percent air, slump and thickness requirements required in the specification.

In addition, the ride of the project was considered excellent by the Department. Trierweiler worked together with the prime contractor to restage the major intersections in the project and worked with property owners and businesses to eliminate as many gaps and headers as possible. The result was faster construction and a ride on the project that exceeded expectations. There were no localized roughness corrections on this project to eliminate bumps.

Two other major successes of this project include the use of the Wisconsin Department's Owner Controlled Insurance Program and the use of a communication consultant. The attention to safety on this project yielded an accident free project for the contractor and public. The consultant developed a website, produced weekly newsletters, worked with the project- and contractor-staff, and coordinated construction activities with the more than 100 businesses on the project.

### State Roads

#### **Silver Award Recipient**

Project:	Dickinson County, Iowa State Route 86, Dickinson County, Iowa
Contractor:	Cedar Valley Corp., LLC (CVC)
Owner/Engineer:	Iowa Department of Transportation

This project involved the reconstruction of a 5 mile stretch of a dangerously designed roadway between US 9 and the Minnesota border. Existing Highway 86 contained 19 vertical curves below a 40 mph design speed.

The summer population of Dickinson County routinely swells to 100,000 each year as vacationers and anglers flock to the Iowa Great Lakes area. The project was assigned a contract period of 235 calendar days with a specified start date of April 1, 2013.

The contract included an incentive/disincentive clause of \$15,000 per day. The incentive was capped at 30 days or \$450,000. The disincentive penalty was not capped.

This seemingly simple project turned into a nightmare for several reasons. First, Iowa's extremely cold 2012/13 winter drove the frost down more than 5 feet. This was followed by a bitterly cold March, when temperatures were rarely above freezing. With 15 inches of snow in early April, the April 1 start date was delayed to April 16. All told, the project started on a very cold day in April and ended in a snow storm in November.

Also, all utility relocations were to have been completed prior to the project start. On April 16, only 1 mile of several miles of rural water lines had been relocated. There were no signs of the phone, gas, electric, and multiple fiber-optic lines.

Finally, a major issue with the plan left the contractor 160,000 CY short of fill material, all in an area surrounded by Department of Natural Resources and Fish and Wildlife wetlands. The contractor had previously explored a site 1.5 miles away that could work. Normally, it would have taken over a year to gain access to the dirt, but by partnering with the IDOT, the contractor managed to navigate all the steps to get the material.

The project, as designed, was anticipated to be a one stage paving project. However, due to the weather and other issues, the contractor paved the project in two stages. This allowed the contractor to complete the paving that tied into Highway 9 on the south end of the project, which allowed opening the first three miles of the project to limited local traffic.

CVC achieved the maximum thickness incentive bonus of \$75,317 which equaled 3% of the bid price of the concrete paving items. The IDOT also pays a three percent maximum bonus for meeting their quality management concrete (QM-C) specification. CVC earned the maximum bonus of \$62,846.



Having to relocate the paving spread twice, instead of once, as originally planned, negatively impacted overall smoothness, but the contractor still attained 66.12% of the maximum zero band smoothness incentive, thereby earning \$61,600.

**Gold Award Recipient**

Project: Nebraska-US 75 Union South, Cass & Otoe Counties, Neb.  
Contractor: Cedar Valley Corp., LLC  
Owner/Engineer: Nebraska Department of Roads

This project involved the reconstruction of 6.1 miles of US 75 from just north of Nebraska City to just south of Union, Nebraska.

Nebraska City’s annual AppleJack Festival draws nearly 80,000 people to Nebraska City to celebrate the kickoff of the apple harvest. The contract required the roadway to be open to traffic by September 13, 2014. The owner included an incentive/disincentive clause that paid \$8,000 per calendar day for early completion, which was capped at \$80,000. If the roadway wasn’t opened to traffic by September 13, however, the contract would be assessed an \$8,000 penalty—with no cap—per calendar day.

The existing 24-ft wide concrete pavement, along with a 3-in. asphalt overlay and 8-ft wide asphalt shoulders, were removed and hauled to an onsite crushing area. The existing roadway was widened and compacted.

After the new grading was completed, the paving platform was treated with 8 in. of hydrated lime. Finally, in preparation for paving, the treated subgrade was topped with either 5 in. of recycled concrete or 5 in. of recycled asphalt. The combination of these materials provided us with an excellent padline, which greatly enhanced the ability to achieve a smooth ride.

The local road system adjacent to US 75 was in poor shape and side road access was limited. Local access was required to be maintained to the 30 driveways and intersections that served the residences, farmland, and businesses located on the project.

When wet site conditions made the haul road impassable, the owner ordered 7,400 tons of surfacing stone to enable public access on the contractor’s haul road. After the opening strength was reached, local traffic was allowed to use the new pavement, which required extra vigilance to prevent traffic from driving on pavement that had yet to reach opening strength. Excellent communication enabled the contractor to meet the access requirements.

Additionally, the major rehabilitation of four bridges made accessibility to the project a considerable challenge. Due to the tight calendar day schedule, pavement removal, grading, subgrade stabilization, foundation course, and the structure rehabilitation all had to be constructed concurrently.

The tight schedule required CVC to start paving before most of the bridge work was completed.

Wet weather also was a factor. It rained on 62 days, which was 38% of the 164 calendar day project. The month of June was especially wet, when 9 inches fell. Despite the wet conditions, CVC's paving crew produced outstanding smoothness results. CVC attained 60 percent of the maximum IRI smoothness incentive on the mainline paving, thereby earning \$103,362. No corrective index grinding was required for CVC to attain an IRI reading of 52.58 inches per mile.

CVC's team successfully opened the project to traffic two days early, resulting in a \$16,000 incentive.

### Overlays (Streets & Roads)

#### Silver Award Recipient

Project:	Cannelburg Road Rehabilitation, Phase I Daviess County, Ind.
Contractor:	Milestone Contractors, L.P.
Owner:	Daviess County, Ind.
Engineer:	Lochmueller Group, Inc.

Cannelburg Road serves as the primary north-south artery for the Amish population in the county. A narrow road accommodating a mix of semis, large trucks, passenger vehicles, and horse and buggies, this corridor has seen a number of accidents over the past few years, including some fatalities.

Davies County officials began seeking federal funds to improve this 12-mile long corridor a few years ago. Concurrent with that effort, the State of Indiana accelerated the long-planned construction of the I-69 extension; which has been open to traffic through Daviess Co. since the end of 2012. This amplified the need to begin work on Cannelburg Road improvements.

The general scope includes a three-phase upgrade of the two-lane corridor. The county specified a 6-in. concrete overlay with 12-ft wide two-lane mainline and 8-ft wide, full-depth concrete shoulders, with an additional 2-ft wide asphalt shoulder on the outside edge to accommodate the horse and buggy traffic.

Phase I of the Cannelburg Road Rehabilitation started 500 ft. south of CR 450 and ran to 1700 ft. north of CR 550 for a total length of 1.5 miles. Other items in Phase I included realignment to improve line of sight; improvements of existing drives within the work zone; and installation of precast drainage structures.

While specifications called for the 16-foot straight edge to measure smoothness, Milestone decided to test the new paver's capability to achieve the smoothest possible result. On the first day, the contractor recorded a profile index of 1.5 in./0.10 mile.

More than ever before, state departments of transportation and other roadbuilding agencies are choosing concrete overlays as a way to rehabilitate and preserve their existing pavements saving the cost of removing existing pavement. Daviess County made the choice to leave the existing pavement in place, and add a 6 in. unbonded concrete overlay wherever possible in this corridor.

**Gold Award Recipient**

Project: Paving the State Line, Freeborn County, Mn., and Worth County, Iowa  
Contractor: Concrete Foundations, Inc.  
Owners/Engineers: Freeborn County and Worth County

Stateline Road is a shared jurisdiction between Freeborn County and Worth County, respectively in Minnesota and Iowa. The project included three different sections starting at Emmons, Mn., with 1.24 miles of Freeborn County Aid roadway, then a 5 mile section of Worth County, Iowa, and ending with a 6.20 mile section in Gordonsville, Mn.

Worth County was going to place a 4 in. overlay on existing concrete and bituminous sections, but the contractor proposed a 5 in. overlay. The group decided to use a minimum 4 in. depth for profile corrections less than 75 ft, with a goal of using a 5 in. optimal depth.

Worth County open bids first with our Special Provisions stating that Worth County's contractor would take precedence over the progress of our projects. As it turned out, Concrete Foundation Inc. was the prime contractor for all three projects.

The plant site was located in Iowa, 4 miles south from the west end of the project, and strategically located in the middle of the combined projects. Worth County took care of all permitting for plant site.

Next came the task of negotiating Minnesota DOT and Iowa DOT specifications. After all the discussions, few change were made. For example, Iowa's maturity method was used because

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Freeborn County officials were comfortable with the contractor doing something with which they were familiar. The officials also agreed to tining instead of carpet drag for the finish. Worth County oversaw the maturity method tests.

All went well, with the exception of rain delays for a couple of days. In Minnesota, the completion date was set for August 29, to avoid detouring school buses around the workzone. Worth County's completion time frame was in October, and as a result of excellent coordination and communication, the two counties and road users traveling on this roadway in both states have a high-quality, durable facility that will provide many years of service.

## Overlays (Highways)

### Silver Award Recipient

Project: I-70 Bonded Concrete Overlay, Dickinson County, Kans.  
Contractor: Ideker, Inc.  
Owner: Kansas Department of Transportation  
Engineer: HW Lochner

This project was completed on an 8 mile stretch of pavement on I-70 that was bid as a pavement rehabilitation project by the Kansas DOT. The original scope and bid documents was essentially a mill and fill.

This project allowed for this project to be bid as either asphalt or concrete, with either paving material requiring essentially the same process: A 2 in. mill of the existing pavement, followed by either a 3.5 in. concrete or 4 in. asphalt overlay.

The project received only bids for the concrete option, and the \$20 million project was awarded to Ideker Inc. The project scope included the 450,000 SY of concrete milling and concrete placement.

In addition to the milling and concrete paving, the project included mass excavation of over 240,000 CY, the construction of two new bridges on the I-70 corridor, the complete rehabilitation of two bridges, seven asphalt crossovers, several box culvert repairs or replacements, pavement patching, and other work.

The project was the first bonded concrete overlay of its kind to be bid by the Kansas DOT. In addition, this is the first bonded concrete overlay of less than 5 in. in thickness to be installed on a major Interstate section. Another first for the Kansas DOT was that this was the first project bid in Kansas that required the contractor to design and manage the Storm Water Pollution Prevention Plan, which

means the contractor and owner would share responsibility for any fines from the U.S. Environmental Protection Agency.

Daily production was an integral part of the overall success of this project. The contractor elected to pave the 3.5 in. bonded concrete overlay with a 24 ft wide initial pass for the mainline. From there the contractor, dropped back and installed a 6 ft wide shoulder on the median side and a 10 ft shoulder on the outside. The total roadway with upon completion was 40 ft wide.

The contractor averaged over 7500 linear feet when paving the 24 ft wide mainline and would average close to 10,000 linear ft of paving while placing the 6 and 10 ft shoulders. In addition to the concrete overlay on the mainline, shoulders and ramps, the project required close to 20,000 SY of full depth pavement. These areas included transition sections in and around the bridge work, as well as added acceleration and deceleration lanes at certain interchanges.

Access to and from I-70 was a crucial part of the projects success. The project had three major interchanges spread throughout the project, all of which were reconstructed.

The contractor worked very closely with the engineer, the Kansas DOT, and local businesses to keep all interested parties informed of closures, detour routes, and routine traffic maintenance. This communication was vital to the success of the project as well as the safety of the general motoring public.

**Gold Award Recipient**

Project:	Cherokee County, Iowa US Route 59, Cherokee County, Iowa
Contractor:	Cedar Valley Corp., LLC
Owner/Engineer:	Iowa Department of Transportation

US 59 is a major north-south artery that intersects east-west US 20. The route was plagued with thermal cracks, failing joints, severe joint roll-down, and bottom-up cracking.

This two stage, 12.31 mile project called for milling and placing 310,000 SY of nominal 6 inch unbonded concrete overlay.

The contractor maintained tight controls to meet the stringent schedule. CVC crews setline for its subcontractor's profile milling operation, checked the milling for accuracy, and also hauled and stockpiled all the millings. This work, along with concrete patching and subdrain installation, was

performed under a pilot car and flagger set-up furnished by the contractor. Flagging was critical since approximately 6,300 vehicles per day use Highway 59.

Existing US 59 was a 24-ft wide asphalt overlaid concrete pavement with 10-ft wide full depth asphalt shoulders. After the profile milling operation, haul traffic could not use what remained of the asphalt shoulders. The contractor placed the concrete overlay in two 22-ft wide pours. Consequently, during the first pour in each stage, haul units were forced to access the paving operation from one side of centerline and then use gaps in the stringline to reach the other side.

Concrete was dumped on the milled asphalt surface directly in front of the paver. Batch trucks could only back up to the paver one at a time since they could not use the thin asphalt shoulder, which impeded daily production. In addition, six foot bars were stapled to the surface during this operation at the interface between the driving lane and the shoulder. The tie bar operation needed to be completed quickly to prevent displacement by the haul trucks, which further impacted production.

The first stage of paving consisted of 208,000 SY. This stage was assigned 49 closure days with an incentive /disincentive of \$7,500 per calendar day. Soon after the paving operation started, almost 13 in. of rain fell, producing one of the wettest Junes on record. The contractor persevered and finished Stage 1 in only 35 closure days.

The contractor also maintained tight controls on the entire Stage 2 milling operation. Stage 2 was assigned only 28 calendar days to complete the remaining 102,000 square yards. The schedule for this stage was even more challenging than Stage 1, as almost 7,500 SY of full depth turning lanes and intersections were required to be built concurrently.

The contractor used only 19 calendar days to complete this stage, thereby earning a total of 23 days of bonus, or \$172,500 on the project. In total only 82 working days out of the 120 assigned were used.

Overlay projects normally require a considerably close sawing pattern. Specified were seven longitudinal saw cuts and crosscuts on six foot centers on the 44 foot wide pavement. On a typical day almost 30,000 lineal feet of sawing was required. The entire project required 660,000 lineal feet of sawing.

The paving design, along with the access issues, limited CVC's daily production and also required a lot of stringline adjustment where concrete batch trucks had to cross over the centerline string to reach the paver. Maintaining continual local access during the entire paving operation also required constant

stringline attention and even forced the contractor to pave away from both sides of a bridge in Stage 2.

Despite the many access restraints, the contractor earned 72.84 percent of the maximum zero band smoothness incentive on the mainline paving, thereby earning \$150,450.

### Divided Highways (Rural)

#### Silver Award Recipient

Project: US Route 50 Reconstruction, Osage County, Mo.  
Contractor: Millstone Weber, LLC  
Owner/Engineer: Missouri Department of Transportation

This \$26.2 million project consisted of constructing approximately 6.6 miles of four lane divided highway through extremely rough Missouri terrain. This new section of Rt. 50 stretches from Rt. 63 Junction to west of Rt. W near Linn, Mo., and involved more than 1.9 million CY of excavation; over 188,000 SY of concrete paving; and construction of two bridges and 10 box culverts. This large project had a challenging schedule, and innovation and the attention to safety were hallmarks of this project.

The notice to proceed for this project was October 15, 2012. The wet and frozen conditions in the fall and winter prohibited sustained earthwork progress for several months. This lost time required more work to be condensed in the construction seasons of 2013 and 2014 in order for the completion date to be met. Using stringless paving and an automated dowel assembly operation allowed the contractor to condense more work into the 2014 construction season.

This innovative spirit was also applied to improve the safety of the traveling public and construction personnel during construction. Some proposed drainage and pavement construction adjacent to the existing EB Rt. 50 traffic lane was originally designed to be performed with temporary lane closures and flagmen. After analyzing the proposed construction sequence, the contractor and the owner developed an alternative work plan to address potential workzone safety issues.

This alternative involved the widening of the north shoulder of existing Rt. 50, which allowed traffic to be shifted approximately 6 ft further away from the work area. This shift also allowed space for a temporary traffic barrier to be set to isolate the work zone from the live traffic lanes.

The owner and contractor shared the additional cost of this improvement, which resulted in a safer work zone for the public and construction personnel. This project, which involved thousands of man-hours of hard work and extra effort demonstrates the advantages of a healthy collaboration between contractor and owner. As a result, a quality product was delivered economically, safely and on time..

**Gold Award Recipient**

Project: Interstate 76 Reconstruction, Brush, Colo.  
Contractor: Castle Rock Construction Company  
Owner: Colorado Department of Transportation, Region 4  
Engineer: CESARE Inc.

Interstate I-76 is a corridor from Denver to Nebraska which connects to I- 80 in Nebraska. This project involved the reconstruction of 7 miles of the road in Brush Colorado and reconstruction of all four interchanges.

The existing road was a concrete road, which was more than 40 years old, had been overlaid with asphalt in about 2008. The project involved 475,000 CY of embankment, thirteen bridges, 168,771 SY of 12 in., doweled concrete pavement, 137,881 SY of doweled 10 in. concrete pavement; and many drainage improvements.

Brush is a rural farming community. The equipment used for farming was unable to go through the county road underpasses on I-76. The new bridges were raised 5 feet and widened to 120 feet. The areas where the grade was not raised for the new bridges were treated as an overlay.

The existing road way was milled for slope and overlaid with 10 in. of concrete pavement and the approaches to the new bridges were 12 in. concrete pavement. The old bridge on State Highway 71 over I-76 was replaced with a new 5 lane bridge.

Castle Rock Construction designed five optimized concrete mixes for this project due to changes in aggregate sources. With the help of a four-bin feeder and pug mill being added to the concrete batch

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plant, the contractor was able to achieve a more consistent concrete batch and a better platform for the concrete paver. The optimized mix is a positive factor in the production of smoother and more durable concrete pavements. The end result was a very consistent concrete being produced and very good rides on this project. The design specifications were attained on this project for strength, depth and ride. The end result was very consistent concrete being produced and good rides on this project. Most of the incentives were attained on this project for strength, depth and ride.

### Divided Highways (Urban)

#### Silver Award Recipient

Project: Interstate 96 (The I-96 Fix), Wayne County, Mich.  
Contractor: Ajax Paving Industries  
Owner/Engineer: Michigan Department of Transportation, Taylor TSC

In 2014, the Michigan Department of Transportation undertook the largest, single season, construction contract in its history. Known as the “96fix”, construction ran at a pace never before attempted. The effort was a combined road and bridge project consisting of reconstructing 7 miles (56 lane miles) of depressed urban freeway; reconstructing 22 ramps; rehabilitating 37 bridges, installation of new underground drainage sewers, constructing 15 to 25 ft retaining walls; and installing a new LED freeway lighting system.

This stretch of I-96 carries approximately 140,000 commuters each day. As such, this corridor is a key component to the state’s infrastructure connecting the large cities of Detroit, Ann Arbor, and Lansing. The success story began more than two years in advance of the actual construction by reaching out to the many stakeholders, including municipalities, businesses, schools, emergency responders, and commuters.

The Michigan DOT prepared 15 alternatives of which nine were presented to the public for their valued input. Several public meetings were held as well as offering a public survey of the alternatives. The use of dynamic traffic assignment modelling provided a visualization of the alternatives thereby increasing the credibility for the public to make a more informed decision. From this public partnering process came the support to fully close the freeway with the goal of reconstructing in less than one construction season. In order to successfully reach such a lofty goal of completing 700,000 SY of

concrete pavement; 800,000 tons of aggregate; 350,000 lineal feet of drainage pipe; 22 new bridge decks, and fully reconstructing two of the 37 bridges.

Leading the administrative innovations was the A+B contracting format, where bidders not only bid items of work but their bid carried a time component with the contract award going to the bidder whose combination produced the least overall cost and time to the owner. The contractor's bid proposed to close this seven miles of depressed urban freeway from early April to early September. The reality was that the freeway was fully reopened to traffic in only 167 days, approximately three weeks early.

The owner received a much needed quality improvement to a critical piece of the infrastructure; the contractor completed the project ahead of schedule and received a much earned incentive; and the motoring public and surrounding communities were given back a vital part of their highly traveled roadway system in less than 6 months. Innovations in construction methodologies and the partnering effort were keys to the successful outcome of the "96fix."

**Gold Award Recipient**

Project: DFW Connector Project Grapevine, Texas  
Contractor: NorthGate Constructors  
Owner: Texas Department of Transportation  
Engineer: Parsons Brinckerhoff

The DFW Connector is one of Texas' first design-build projects, and it has led the way in innovation that has resulted in project efficiencies, enhanced public support and best practices that are being applied across the state and nationwide. One of the largest concrete projects in its time, the DFW Connector project provided the traveling public with 155 lane miles of new concrete pavement on mainlanes, toll managed lanes, frontage roads and intersections.

Twenty-four lanes at its widest point, the project doubled the size of the existing highway system at the north entrance to Dallas-Fort Worth International Airport, the fourth-busiest airport in the world.

The project features new mainlanes, continuous frontage roads and toll managed lanes with dynamic pricing to keep traffic moving at a minimum of 50 mph. Awarded in October 2009, the DFW Connector represented the largest project funded in a single contract in Texas Department of Transportation's

(TxDOT) 94-year history. The DFW Connector received more federal funds – \$260 million – than any other transportation project in the nation.

NorthGate Constructors, a joint venture of Kiewit Texas Construction L.P. and Zachry Construction Corp., simultaneously designed and constructed the project. Under a comprehensive development agreement (CDA) with TxDOT, the project reached substantial completion ahead of schedule in November 2013, approximately half the construction time needed for projects built using traditional contracts. The project achieved final acceptance in April 2014.

The safety of construction workers and the traveling public was the project's top priority, and as result, the concrete paving team worked the whole project – more than 267,000 manhours of concrete paving operations – recordable-free.

In addition to the project's focus on safety, the concrete paving team focused heavily on quality. The team completed the project without rework and ultimately achieved an average International Roughness Index (IRI) of 62, well below TxDOT's criterion of 75.

Due to urban environment and size of the project, the DFW Connector's logistics were complex. The majority of the concrete paving had to be performed on weeknights and weekends to accommodate the traveling public.

### **About the Excellence Awards**

This year's 32 awards represent 16 categories of construction and preservation of concrete pavements used for highways, roadways, airports, and industrial pavement facilities.

The ACPA Excellence in Concrete Pavements awards are made possible, in large measure, because of the generous time commitment of independent judges from across the country. The judges each spend many hours reviewing executive summaries, project details, photographs, and other details and aspects of project submittals.

ACPA presents awards in both gold and silver levels. Judging is based on a point system, with independent judges awarding points for quality construction, addressing unique and unusual challenges, innovation, traffic management, and other criteria. In the case of ties, award judges present awards to co-winners.

## About the American Concrete Pavement Association

The American Concrete Pavement Association is the national trade association for the concrete pavement industry. The primary mission of the ACPA is to create and maintain a strong national presence through dynamic, strategic leadership; effective technical expertise and resources; and persuasive advocacy on behalf of the concrete pavement industry.

Founded in 1963, the American Concrete Pavement Association is headquartered in Chicago at 9450 West Bryn Mawr Ave., Suite 150, Rosemont, Ill. 60018. Telephone: 847.966.2272. The Association's metropolitan Washington, DC-office is located at 3925 Chain Bridge Road, Suite 300, Fairfax, Va. 22030. Phone: 202.638.2272. Visit us on the web at [www.acpa.org](http://www.acpa.org).

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### **Editorial Contact & Photos:**

Photos depicting the recipients of the 26<sup>th</sup> Annual ACPA "Excellence in Concrete Pavement Awards," as well as photos depicting award-winning projects, are available through Dropbox. Please click on the links associated with each project to view and download photos. No user ID or passwords are required.

To access the photos, please follow this link:

<https://www.dropbox.com/sh/dg0byl7anc4tgv5/AAor1i1GyxVnVYZ4nVUr7hMa?dl=0>

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