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## Norwalk Uses Crack & Seat to Rehabilitate Roadways

By Darwin Larson, P.E., APAI Municipal Field Engineer

In 1960, Norwalk, IA was a sleepy little town south of the Des Moines Airport with a population of 1,328. Over the past 50 years, the community experienced rapid growth as a bedroom community of Des Moines that has resulted in the population nearing 10,000 today. When Tim Hoskins became Public Works Director in 2009, he found that his street crews were spending a lot of their time replacing PCC panels in the subdivisions that were built during the 1960 – 1990 time period. When Hoskins evaluated the work that was being completed, he felt that they were “throwing good money after bad”. Although the work done by his crews was of good quality, there were many more bad panels that needed to be replaced near the new panels. The panel replacement work would need to continue indefinitely and there was no possibility of accomplishing anything to significantly improve the roadways’ condition.



Hoskins looked at the records that were available and found they were limited. He also didn’t know the condition of the underground facilities that had been in service for up to fifty years. “Almost every street had varying levels of failure” according to Hoskins. He wanted to look at all of the infrastructure together,

determine the severity of the problem, and come up with a plan to address the needs. A Request for Proposals was prepared and McClure Engineering was selected to perform the work. McClure Engineering was tasked with evaluating all existing infrastructure, determining the necessary improvements to bring the infrastructure

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## Tales from the Road

### “Building the Team”

This fall our son Henry joined our local basketball club’s 3rd grade team. The team he joined had played together last year and the kids were all friends. Henry was the outsider. After the first couple practices, Henry became frustrated with not getting passed the ball. We discussed his situation openly and honestly – he was not a great dribbler, he wasn’t buddies with the other players, but he was big and strong. We focused on what he could provide the team – play strong defense, be a physical rebounder, and as I affectionately termed the role, be the “Garbage man”. His role was to get rebounds, and put them back up for easy buckets. We focused his energy on what he could control. He has accepted and excelled in this role. I believe this need to find and define our role exists in all facets of our lives.

Having worked my way up through the asphalt industry, I have experienced numerous situations similar to what Henry was facing. During my first four years working construction, I would join a crew after I was done with college in May. I was the Outsider at the beginning of every season. Although all of these crews worked for the same company, each one had its own personality based on the foreman. It

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## Upcoming Events

*(Click event for more information)*

### ISU Laboratory Open House

**Date:** February 18, 2016  
**Location:** Asphalt Lab  
Iowa State University  
Town Engineering Bldg.  
Ames, IA

### 2016 Greater Iowa Asphalt Conference

**Date:** March 2-4, 2016  
**Location:** Holiday Inn Convention Center / Airport  
Des Moines, IA 50312

### World of Asphalt

**Date:** March 22-24, 2016  
**Location:** Music City Center  
Nashville, TN

### 2016 Asphalt Road Shows

**Date:** March 29, 2016  
**Location:** Fairfield Arts & Convention Center  
Fairfield, IA

**Date:** March 30, 2016  
**Location:** Wild Rose Casino & Resort  
Clinton, IA

**Date:** March 31, 2016  
**Location:** Ramada & Sullivan Bros. Convention Center  
Waterloo, IA

**Date:** April 5, 2016  
**Location:** Hansen 8, Buena Vista University  
Storm Lake, IA

**Date:** April 6, 2016  
**Location:** Harrah's Convention Center  
Council Bluffs, IA

**Date:** April 12, 2016  
**Location:** Holiday Inn – Des Moines Northwest  
Des Moines, IA

To register for the 2016 Asphalt Road Shows, click [here](#).

### 2016 Eastern Iowa Golf Outing

**Date:** June 28, 2016  
**Location:** Brown Deer Golf Course  
Iowa City, IA

### 2016 APAI Summer Meeting

**Dates:** July 21 – 22, 2016  
**Location:** Okoboji Common Resort  
Okoboji, IA

### 2016 Western Iowa Golf Outing

**Date:** August 30, 2016  
**Location:** Majestic Hills Golf Course  
Denison, IA

*(Tales from the Road – Cont. from Page 1)*

was a great learning experience for me watching the different leadership types and how the crews responded to each style. There was the “Tyrant,” who imposed his will through verbal assault and physical threats; the “Laissez-faire”, who let the crew run itself; the “Buddy”, who wanted to be everybody’s friend; and the Dr. Jekyll and Mr. Hyde, who was a Tyrant during the day and your buddy at night. To a degree, all of these styles worked – it depended directly on who was being led; but in all cases, the crew adapts, and often adapts, the style of its leader.

The key to being a good leader is building the team around you. Once the team is assembled and the roles are clearly defined, the next step is finding the underlying motivation for each team member that will drive them towards success. Some teammates need to be challenged, some need assurances, some

need strict discipline, and some need to be left alone to achieve team success. The crews and companies that achieve the consistent accolades and awards in our industry are driven by leaders who have built their teams over time, adding skilled players or developing young talent to fill a role. You will find these team leaders and crew members standing in front of their peers each year at the APAI Quality Construction Award ceremonies. These leaders motivate the “team” to work together, to take pride in their work and to do their very best each and every day. Even if it’s being the “G”-man.

Smoother is Better.

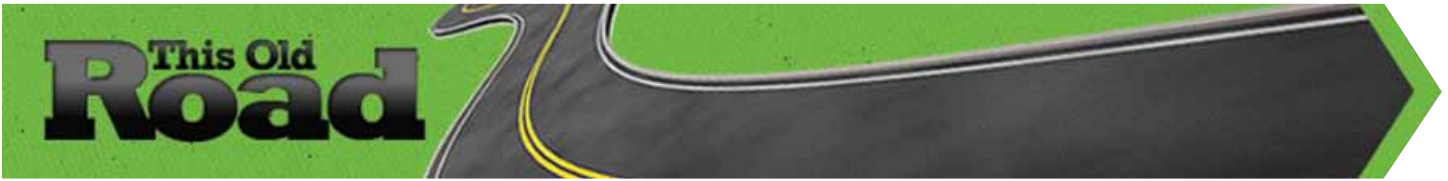


Bill Rosener



## DATES & LOCATIONS

<b>MARCH 29</b>	FAIRFIELD / FAIRFIELD ARTS AND CONVENTION CENTER
<b>MARCH 30</b>	CLINTON / WILD ROSE CASINO
<b>MARCH 31</b>	WATERLOO / RAMADA & 5 SULLIVAN BROTHERS CONVENTION CENTER
<b>APRIL 5</b>	STORM LAKE / BUENA VISTA UNIVERSITY
<b>APRIL 6</b>	COUNCIL BLUFFS / HARRAH'S CONVENTION CENTER
<b>APRIL 12</b>	DES MOINES / HOLIDAY INN NORTHWEST



## IA Highway 140



**I**A Highway 140 runs south from Highway 3 and the City of Remsen, IA twenty-five miles to Highway 20 and the City of Moville. The 15-mile stretch running of this road running between Remsen and Kingsley, IA is a heavy farm-to-market truck route and sees heavy loads each fall. The highway was originally constructed in 1966 on a compacted soil base with six inches of

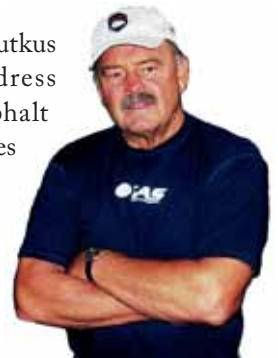
bituminous treated base and 2.5 inches of bituminous asphalt cement. These 8.5 inches of asphalt received a slurry seal in 1983 and a three inch hot-mix asphalt overlay in 1991. The road performed for an additional 24 years before it was rehabilitated last season with a three inch mill-and-fill operation. District 3 of the Iowa DOT and Tri-State Paving of Estherville received an APAI Quality

Construction Award for the project. This full-depth asphalt stretch of highway not only gave 49 years of performance life before this last overlay, but also provided value to the project through 33,000 tons of recycled asphalt (RAP) for the latest overlay. Full-depth asphalt continues to provide value both during its life, and during its rehabilitation. Well done IA 140, you are one fine "Old Road".

## Monster of the Midway Dick Butkus Headlines 2016 GIAC



**H**all of Fame Linebacker Dick Butkus will present the keynote address at the 2016 Greater Iowa Asphalt Conference (GIAC) on March 3rd at the Des Moines Airport Holiday Inn. Butkus played middle linebacker for the Chicago Bears from 1969-1974 and was one of the most feared and intimidating players ever to play in the NFL. He was a voted to the Pro Bowl eight times and was first ballot NFL Hall of Fame inductee in 1979. Since his career as a player, Butkus has become a well-known celebrity endorser, broadcaster, actor and asphalt advocate. His keynote address is titled "Paving Perfection". [Click here to see Butkus' Invite Video.](#)



## Norris Asphalt Wins the Sheldon G Hayes Award for the 2nd Time

Norris Asphalt Paving Co. of Ottumwa, IA and the Iowa DOT District 4 Office were announced on September 10, 2016 as the winners of the Sheldon G Hayes Award by the National Asphalt Paving Association (NAPA) at the NAPA Annual Convention in La Quinta, CA. The Sheldon G Hayes Award is bestowed upon the contractor and agency for the best asphalt paving project in the nation. Norris and the IDOT District 4 Office won the award for the US Highway 34 project in Adams and Montgomery Counties. This is the

second time that Norris Asphalt has won the award. They had previously won the award in 2001 and in the intervening years had been a finalist seven additional times,

**“The level of competition amongst the Iowa Asphalt contractors and Iowa’s concrete industry, drives the quality and performance of Iowa’s asphalt roads to the top of this industry nationally.”**

— Brady Meldrem, President of Norris Asphalt

including a second finalist project this year for US Highway 92 in Adair Co. “We approach every project we begin with the intention of winning the Sheldon G Hayes Award”, said Brady Meldrem, President of Norris Asphalt, “It’s a testament to the quality and workmanship that our crews achieve that we have been in the finals for this prestigious award so many times over the past 15 years.” Manatts, Inc. of Newton, IA and IDOT



District 6 were also honored as one of the four finalist projects on the Highway 1 project in Johnson and Linn Counties. With the fifth win of the Sheldon G Hayes

Award, Iowa contractors have now won the award more times than any other state. “We have the best paving contractors in the nation in Iowa” said Bill Rosener, Executive Vice President of the Asphalt Paving Association of Iowa. “The level of competition amongst the Iowa Asphalt contractors and Iowa’s concrete industry, drives the quality and performance of Iowa’s asphalt roads to the top of this industry nationally. The partnership with the Iowa DOT and its personnel has driven the level of expectations for this industry to be the very best. Iowa’s taxpayers and the driving public reap the benefits.”





## GREATER IOWA ASPHALT CONFERENCE

**SIGN ME UP!  
REGISTER NOW!**

# MARCH 3-4, 2016

PRE-CONFERENCE MARCH 2, 2016

**LOCATION**

AIRPORT HOLIDAY INN CONVENTION CENTER  
611 FLEUR DRIVE | DES MOINES, IA 50312

SPONSORED BY



IOWA STATE UNIVERSITY  
Institute for Transportation

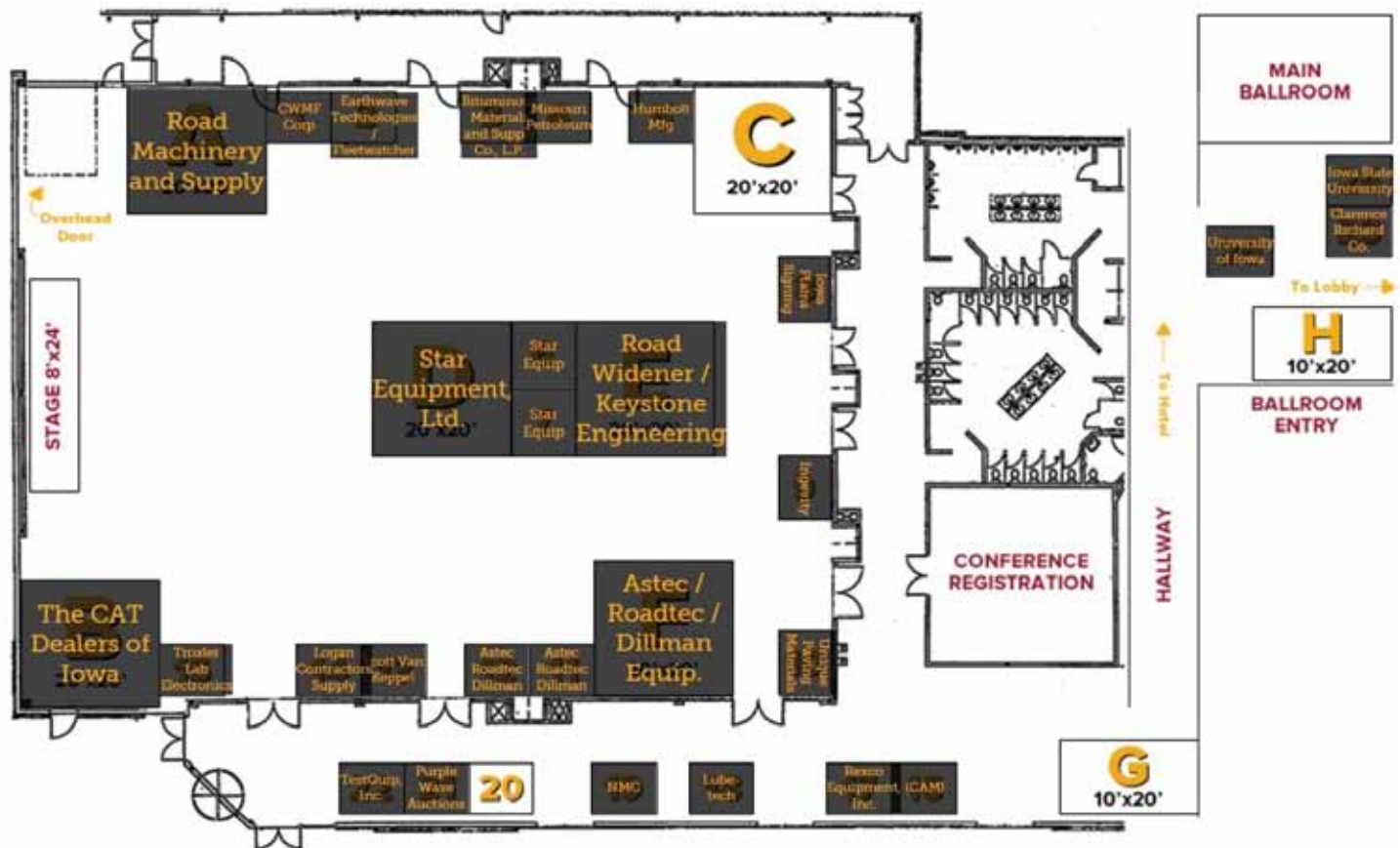


## CONFERENCE HIGHLIGHTS:

- Keynote Speaker: Dick Butkus, Hall of Fame, Chicago Bear
- Exhibitors Hall
- Most Interesting Asphalt Projects in Iowa
- The Future of Asphalt is Now
- Great Networking Opportunities
- Asphalt 101
- Fabulous Prizes!
- Paving Perfection for Plants and Paving
- Transportation and Iowa's Economy
- Sustainable Asphalt Practices
- Economical Pavement Design for Cities and Counties
- FHWA Tack Workshop
- Road Rehabilitation Clinic
- Leadership Series: Strategies for Creating a Culture of Excellence and Ethics
- 2015 APAI Quality Construction Awards
- Iowa DOT Technicians Update
- Innovative Asphalt Research Projects

# IOWA ASPHALT REPORT

## VISIT THE GREATER IOWA ASPHALT CONFERENCE EQUIPMENT SHOW IN THE EXHIBIT HALL



### EXHIBITORS:

#### Booth Number:

- 1 – CWMF Corp
- 2 – Earthwave Technologies / Fleetwatch
- 3 – Bituminous Material & Supplies Co.
- 4 – Missouri Petroleum
- 5 – Humboldt Mfg.
- 6 – Star Equipment, LTD
- 7 – Star Equipment, LTD
- 8 – Iowa Plains Signing
- 9 – Ingevity (formerly MeadWestvaco)
- 10 – Unique Paving Materials Corp.
- 11 – Astec, Inc.
- 12 – Astec, Inc.
- 13 – Scott Van Keppel
- 14 – Logan Contractor Supplies
- 15 – Troxler Electronics
- 16 – Corrective Asphalt Materials
- 17 – Rexco

- 18 – Lube-Tech
- 19 – NMC
- 20 –
- 21 – Purple Wave Auctions
- 22 – TestQuip, Inc.
- 23 – Clarence Richard Co.
- 24 – Iowa State University
- 25 – University of Iowa

#### Sponsored spaces:

- A – Road Machinery & Supplies
- B – CAT Dealers of Iowa
- C –
- D – Star Equipment, LTD
- E – Road Widener / Keystone Engineering
- F – Astec / Roadtec, Inc. / Dillman Equipment
- G –
- H –

# IOWA ASPHALT REPORT

## GREATER IOWA ASPHALT CONFERENCE

WEDNESDAY, MARCH 2 – FRIDAY, MARCH 4, 2016

AIRPORT HOLIDAY INN, 6111 FLEUR DRIVE, DES MOINES, IA

### WEDNESDAY, MARCH 2, 2016

- 11:30 a.m. - 4 p.m.** Registration – Airport Holiday Inn, Fleur Drive, Des Moines, Iowa
- 1 - 4 p.m.** **Optional Pre-Conference Workshop: “Asphalt 101”**  
\$125 per person – FREE for Greater Iowa Asphalt Conference registrants
- 1 - 4 p.m.** **Optional Pre-Conference Workshop: “FHWA Tack Best Practices Workshop”**  
\$125 per person – FREE for Greater Iowa Asphalt Conference registrants
- 1 - 4 p.m.** **Optional Pre-Conference Workshop: “Iowa DOT Update for Technicians”**  
FREE to those needing to update their HMA Certification
- 5 - 7 p.m.** **Working Man’s Break**  
Sponsored by the APAI

### THURSDAY, MARCH 3, 2016

- 8:00 a.m.** Registration and Continental Breakfast
- 9:00 a.m.** **Welcome and Opening Remarks** – Bill Rosener, Executive Vice President, APAI  
**Paving Perfection** – Dick Butkus, Chicago Bear Hall of Fame Middle Linebacker
- 10:00 a.m.** Refreshment Break in the Exhibit Area (Iowa Hall)
- 10:30 a.m.** **What Transportation Means to Iowa’s Economy** – Debi Durham, Iowa Economic Development Authority  
**Leadership: Creating a Culture of Excellence and Ethics** – Scott Raecker, Drake University
- 12:00 p.m.** **APAI Smoothness Awards Luncheon** (Banquet Room)  
Scott Dockstader and Mitchell Dillavou, Iowa DOT, Presenting
- 1:30 p.m.** **Afternoon Breakout Sessions I**
- |  |   |   |  |
|--|---|---|--|
| <b>TRACK A</b><br>Paving Perfection:<br>Plant Operations | <b>TRACK B</b><br>Road Rehab Clinic:<br>Pavement Rehabilitation<br>Best Options | <b>TRACK C</b><br>The Future of Asphalt<br>is Now | <b>TRACK D</b><br>Leadership Series:<br>Strategies for Creating<br>a Culture of Excellence –<br>Part 1 |
|--|---|---|--|
- 3:00 p.m.** Refreshment Break in the Exhibit Area (Iowa Room)
- 3:30 p.m.** **Afternoon Breakout Sessions II**
- |   |  |   |  |
|---|--|---|--|
| <b>TRACK A</b><br>Paving Perfection:<br>Paving Operations | <b>TRACK B</b><br>Economical Pavement<br>Design for Cities<br>and Counties | <b>TRACK C</b><br>Sustainable Asphalt:<br>Practices | <b>TRACK D</b><br>Leadership Series:<br>Strategies for Creating<br>a Culture of Excellence –<br>Part 2 |
|---|--|---|--|
- 6:30 - 9:00 p.m.** Asphalt Vegas in the Exhibit Area (Exhibit Hall)

### FRIDAY, MARCH 4, 2016

- 6:30 a.m.** Conference Breakfast
- 7:45 a.m.** Prize Drawing during Breakfast (must be present to win)
- 8:00 a.m.** **Rejuvenators / 2M Lb Road – Lee County** – Dr. David Lee, U of I / Dr. Chris Williams, ISU  
**Building a Better Perpetual Pavement** – Dr. Richard J. Willis, NCAT  
**Mumble “Quiet” Rumble Strip Investigation Results** – Rich Sanders, Polk County, MN  
**NDesign / I-Save** – Dr. Ashley Buss, ISU
- 9:45 a.m.** Refreshment Break
- 10:00 a.m.** Iowa’s Most Interesting Asphalt Projects
- 11:30** Grand Prize Drawings (must be present to win)
- 11:45** Adjourn

## Iowa Contractors Sweep the NAPA Awards Program

In addition to winning the Sheldon G Hayes (SGH) Award, and having three of the four finalist's projects for the SGH award, Iowa contractors crossed the stage at the National Asphalt Paving Association (NAPA) Annual Convention in La Quinta, CA several more times for their high quality asphalt projects constructed in Iowa. Norris Asphalt was recognized with four Quality in Construction (QIC) Awards for Farm-to-Market (FM) projects



M64 and N14 in Carroll Co., and US Hwy 2 in Centerville. Norris' FM project on T61 in Appanoose Co., received the Larry H. Lemon Award for being one of the nation's top 15 pavements under 50,000 tons. The LL Pelling Co., Inc. of North Liberty, IA received a QIC Award for US Hwy 218 in Washington and Johnson Counties. Manatts, Inc. in Newton, IA was recognized for both the I-80 project in Jasper Co. and the US Hwy 3 project in Humboldt and Wright Counties. Manatts,

Inc. of Ames, IA won a QIC Award for its rubblization project on US Hwy 69 in Story County. Tri-State Paving of Estherville, IA, an Old Castle Materials Co., won their Quality in Construction Award for the US Hwy 140 project in Plymouth County. Under the rules of the Sheldon G Hayes Award, all

“Iowa’s asphalt contractors and the Iowa Department of Transportation have much to be proud of. They consistently perform at the highest levels both in quality and smoothness. We are very proud of our partnership with Iowa’s Asphalt Industry and these awards are well deserved.”

– Mitch Dillavou,  
Iowa DOT Highway Division Director

projects receiving a Quality in Construction Award in 2016 are eligible to compete for the SGH Award in 2017.

“Iowa’s asphalt contractors and the Iowa Department of Transportation have much to be proud of, said Mitch Dillavou, Iowa DOT Highway Division Director,



“They consistently perform at the highest levels both in quality and smoothness. We are very proud of our partnership with Iowa’s Asphalt Industry and these awards are well deserved.”





*(Norwalk Uses Crack & Seat – Cont. from Pg. 1)*

up to current standards, developing cost estimates for the improvements, preparing a capital improvements program, and identifying a methodology to fund the required improvements.

McClure Engineering began their work by establishing a steering committee comprised of residents, elected officials, and city staff. Finding a way to fund all of the necessary improvements was the biggest challenge. Being a bedroom community, Norwalk didn't have enough tax base to fund reconstruction of all of the infrastructure. The steering committee determined that the improvements would need to be funded by general obligation bonds, enterprise funds, and special assessments, since almost all of the general fund and road use tax funds were used for ongoing operation and maintenance activities. Another outcome of the steering committee's work was an assessment policy that was adopted by the city council by ordinance. In the policy, the abutting

use did make the project viable for the city.

During this same time, McClure Engineering was evaluating the existing infrastructure by televising the sanitary sewers, inspecting the storm sewers, operating valves and hydrants on the water main, and determining a Pavement Condition Index (PCI) for each of the street segments. This information was compiled and recommendations regarding replacement of underground infrastructure were made. Various strategies for reconstruction, major rehabilitation, or preventative maintenance of the roadways were proposed and a priority list was developed.

One of the first streets to be selected for the new program was Wakonda Drive from Highway 28 to Lakewood Drive. Wakonda Drive was in overall poor condition, had one of the lowest PCI ratings, and was a major street in the subdivision. "Selecting Wakonda Drive provided the most benefit to the most

existing Portland Concrete Cement (PCC) roadway into 18 inch to 36 inch squares, turning the rigid concrete pavement into a flexible base for the HMA overlay. The road is then seated by driving a heavy roller over the cracked roadway. The primary purpose of this process is to reduce the amount and severity of reflective cracking thus prolonging the life of the new HMA overlay.

Hoskins was not familiar with this method of rehabilitation, so he viewed projects that had been completed using that process in Carlisle, Pleasant Hill and Clive. He was impressed with the performance of the projects that had been done using the crack and seat process. Since Wakonda Drive is located in an established neighborhood, he was also concerned about maintaining access for the over 100 households along the 4000 foot long project. By using the crack and seat process followed by a HMA overlay, he felt the project could be completed with minimal disruption to the property owners. Cost was another factor in the decision making process. The crack and seat process followed by a HMA overlay was about half the cost of full reconstruction. Based on the performance that Hoskins had seen, he felt that an overlay following the crack and seat process would perform just as well as total reconstruction.

The McClure condition survey determined that a three block section of the sanitary sewer was in such poor condition that the entire line would need to be replaced. The replacement of the sanitary sewer would require removal of the existing PCC street. In this section, an 8 inch full-depth HMA was placed between new curb and gutter. The HMA pavement design thickness was designed to carry heavy traffic conditions for the collector street.

Construction started in the spring of 2015 with the installation of a combination subdrain/footing drain sewer on both sides of the street behind the curb. McClure Engineering believes that the installation

*(Continued Page 11)*



property owners are assessed for the things that they are typically responsible for including sewer service line, water service line, sump pump service line, driveway approach, and sidewalk. The policy also includes the assessment of new curb and gutter to the property owner. Although special assessments were less than ten per cent of the total construction cost, their

people" according to Hoskins. Once Wakonda Drive was selected, the city and the consultant looked at several different rehabilitation and reconstruction alternatives. Jeff Schug with McClure Engineering recommended crack and seat followed by a hot mix asphalt (HMA) overlay. The crack and seat process uses a specialized concrete breaker to fracture the

## The Stars Shine Bright at APAI Black Diamond Anniversary Convention

The stars shone big and bright at the 60th Annual Asphalt Paving Association of Iowa Annual Convention held on December 2-3 at the West Des Moines Marriott. The two day event featured industry heavy-hitters, a football icon and the leader of the great State of Iowa, Gov. Terry Branstad.

On Wednesday, December 2nd, Members Only Day, the attendees



were welcomed with their very own Black Diamond 60th Anniversary commemorative paper weight. The APAI Committee Meetings and Business Meeting featured special presentations by Associate Chairman, Doug Clement; Iowa State University Professor, Dr. Chris Williams; University of Iowa Professor, Dr. David Lee; and a speech from the 2016 APAI President, Steve Leonard of Norris Asphalt Paving, Ottumwa, Iowa. The day concluded with a fun-filled night at Asphalt Vegas. (No details here – what happens at Asphalt Vegas!; stays at Asphalt Vegas!)

The Thursday line-up for the Black Diamond Anniversary Convention was a Who's Who in the Asphalt World. The morning line-up began with Iowa DOT Director, Paul Trombino III, followed by IDOT Pavement Management Engineer, Dr. Scott Schram, and IDOT District 6 Materials Engineer, Roger Boulet. Dr. Randy West, Director



of the National Center of Asphalt Technology (NCAT) discussed the long history between Iowa and NCAT. The morning presentations continued with Kevin Kelly, President of Walsh & Kelly contractors of South Bend, IN and incoming NAPA Chairman, and finished with Dan Hampton, Chicago Bear Hall of Fame Defensive Lineman. Mr. Hampton drew strong



parallels between the “Commitment to Excellence” found in Iowa’s Asphalt Industry and the commitment that ran through the 1985 Chicago Bears Super Bowl XX Championship Team.

The APAI Quality Construction Award Luncheon was packed with award winners and scholarship attendees. A full list of APAI award winners can be found at [www.apai.net/2016awardwinners.aspx](http://www.apai.net/2016awardwinners.aspx).

Bill Rosener, Executive Vice President of the APAI, introduced a special movie highlighting Iowa’s asphalt greats. Rosener then introduced Iowa Governor Terry Branstad and presented him with a plaque commemorating his leadership in preserving Iowa’s infrastructure. Gov. Branstad congratulated the APAI on 60 years and praised the high quality roadways that APAI members have paved across the state.

The afternoon session, “5 Things You Need to Know in the Next 5 Years” was an unmitigated success. Presentations by the Iowa DOT, APAI contractors, and academia highlighted the high level of innovation in today’s asphalt industry.

The Presidential Banquet was a beautiful formal event. The APAI Scholarship Silent Auction and Live Auction, was a huge success; raising over \$25,000 for future APAI scholarship winners! The evening finished with APAI favorite, the Johnny Holm Band and karaoke by Jeff Burroughs.

The APAI staff would like to thank our members for the support that they provided for this event. Iowa’s asphalt industry is the best in the nation and the APAI is proud to represent this amazing group. A special thank you

to our 60th Anniversary Committee APAI President Matt Thompson and Chairman, Dr. Joe McGuire for their leadership; Tania Rosener and Danielle Hargens for organizing the amazing Ladies Luncheon and the APAI staff: Minnie Coree, Larry Mattusch, Royce Fichtner, and Darwin Larson for their hard work in making this our most successful Convention ever!

## *We would also like to thank our sponsors:*

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MURPHY TRACTOR & EQUIPMENT CO., INC.  
ROADTEC, INC.  
STAR EQUIPMENT, LTD.  
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VALLEY ENVIRONMENTAL SERVICES  
WEILER  
WHITFIELD & EDDY, P.L.C.  
ZIEGLER, INC.

*(Norwalk Uses Crack & Seat – Cont. from Pg 9)*

of subdrain is very important and tries to include it in all of their projects. Many of the homes along the street had sump pump lines that discharged to the street and collecting this water was very important to the City of Norwalk. After the combination subdrain was installed, millings were placed where the driveway approach had been removed in order to provide temporary access for the residents. After completion of the combination subdrain, 2.5 feet of the existing PCC street was sawcut and removed. Six inches of modified subbase was placed and a new 2.5 foot curb and gutter section was constructed by Grimes Asphalt and Paving. The new curb and gutter was placed three inches above the old PCC surface to accommodate the HMA overlay. The existing PCC street between the new

children on their way to an elementary school located just one block south of Wakonda Drive.

Hoskins felt that he was able to complete a major rehabilitation project with limited disruption to his residents. He said, “The crack and seat process, coupled with raising the curb line, allowed us to utilize the structure of the existing road, maintain access for the citizens, and complete the project for half the cost and in much less time than full reconstruction”. He plans to use this method of rehabilitation on future projects in his community. In comparing crack and seat with an asphalt overlay to reconstruction, Jeff Schug, Project Engineer for McClure Engineering, concurred with Hoskins adding “It is as good a product, at a lesser cost, with much less inconvenience to the residents”.



curb and gutter was then cracked and seated. Grimes Asphalt and Paving placed two 1.5 inch lifts of HMA to complete the street rehabilitation. The replacement of the sanitary and storm sewers was completed while the work on the other portions of Wakonda Drive was being done. Sidewalks did not exist along most of Wakonda Drive and the construction of new sidewalks on both sides of the street was included in the project. This much needed improvement will help the local

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*Darwin Larson, PE is the APAI Municipal Field Engineer. Prior to joining the APAI in 2015, Larson worked for the City of Des Moines, IA for 36 years in various capacities within the Storm Water Utility, Public Works and Engineering Departments. Larson has extensive experience in the design and construction of asphalt paving projects. You can contact him directly at [darwinl@apai.net](mailto:darwinl@apai.net).*

## APAI Members

### CONTRACTOR MEMBERS

Aspro, Inc., Waterloo  
 Barkley Asphalt, Sioux City  
 Blacktop Service Company, Humboldt  
 Determann Asphalt Paving, L.L.C.,  
 Camanche  
 Duinick Inc., Prinsburg, MN  
 Fort Dodge Asphalt Company, Fort Dodge  
 Gee Asphalt Systems, Inc., Cedar Rapids  
 General Asphalt Construction Company,  
 Davenport  
 Grimes Asphalt & Paving Corp., Grimes  
 Hansen Asphalt, Inc., Iowa City  
 Heartland Asphalt, Inc., Mason City  
 Henningsen Construction, Inc., Atlantic  
 Illowa Investment, Inc., Blue Grass  
 Kluesner Construction, Inc., Farley  
 Knife River Midwest, L.L.C., Sioux City  
 Koss Construction Company, Topeka, KS  
 Manatt's, Inc., Brooklyn  
 Mathy Construction Company, Onalaska, WI  
 River City Paving, Dubuque  
 McCarthy Improvement Company, Davenport  
 Midstate Reclamation, Inc., Lakeville, MN  
 Norris Asphalt Paving Company, Ottumwa  
 Oldcastle Materials Group  
 Cessford Construction Company, LeGrand  
 Des Moines Asphalt & Paving Company,  
 Des Moines  
 Omni Engineering, Omaha, NE  
 Tri-State Paving, Inc., Estherville  
 L. L. Pelling Company, Inc., North Liberty  
 Shamrock Construction Company, L.L.C.,  
 Coralville  
 Tri-City Blacktop Inc., Bettendorf  
 Valley Construction, Rock Island, IL  
 Western Engineering Company, Inc., Harlan  
 W.K. Construction Co., Middleton, WI

### SUPPLIER MEMBERS

Bituminous Material & Supply Company, Inc.,  
 Des Moines  
 Flint Hills Resources, Dubuque  
 Jebro, Inc., Sioux City

### AGGREGATE SUPPLIER MEMBERS

BMC Aggregates, L.C., Elk Run Heights  
 Concrete Materials Co., Sioux Falls, SD  
 L. G. Everist, Inc., Sioux Falls, SD  
 Hallett Materials, Des Moines  
 Martin Marietta, Des Moines  
 Schildberg Construction Company, Greenfield  
 Wendling Quarries, DeWitt

### ASSOCIATE MEMBERS

Akzo Nobel Surface Chemistry, Chicago, IL  
 Altorfer, Inc., Cedar Rapids  
 Antigo Construction, Inc., Antigo, WI  
 Astec, Inc., Chattanooga, TN  
 Barnhill & Associates, West Des Moines  
 James W. Bell Company, Inc., Cedar Rapids  
 Bitco Insurance Companies, West Des Moines  
 BOMAG Americas, Kewanee, IL  
 Bonnie's Barricades, Inc., Des Moines  
 Burroughs Consulting Group, Hiawatha  
 Capital City Equipment Co., Des Moines  
 Central Service & Supply, Inc., Ankeny  
 Clarence Richard Company, Minnetonka, MN  
 Coleman-Moore Company, Des Moines  
 Construction & Aggregate Products,  
 Des Moines  
 Construction Materials Testing, Des Moines  
 Corrective Asphalt Materials,  
 South Roxana, IL  
 Cryogenic Engineering, Cedar Rapids  
 CWMF, Corp., Waite Park, MN  
 Cylosoft, Inc., Ames  
 Denco Highway Construction, Mingo  
 Dynapac (Atlas Copco), Andover, KS  
 J.D. Donovan, Inc., Rockville, MN  
 Earthwave Technologies, Indianapolis, IN  
 Elite Flagging, Inc., Cedar Rapids  
 Flagger Pros USA, L.L.C., Ames  
 Arthur J. Gallagher, Des Moines  
 Gencor Industries, Inc., Orlando, FL  
 Glendandy Marketing & Advertising, Ames  
 Go Big Promotions & Apparel, Des Moines  
 Heuss Printing, Inc., Ames  
 Holmes Murphy & Associates,  
 West Des Moines  
 Housby / VOCON, Des Moines  
 Humboldt Manufacturing Company,  
 Schiller Park, IL  
 Iowa Parts, Inc., Cedar Rapids  
 Iowa Plains Signing, Slater  
 IronPlanet, West Des Moines  
 Jerico Services, Inc., Indianola  
 Jim Hawk Truck Trailers, Inc., Altoona  
 Kwik Trip, Inc., LaCrosse, WI  
 La Mair-Mulock-Condon Company,  
 West Des Moines  
 Logan Contractor Supply, Urbandale  
 Manhole Adjustable Riser Company, Oskaloosa  
 MeadWestvaco Corporation,  
 North Charleston, SC  
 Merchants Bonding Company, Des Moines  
 Mid-Iowa Enterprises, Inc., Ames  
 Midwest Tennis & Track, Denison  
 Ron Monson and Sons, Britt

Murphy Tractor & Equipment Company, Inc.,  
 Wichita, KS  
 National Minerals Company, Eagan, MN  
 Principal Financial Group, West Des Moines  
 Quality Striping, Inc., Des Moines  
 Quality Traffic Control, Inc., Des Moines  
 Quick Supply Company, Des Moines  
 R2R Recycling, L.L.C., West Des Moines  
 Rexco Equipment, Inc., Cedar Rapids  
 Ritchie Bros. Auctioneers, Medford, MN  
 Road Machinery & Supplies, Des Moines  
 RoadSafe Traffic Safety, Inc., Des Moines  
 Roadtec, Inc., Chattanooga, TN  
 Sakai America, Inc., Adairsville, GA  
 Save and Pave, Sioux Center  
 Save Our Sewers, Inc., Cedar Rapids  
 Scott Van Keppel, Cedar Rapids  
 Soil-Tek, Grimes  
 Star Equipment, Ltd., Des Moines  
 S.T.A.T.E. Testing, L.L.C., East Dundee, IL  
 Tarmac, Inc., Blue Springs, MO  
 Titan Machinery, Des Moines  
 Troxler Electronic Laboratory, Research  
 Triangle Park, NC  
 Unique Paving Materials, Cleveland, OH  
 Valley Distribution Corp., West Burlington  
 Valley Environmental Services, Newton  
 Walker Construction Company, Emporia, KS  
 Waste Commission of Scott County, Buffalo  
 Weiler, Knoxville  
 Wells Fargo Bank, Des Moines  
 Whitfield & Eddy, P.L.C., Des Moines  
 Wirtgen America, Inc., Antioch, TN  
 Ziegler, Inc., Des Moines

### CONSULTING ENGINEERS

Anderson-Bogert Engineers & Surveyors, Inc.,  
 Cedar Rapids  
 Bolton & Menk, Ames  
 Calhoun-Burns Associates, West Des Moines  
 Clapsaddle-Garber Associates, Marshalltown  
 FOTH, Cedar Rapids  
 Fox Engineering Associates, Ames  
 French-Reneker-Associates, Fairfield  
 HGM Associates, Inc., Council Bluffs  
 I & S Group, Storm Lake  
 IIW, P.C., Dubuque  
 JEO Consulting Group, Inc., Carroll  
 McClure Engineering, Clive  
 Terracon, Cedar Rapids  
 Thiele Geotech, Inc., Omaha, NE  
 Veenstra & Kimm, West Des Moines

### AFFILIATE MEMBERS

Scott County Engineering