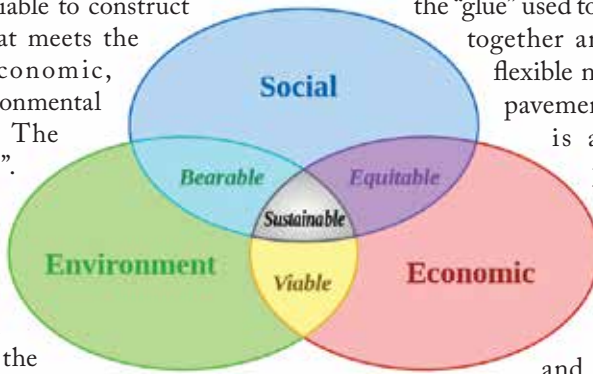




www.apai.net

SUSTAINABLE PAVEMENTS

When researching the subject of sustainability, the underlying theme of most articles preach the Three Pillars of Sustainability – Social Sustainability, Environmental Sustainability, and Economic Sustainability. Asphalt construction has a viable social context in improving the quality of life for the traveling public, however, the primary focus of this article will be on the environmental and economic sustainability of asphalt paving both in Iowa and nationally. In the Venn Diagram shown below, where environmental and economic meet, there is viability. Is it viable to construct a pavement that meets the criteria of economic, social and environmental responsibility? The answer is “YES”. Asphalt pavements have shown the ability to meet all three pillars of the sustainability equation.



Definition of Sustainability

The origins of sustainability began in the early 1960s into the 1970s when environmental awareness began to receive both national and international attention. The desire by citizens for cleaner water, better air quality, and decreased consumption of fossil fuels has continued to fuel the premise of building a sustainable

future for those who follow us. According to one learned scholar, “Sustainability is defined as a requirement of our generation to manage the resource base such that the average quality of life that we ensure ourselves can potentially be shared by all future generation.”¹ In short, we should leave the world as good, or better, than we found it.

Raw Materials

Hot-mix Asphalt (HMA) is a combination of 95% aggregates and 5% asphalt cement binder. Asphalt cement is the “glue” used to bind the aggregates together and also creates the flexible nature of the asphalt pavement. Asphalt cement is a product of the petroleum refining process. During the refining process, the light distillates (gasoline/kerosene) and medium distillates (diesel fuel/motor oil) are removed leaving the heavy distillates, sometimes referred to as the “bottom of the barrel”. These heavy distillates are then refined into Performance Graded (PG) asphalt binders.

The production of PCC requires a mixture of aggregates and Portland Cement. The production of cement requires the use of a kiln that heats the

(Continued Page 14)

Tales from the Road



Have No Fear

I love spring. The trees begin to bloom, the sounds of a baseball hitting the glove can be heard, and the smell of asphalt is in the air. Glorious. Henry, my ten year old son, is playing in his second year of Little League Baseball for the Johnston Orioles. Last year he played three games before breaking his wrist roller-skating, so this feels like a red-shirt rookie year. One of the attributes that I admire in him is his lack of fear. I did not possess his self-confidence as a kid. I was afraid to try new things for a fear of failing. Henry has no fear of failing and has shown this year in spring baseball that he welcomes the pressure of the spotlight. Henry’s new coach started Henry at first base at the beginning of the season, then asked him to catch, and last week, had him pitch a few innings. All three positions are high-pressure, but in 10 year old baseball the catcher and pitcher are involved with 95% of everything that happens on the field. I was surprised when halfway through the first game he came trotting out of the dugout with all the catcher’s gear on. He had never caught before and he didn’t even know how to squat down on his haunches to catch. He struggled for a bit, took a foul ball off his throwing hand that started bleeding (rubbed some dirt on it), then he started to settle in and did a pretty darn good job. His willingness to step-up and try something he had never done before made me think back to when I

(Continued Page 2)

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Upcoming Events

(Click event for more information)

2017 Eastern Iowa APAI Golf Outing

Date: June 28, 2017

Location: Amana Colonies Golf Course, Amana, IA

2017 NAPA Midyear Meeting

Dates: July 16-19, 2017

Location: Westin Michigan Avenue, Chicago, IL

2017 APAI Summer Meeting

Dates: July 27-28, 2017

Location: Bridges Bay Resort, Okoboji, IA

2017 Western Iowa APAI Golf Outing

Date: August 29, 2017

Location: Majestic Hills Golf Course, Denison, IA

2017 62nd APAI Annual Convention

Date: November 29-30, 2017

Location: West Des Moines Marriott, West Des Moines

(Tales from the Road – Cont. from Pg. 1)

conquered my fear of failing.

I was 18. It was my second summer of working for Henningsen Construction and I was the laborer for the laydown crew. It was midway through the season and we were shouldering a job we had just completed in SW Iowa. My foreman pulled up where I was dumping trucks and told me to jump in. He asked me if I had ever run a roller before. I had not. I had never run anything larger than a lawn mower. He took me back to the very start of the project where an old Hyster roller sat waiting with this tough guy from my crew named Rick leaning against the machine. "I need you to roll the 45° on the edge of the shoulder," said my foreman. "Rick will show you how." The Hyster had a wide flat rubber tire on the front, a steel drum roller on the back and a howling Cummins Diesel under the hood. The job, as Rick explained it, was to drive the roller along the edge of the rock shoulder to create a compacted 45° edge without tipping over in the ditch. The problem was driving a 15-ton roller along the edge of the shoulder at a 45° angle without tipping over in the steep SW Iowa ditch was scary as hell. Rick made his suggestion, "What I like to do is play Lynyrd Skynyrd's Greatest Hits at full blast and go like hell." I took Rick's advice. That experience changed my life. I was no longer afraid to fail – I had looked death in the face and rolled a 45° edge on it. My new willingness to try new things allowed me to become a utility guy on the crew that could operate all the equipment, set string, run

traffic control, etc. It prepared me for my job today. These stories are a good allegory for some of Iowa's engineering community and their relationship with asphalt.

One of the biggest challenges we have faced as an industry is a reluctance, or fear, by many of Iowa's engineers to utilize asphalt for their city streets and subdivisions. This fear needs to be overcome. The use of asphalt as a full-depth or even a Perpetual Pavement street makes all the sense in the world. I have heard the mantra that PCC lasts for 50 years. Well, according to Iowa DOT, PCC pavements last an average of 29 years before their first major rehabilitation and full-depth asphalt road lasts 26 years. A small difference, but the question then is what do you do to rehabilitate the street? The remedy is the same, both will require an HMA overlay, but therein lies the secret strength of full depth asphalt street, the top three inches can be milled and recycled into a brand-new wearing surface while the residents are at work. The PCC street will be overlaid as well, but three inches of curb line will be overlaid too. The overlay of the HMA street will last longer and perform better than the PCC overlay without the reflective cracking. The overlay of the PCC street impacts driveways, drainage and ADA ramps. The asphalt streets are less expensive both initially, and over time. In addition, the streets are immune to the effects of salt brine, the black asphalt helps melt snow faster, and the smooth roads plow easier in the winter time.

Many Iowa cities have recognized the intrinsic value of asphalt for years and some big names are joining the club. Last year, the City of Des Moines received \$3.5M in additional road use tax funds and spent \$3M on reconstructing streets with full depth asphalt. The City of Council Bluffs will be reconstructing 2000' of West Broadway, a major commercial center for the city, with ten inches of a Perpetual Asphalt design.

We need to break the grip of fear surrounding the use of asphalt on city streets. The truth is as simple as a ten year old boy walking out of the dugout to go catch a baseball game. If you believe, you can achieve.

Smoother is Better,



Bill Rosener



APAI Members Donate \$149,000 to University of Iowa College of Engineering

The Asphalt Paving Association of Iowa presented the University of Iowa College of Engineering with a check for \$149,000 yesterday with these funds to be matched by \$100,000 from the college. The funds are to go to renovating the existing lab, purchasing new equipment, and building out a teaching lab for asphalt pavement. Professor David Lee said, “I would like to thank all APAI members for the support for the asphalt education at the University of Iowa. I hope you all can visit new and improved asphalt teaching laboratory at UI this summer.” Bill Rosener, Executive Vice President of the APAI, said, “I am extremely proud and thankful to the members of the APAI for their generosity in not only meeting our goal of raising \$100,000 but exceeding it by another 50%. These monies were needed to maintain the



Michelle Scherer, Dept. Chair of Civil Engineering; David Lee, Professor; and Dean of Engineering Alec Scranton; receiving check from Bill Rosener, APAI; and Chuck Finnegan, L. L. Pelling Co.

high level of facilities and add additional students at the University of Iowa.”
teaching capabilities for the engineering For more, please click here.

APAI Awards Scholarships for 2017-2018

Scholarship recipients for the 2017-2018 Academic Year were selected by the APAI Scholarship selection team from qualified applicants at the three Iowa Regent. Scholarships totaling \$31,500 were given to twenty-one students. The awarded scholarship, the recipients, and their universities are shown below.

Iowa State University Scholarships & Recipients:

RONALD D. KENYON SCHOLARSHIP

Scholar in Civil & Construction Engineering
Dillon Hain, Paullina, IA
Bryce Hallmark, Ankeny, IA
Christian McKee, Robins, IA

FRED CARLSON COMPANY SCHOLARSHIP

Allison Slaughter, Cedar Rapids, IA
Samuel Waid, Ames, IA

ROBERT & SHERI HORNER SCHOLARSHIP

Kenneth Coblenz, Nevada, IA
Forrest Martinson, Marion, IA

TOM MANATT MEMORIAL SCHOLARSHIP

Kelsey leong, Grimes, IA

HAROLD & MERCEDES CESSFORD MEMORIAL SCHOLARSHIP

Leilah Armstrong, Ottumwa, IA

ASPALT PAVING ASSOCIATION OF IOWA SCHOLARSHIP

Kelley leong, Grimes, IA

University of Iowa Scholarships & Recipients:

ROBERT M. NADY SCHOLARSHIP

Anthony Hemann, Charles City, IA
Keegan Parizek, Walford, IA

ASPALT PAVING ASSOCIATION OF IOWA SCHOLARSHIP

John Hill, Naperville, IL
Chuanjing Hu, Iowa City
Mickey McLaughlin, Evanston, IL

University of Northern Iowa Scholarship Recipients:

ASPALT PAVING ASSOCIATION OF IOWA SCHOLARSHIP

Tate Illg, Dakota City, IA
Cole Kass, Peosta, IA
Andrew McCawley, Waterloo, IA
Will Poffenberger, Earlham, IA
Jacob Nash, Cedar Rapids, IA
Ethan Stilson, Eldridge, IA

Please join in congratulating and encouraging these young scholars in their academic endeavors.

Greater Iowa Asphalt Conference Sees Record Crowds and a “Black Gold” Rush

The 2017 Greater Iowa Asphalt conference saw record crowds again for the sixth straight year and an amazing agenda that left attendees with hard choices on which session to forgo. Discovery TV “Gold Rush” star, Dave Turin, gave an inspiring Keynote address on “Finding Tomorrow’s Workers Today” and spent his spare time talking to the men and women of Iowa’s Asphalt Industry. The GIAC Equipment Expo was another sell-out in 2017 with dealers from across the Midwest showing off the latest

innovations in equipment and technology. “I am amazed,” said Bill Rosener, Executive VP of APAI. “Every time I think we have hit our zenith with this event, it blows by what we did the previous year. This event is a success because of our partnerships with the Iowa DOT, Local Technical Assistance Program (LTAP), Iowa State University Institute of Transportation, and the University of Iowa College of Engineering, and because the use of asphalt continues to gain momentum and popularity across the state.”



APAI Roadshows Deliver the Goods

During the past month, the APAI staff joined forces with local Iowa DOT, City, County and Consulting engineers across the state of Iowa at six Asphalt Roadshows to learn, discuss, and evaluate the newest technologies and the state of the practice in Iowa's Asphalt Industry. Over 250 attendees in Council Bluffs, Sioux City, Davenport, Cedar Rapids, Mason City



and Des Moines, listened to their peers on the use of the Asphalt Interlayer, Hi-Performance Thin Overlays, pavement evaluation, life-cycle cost analysis, and a multitude of recent project performance reports. "These Roadshows allow an excellent free-flow of ideas and solutions between peers in a relaxed and informative environment." Said Bill Rosener, Executive Vice President of the APAI, "We received tremendous positive feedback from our attendees about the value they received in the one-day event."



REGISTER NOW!

**2017 EASTERN IOWA
APAI GOLF OUTING**

**2017 WESTERN IOWA
APAI GOLF OUTING**

**2017 EASTERN IOWA
APAI GOLF OUTING**

DATE: JUNE 28, 2017

LOCATION: AMANA COLONIES
GOLF COURSE, AMANA, IA

REGISTER NOW!

**2017 WESTERN IOWA
APAI GOLF OUTING**

DATE: AUGUST 29, 2017

LOCATION: MAJESTIC HILLS
GOLF COURSE, DENISON, IA

REGISTER NOW!

2016 APAI Quality Paving Awards

One of the inherent advantages of asphalt pavement is its smooth riding surface which has long been recognized as a major factor in evaluating quality construction. As a result, the Asphalt Paving Association of Iowa in conjunction with the Iowa Department of Transportation pay special tribute to those contractors who produce the smoothest, highest quality asphalt pavements. It is this partnering effort of industry and agency that assures the quality of Hot Mix Asphalt remains at its highest.

2016 APAI AWARD WINNERS QUALITY PAVING AWARDS

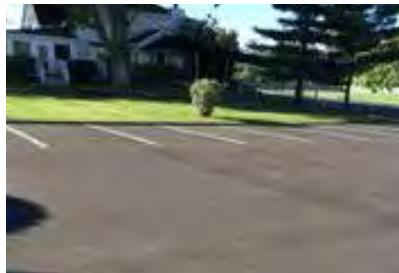
Commercial paving projects are an important part of an asphalt contractor's work. This award recognizes high quality projects as judged by a group of peers and a special traveling team. Rated on items such as surface appearance, joints, edges, degree of difficulty and texture, these award-winning projects represent the best commercial projects in the state.

Small Parking Lot (<500 Tons)

SKIP'S RESTAURANT,
DES MOINES, IA

Skip's Restaurant
Des Moines, IA

Des Moines Asphalt & Paving
*A division of Oldcastle Materials
Group/Midwest*
Ankeny, IA



61st Annual Convention



Brad Henningsen, APAI President; Jonathon Nalevanko, Des Moines Asphalt & Paving; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Kevin Kilmer, Des Moines Asphalt & Paving; Ruben Cedillo, Des Moines Asphalt & Paving; Scott Dockstader, District 1 Engineer, IDOT

Large Parking Lot (>500 Tons)

TARGET, WATERLOO, IA

Target Corporation
Waterloo, IA

Aspro, Inc.
Waterloo, IA



61st Annual Convention



Brad Henningsen, APAI President; Brad Blough, Aspro, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Jeff Strong, Aspro, Inc.; Matt Nash, Aspro, Inc.; Rick Duggen, Aspro, Inc.; Scott Dockstader, District 1 Engineer, IDOT

Parking Lot / Heavy Industrial

WATER POLLUTION CONTROL
FACILITY STREET REPAIRS,
AMES, IA

City of Ames
Manatts, Inc.
Ames, IA



61st Annual Convention



Brad Henningsen, APAI President; Neil Weiss, City of Ames; Brad Schwiebert, Manatts, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Tim Niedermann, Manatts, Inc.; Robert McCrady, Manatts, Inc.; Matt Skyberg, Manatts, Inc.; Scott Dockstader, District 1 Engineer, IDOT

Athletic Use: Recreational Trail Award

FLAP-1945(822)--7L-77, NEAL SMITH TRAIL, DES MOINES, IA

City of Des Moines

Des Moines Asphalt & Paving
A division of Oldcastle Materials Group/Midwest
Ankeny, IA



61st Annual Convention



Brad Henningsen, APAI President; Brandon Horbach, Des Moines Asphalt & Paving; Brett Lewis, City of Des Moines; Ryan Utter, City of Des Moines; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; David Kamp, City of Des Moines; Ryan Horn, Des Moines Asphalt & Paving; Ruben Cedillo, Des Moines Asphalt & Paving; Kevin Kilmer, Des Moines Asphalt & Paving; Scott Dockstader, District 1 Engineer, IDOT

Athletic Use: Tennis Courts or Running Track Award

CENTRAL DECATUR TRACK, LEON, IA

Central Decatur Community School District
Leon, IA

ORIS, PLC
Waukee, IA

Norris Asphalt Paving Co.
Ottumwa, IA



61st Annual Convention



Brad Henningsen, APAI President; Sandford Weaver, Norris Asphalt Paving Co.; Randy Garrett, Norris Asphalt Paving Co.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Joel Hinebaugh, Norris Asphalt Paving Co.; Sandford Weaver, Norris Asphalt Paving Co.; Randy Garrett, Norris Asphalt Paving Co.; Johnny Boyd, ORIS; Scott Dockstader, District 1 Engineer, IDOT

Athletic Use: Tennis Courts or Running Track Award

DENISON HIGH SCHOOL STADIUM IMPROVEMENTS, DENISON, IA

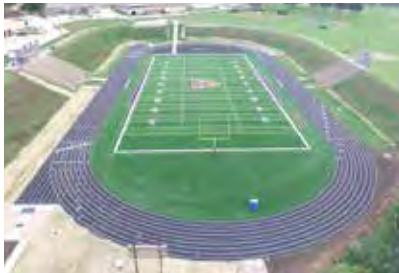
Denison Community School District
Denison, IA

Lamp Rynearson & Associates
Omaha, NE

Midwest Tennis & Track
Denison, IA

Tri-State Paving, Inc.

A division of Oldcastle Materials Group / Midwest
Estherville, IA



61st Annual Convention



Brad Henningsen, APAI President; Russ Schroeder, Tri-State Paving, Inc.; Matt Nelson, Lamp Rynearson & Associates; Keith Gibbie, Tri-State Paving, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Russ Schroeder, Tri-State Paving, Inc.; Jason Pergande, Tri-State Paving, Inc.; Dan Brotherson, Tri-State Paving, Inc.; Scott Dockstader, District 1 Engineer, IDOT

Special / Unique Paving Application

WEBSTER COUNTY CONSERVATION: KENNEDY PARK AND CAMPGROUND, FORT DODGE, IA

Webster County Conservation
Fort Dodge, IA

Fort Dodge Asphalt Company
Fort Dodge, IA



61st Annual Convention



Brad Henningsen, APAI President; Bruce Marsh, Fort Dodge Asphalt Co.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Johnny Pedersen, Fort Dodge Asphalt Co.; Jason Potts, Fort Dodge Asphalt Co.; Tommy Jondle, Fort Dodge Asphalt Co.; Scott Dockstader, District 1 Engineer, IDOT

IOWA ASPHALT REPORT

SMOOTHNESS AWARDS

Smooth riding surfaces are recognized by the traveling public as the most important aspect of a paved road. Smooth roads have been proven to last longer and provide better gas mileage to the traveling public. Each year the Asphalt Paving Association of Iowa in conjunction with the Iowa Department of Transportation pay special tribute to those involved in producing the smoothest, highest quality asphalt pavements.

Municipal Street Resurfacing

RS-000-3092, TECHNOLOGY PARKWAY, CEDAR FALLS, IA

City of Cedar Falls

Aspro, Inc.
Waterloo, IA



61st Annual Convention



Brad Henningsen, APAI President; Brad Blough, Aspro, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Curt Tallman, Aspro, Inc.; Jeff Strong, Aspro, Inc.; Ryan Hennings, Aspro, Inc.; Scott Dockstader, District 1 Engineer, IDOT

Municipal Street Rehabilitation

21ST STREET COLD IN PLACE RECYCLING -2016 CAMANCHE, IA

City of Camanche

Determann Asphalt Paving, L.L.C.
Camanche, IA



61st Annual Convention



Brad Henningsen, APAI President; Todd Powers, Determann Asphalt Paving; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Joe Price, Determann Asphalt Paving; Brian Hagerman, Determann Asphalt Paving; Brandon Anderson, Determann Asphalt Paving; Kevin Saiter, Determann Asphalt Paving; Scott Dockstader, District 1 Engineer, IDOT

Municipal Street New Construction

42ND ST. RECONSTRUCTION FROM UNIVERSITY TO FOREST, DES MOINES

City of Des Moines

Des Moines Asphalt & Paving
A division of Oldcastle Materials Group / Midwest
Ankeny, IA



61st Annual Convention



Brad Henningsen, APAI President; Brian Beard, Des Moines Asphalt & Paving; Brett Lewis, City of Des Moines; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; David Kamp, City of Des Moines; Kevin Kilmer, Des Moines Asphalt & Paving; Johnny Scovel, Des Moines Asphalt & Paving; Ruben Cedillo, Des Moines Asphalt & Paving; Scott Dockstader, District 1 Engineer, IDOT

Secondary Road Resurfacing

FM-C048(75)--55-48, V-38, IOWA COUNTY, IA

Iowa County Engineering Office
Marengo, IA

L.L. Pelling Company, Inc.
North Liberty, IA



61st Annual Convention



Brad Henningsen, APAI President; Brett Finnegan, L. L. Pelling Co., Inc.; Vince Kimm, Iowa County; Tyler Shephard, Iowa County; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Matt Amelon, Iowa County; Mark Harrison, L. L. Pelling Co., Inc.; Kelly White, L.L. Pelling Co., Inc.; Vince Kimm, Iowa County; Scott Dockstader, District 1 Engineer, IDOT

IOWA ASPHALT REPORT

Secondary Road Rehabilitation

FM-C094(107)--55-94, D-60,
WEBSTER COUNTY, IA

Webster County Engineering Office
Fort Dodge, IA

Fort Dodge Asphalt Co.
Fort Dodge, IA



61st Annual Convention



Brad Henningsen, APAI President; Randy Will, Webster County; Mike Moore, Fort Dodge Asphalt Co.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Dan Stanberg, Fort Dodge Asphalt Co.; Jamie Johll, Webster County; Ryan Weidemann, Webster County; Rick Aleksich, Fort Dodge Asphalt Co.; Joe Black, Fort Dodge Asphalt Co.; Scott Dockstader, District 1 Engineer, IDOT

Secondary Road New Construction

STP-S-C025(102)--5E-25, F-31,
DALLAS COUNTY, IA

Dallas County Engineering Office
Adel, IA

Manatt's, Inc.
Newton, IA



61st Annual Convention



Brad Henningsen, APAI President; Al Miller, Dallas County; Bryan De Jong, Dallas County; Rob Lehman, Dallas County; Jeff Kruse, Dallas County; Andy Case, Dallas County; Steve Armstrong, Manatt's, Inc.; Jeff Steinkamp, Manatt's, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Steve Armstrong, Manatt's, Inc.; Dennis Pfantz, Manatt's, Inc.; Curt Chambers, Manatt's, Inc.; Jamie Schirm, Dallas County; Bryan De Jong, Dallas County; Andy Case, Dallas County; Scott Dockstader, District 1 Engineer, IDOT

QUALITY MANAGEMENT ASPHALT (QMA) AWARDS

Building on the success of the Quality Management Asphalt Program, this award recognizes the great degree of work that goes into building a quality pavement on the primary and interstate system. Smoothness, quality control, density results, and physical appearance all go into the overall ratings for the projects submitted in these categories. The winning pavements are considered the best-of-the-best, indicating that they are not only smooth but exhibit characteristics that produce long-lasting hot mix asphalt pavements.

Primary Highway Resurfacing – 2-Lane

STPN-007-1(6)--2J-18, IA HWY 7,
CHEROKEE/BUENA VISTA
COUNTIES, IA

Iowa Department of Transportation
District 3 Office, Sioux City, IA
Resident Construction Engineering
Office, Sioux City, IA

Mathy Construction Co.
Onalaska, WI



61st Annual Convention



Brad Henningsen, APAI President; Gabe Ness, Mathy Construction Co.; Bill Dotzler, Iowa DOT District 3; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Steve McElmeel, District 3 RCE - Sioux City; Emily Neumann, Mathy Construction Co.; Scott Dockstader, District 1 Engineer, IDOT

Primary Highway Resurfacing – 4-Lane

STPN-013-1(52)--2J-57, IA HWY 13,
LINN COUNTY, IA

Iowa Department of Transportation
District 6 Office, Cedar Rapids, IA
Resident Construction Engineering
Office, Manchester, IA

L. L. Pelling Company, Inc.
North Liberty, IA



61st Annual Convention



Brad Henningsen, APAI President; Joel Gryp, L. L. Pelling Company, Inc.; Roger Boulet, Iowa DOT District 6; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Mark Dutra, Iowa DOT District 6; Kelly White, L.L. Pelling Co., Inc.; Steve Rauen, Iowa DOT District 6 - RCE - Manchester; Scott Dockstader, District 1 Engineer, IDOT

Primary Highway Rehabilitation – 2-Lane

STPN-218-9(118)--2J-66,
US HWY 218, MITCHELL COUNTY, IA

Iowa Department of Transportation
District 2 Office, Mason City, IA
Resident Construction Engineering
Office, Mason City, IA

Heartland Asphalt, Inc.
Mason City, IA



61st Annual Convention



Brad Henningsen, APAI President; Ed Simon, Heartland Asphalt, Inc.; Rich Millard, Heartland Asphalt, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Chris Simon, Heartland Asphalt, Inc.; Jim Rasing, Heartland Asphalt, Inc.; Scott Dockstader, District 1 Engineer, IDOT

Primary Highway New Construction – 4-Lane

NHSX-100-1(51)--3H-57, IA HWY 100,
LINN COUNTY, IA

Iowa Department of Transportation
District 6 Office, Cedar Rapids, IA
Resident Construction Engineering
Office, Cedar Rapids, IA

L. L. Pelling Company, Inc.
North Liberty, IA



61st Annual Convention



Brad Henningsen, APAI President; Joel Gryp, L.L. Pelling Co., Inc.; Roger Boulet, Iowa DOT District 6; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Christian Barko, Iowa DOT District 6; Bill Knapp, L.L. Pelling Co., Inc.; Kevin Sorenson, District 6 RCE - Cedar Rapids (seated); Kelly White, L.L. Pelling Co., Inc.; Bill Nielsen, Iowa DOT District 6 RCE - Cedar Rapids (seated); Mark Dutra, Iowa DOT District 6; Scott Dockstader, District 1 Engineer, IDOT

Interstate Resurfacing

IMN-080-4(66)121--0E-77, I-235,
POLK COUNTY, IA

Iowa Department of Transportation
District 1 Office, Ames, IA
Resident Construction Engineering
Office, Grimes, IA

Des Moines Asphalt & Paving Co.
*A Division of Oldcastle Materials
Group / Midwest*
Ankeny, IA



61st Annual Convention



Brad Henningsen, APAI President; Jeff Banes, Des Moines Asphalt & Paving; Danielle Mulholland, IDOT District 1 RCE-Grimes; Jeff DeVries, IDOT District 1; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Ryan Horn, Des Moines Asphalt & Paving; Johnny Scovel, Des Moines Asphalt & Paving; Steve Kennedy, Iowa DOT District 1-Materials; Santiago Rios, Des Moines Asphalt & Paving; Matt Miller, District 1 RCE-Grimes; Scott Dockstader, District 1 Engineer, IDOT

ENVIRONMENTAL AWARD

This award recognizes the efforts of a hot mix asphalt production facility that goes above and beyond environmental requirements. By demonstrating safe and responsible environmental practices, this producer is enhancing the positive image of a hot mix asphalt plant, while maintaining a safe, environmentally friendly, work place.

PORTABLE PLANT, PLANT 308, ALDEN, IA

Manatts, Inc.
Newton, IA



61st Annual Convention



Brad Henningsen, APAI President; Joe Manatt, Manatt's, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Steve Armstrong, Manatts, Inc.; Joel Snodgrass, Manatts, Inc.; Curt Chambers, Manatts, Inc.; Scott Dockstader, District 1 Engineer, IDOT

IOWA ASPHALT REPORT

SPECIAL AWARDS

METROPOLITAN PAVING PROGRAM (CITIES >10,000 POP.)

CITY OF BETTENDORF



61st Annual Convention



Bill Rosener, APAI Executive Vice President; Brad Henningsen, APAI Vice President; Brent Morlok, City of Bettendorf; Brian Schmidt, City of Bettendorf; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Brian Schmidt, City of Bettendorf; Brent Morlok, City of Bettendorf; Scott Dockstader, District 1 Engineer, IDOT

MUNICIPAL PAVING PROGRAM (CITIES <10,000 POP.)

CITY OF PERRY

Bolton & Menk, Inc.
Ames, IA

Manatts, Inc.
Newton, IA



61st Annual Convention



Brad Henningsen, APAI President; Jeff Steinkamp, Manatts, Inc.; Steve Armstrong, Manatts, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Matt Ferrier, Bolton & Menk; Steve Armstrong, Manatts, Inc. (seated); Josh Wuebker, City of Perry; Denny Pfantz, Manatts, Inc. (seated); Jack Butler, City of Perry; Scott Dockstader, District 1 Engineer, IDOT

IOWA COUNTY PAVING PROGRAM

AUDUBON COUNTY ENGINEERING
OFFICE, AUDUBON, IA



61st Annual Convention



Brad Henningsen, APAI President; Todd Nelsen, Audubon County; Mitchel Rydl, Audubon County; Charlie Purcell, Director - Project Delivery Bureau, IDOT

DUBUQUE COUNTY ENGINEERING
OFFICE, DUBUQUE, IA



61st Annual Convention



Brad Henningsen, APAI President; Wayne Demmer, Dubuque County; Wyatt Anderson, Dubuque County; Merle Ambrosy, Dubuque County; Anthony Bardgett, Dubuque County; Russ Weber, Dubuque County; Bob Sahn, Dubuque County; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Anthony Bardgett, Dubuque County; Scott Dockstader, District 1 Engineer, IDOT

IOWA ASPHALT REPORT

100,000 TON AWARD

DUBUQUE COUNTY ENGINEERING OFFICE, DUBUQUE, IA



61st Annual Convention



Brad Henningsen, APAI President; Wayne Demmer, Dubuque County; Wyatt Anderson, Dubuque County; Merle Ambrosy, Dubuque County; Anthony Bardgett, Dubuque County; Russ Weber, Dubuque County; Bob Sahm, Dubuque County; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Anthony Bardgett, Dubuque County; Scott Dockstader, District 1 Engineer, IDOT

PERPETUAL DESIGN AWARDS

DALLAS COUNTY F-31

Dallas County Engineering Office
Adel, IA



61st Annual Convention



Brad Henningsen, APAI President; Al Miller, Dallas County; Bryan DeJong, Dallas County; Rob Lehman, Dallas County; Jeff Kruse, Dallas County; Andy Case, Dallas County; Mark Hanson, Dallas County Supervisor; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Jamie Schirm, Dallas County; Bryan De Jong, Dallas County; Andy Case, Dallas County; Scott Dockstader, District 1 Engineer, IDOT

IOWA HWY 100

Iowa Department of Transportation
District 6
Cedar Rapids, IA



61st Annual Convention



Brad Henningsen, APAI President; Mitchell Dillavou, Director, Highway Division, IDOT; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Charlie Purcell, Director - Project Delivery Bureau, IDOT; Scott Dockstader, District 1 Engineer, IDOT

INNOVATION IN CONSTRUCTION AWARD: PAVEMENT PRESERVATION

The Innovation in Construction Award recognizes agencies and contractors for utilizing cutting edge technologies to build exemplary HMA pavements.

NHSX-020-3(162)--3H-94, US HWY 20, WEBSTER COUNTY, IA

Iowa Department of Transportation
District 1 Office, Ames, IA
Resident Construction Engineering
Office, Jefferson, IA

Heartland Asphalt, Inc.
Mason City, IA



61st Annual Convention



Brad Henningsen, APAI President; Dave Ricken, Heartland Asphalt, Inc.; Jeff DeVries, Iowa DOT - District 1; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Tom Heimbach, Heartland Asphalt, Inc.; Adam Trappe, Heartland Asphalt, Inc. (seated); Scott Staudt, Heartland Asphalt, Inc.; Shane Fetters, Iowa DOT District 1 (seated); Jenny Hoskins, Iowa DOT District 1 RCE - Jefferson; Scott Dockstader, District 1 Engineer, IDOT

IOWA ASPHALT REPORT

INNOVATION IN CONSTRUCTION AWARD: CRACK AND SEAT AND ASPHALT INTERLAYER

STP-S-C023(102)--5E-23, Y-34 & E63, CLINTON COUNTY, IA

Clinton County Engineering Office
Clinton, IA

River City Paving
A division of Mathy Construction Co.
Dubuque, IA



61st Annual Convention



Brad Henningsen, APAI President; Scott Kueter, River City Paving; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Bill Geltz, Clinton County; Scott Kueter, River City Paving; Scott Dockstader, District 1 Engineer, IDOT

INNOVATION IN CONSTRUCTION AWARD: ALTERNATE BID DESIGN

STP-S-C017(71)--5E-17, B-35, CERRO GORDO COUNTY, IA

Cerro Gordo Engineering Office
Mason City, IA

Short Elliott Hendrickson, Inc.
Mason City, IA



61st Annual Convention



Brad Henningsen, APAI President; Steve Gooder, Cerro Gordo County; Mike Danburg, SEH, Inc.; Charlie Purcell, Director - Project Delivery Bureau, IDOT

ROBERT M. NADY AWARD OF EXCELLENCE

NHSN-052-4(6)--2R-03 & NHSN-052-5(32)--2R-96, US HWY 52, WINNESHIEK

Iowa Department of Transportation
District 2 Office, Mason City, IA
Resident Construction Engineering
Office, New Hampton

Mathy Construction Co.
Onalaska, WI



61st Annual Convention



Brad Henningsen, APAI President; Joel Gryp, L.L. Pelling Company, Inc.; Roger Boulet, Iowa DOT District 6; Charlie Purcell, Director - Project Delivery Bureau, IDOT

Greater Iowa Asphalt Conference



Brad Henningsen, APAI President; Christian Barko, Iowa DOT District 6; Kevin Sorenson, District 6 RCE-Cedar Rapids (seated); Kelly White, L. L. Pelling Co., Inc.; Bill Nielsen, Iowa DOT District 6 RCE - Cedar Rapids (seated); Bill Knapp, L. L. Pelling Co., Inc.; Mark Dutra, Iowa DOT District 6; Scott Dockstader, District 1 Engineer, IDOT

APAI CONSULTING ENGINEER OF THE YEAR AWARD

George Parris
JEO Consulting Engineering Co.
Carroll, IA



2016 HALL OF FAME INDUCTEE

Dr. Joe McGuire



(Sustainability and Pavements Continued from Page 1)

mineral elements to approximately 1500°C (2732°F) to produce “clinker”. These kilns are fueled by a variety of fossil fuels and alternative fuels such as waste tires and waste motor oil. Coal has been the primary source since the 1970s.² Globally, cement production accounts for nearly 5% of all CO₂ emissions.² The industry emits nearly 900 Kg of CO₂ for every 1000 Kg of cement produced.³

A study comparing the initial production and placement of HMA and PCC found that the greenhouse gases emitted for an asphalt pavement was only 22%-25% of the greenhouse gases of a typical concrete pavement.⁴ The environmental sustainability through the first phase of a pavement’s life strongly indicates the benefits of asphalt, but economic sustainability must also be considered in the equation.

Life-Cycle Cost Analysis (LCCA)

PCC pavements have traditionally been credited with a longer initial life before the first pavement rehabilitation. Recent pavement performance data released by the Iowa Department of Transportation (IDOT) shows this to be true, but with only three years separating the PCC and full-depth HMA pavements at 29 and 26 years respectively.⁵ According to the Federal Highway Administration (FHWA) Technical Advisory 5040.39 the use of a life-cycle cost analysis must include at least one major rehabilitation, the respective maintenance costs for each pavement type, and the salvage value for the pavement at the end of life.⁶ This methodology also includes giving value to the materials recycled during the pavement’s life (i.e., Mill and Fill). The initial value of the additional three years of PCC performance are quickly overtaken when including the value of the recycled asphalt pavement during rehabilitation and end of life value. If the asphalt pavement is built as a Perpetual Pavement, the end of the pavement life may never come.

In addition, the FHWA Technical Advisory 5040.39 also suggest that work zone user delay could be a defining characteristic of whether to do an alternate bid. Projects with greater than 20% more user delay during initial construction and



Photo courtesy of Nick Radloff, Mathy Construction

subsequent maintenance and repairs should not be evaluated as alternate pavement choices.⁷ The ability to quickly construct and rehabilitate HMA pavements versus PCC pavements should be recognized as both an economic (time = money) and social (safety and smoothness) benefit to the traveling public.

Economic, Environmental and Social sustainability begin to merge when evaluating the asphalt advantages inherent in the LCCA process:

1. Asphalt can be built as a Perpetual Pavement
2. Asphalt is 100% recyclable.
3. Asphalt is faster to construct.
4. Asphalt is smoother than concrete.
5. Asphalt is easily maintained and rehabilitated.

Perpetual Pavements

The term Perpetual Pavement was adopted by the national asphalt industry in 2006 based on research conducted by Dr. David Timm of Auburn University. In this research, Dr. Timm found that if asphalt pavements were built thick enough to limit the vertical sheer force of traffic loading to below 70 microstrains, the pavement section would enjoy indefinite life, thus creating a “Perpetual Pavement”. This construction design method limits the strain to the surface wearing course that can be milled and resurfaced periodically

to maintain quality of ride.

When building a sustainable pavement, the values of quality, durability and performance life of the pavements must be evaluated as a combined relationship. Iowa is blessed with excellent quality contractors in both the PCC and HMA industries. In fact, Iowa’s asphalt contractors have been recognized by the National Asphalt Pavement Association (NAPA) as winners of the Sheldon G. Hayes Award for the best asphalt paving project in the nation four times in the past fifteen years and thirteen times as Finalists. This is a remarkable feat and speaks to the quality of the work being done by Iowa’s asphalt industry. The question of durability and performance have been shown through the recognition of three sections of I-80 in Jasper, Johnson and Cedar Counties as Perpetual Asphalt Pavements by NAPA. These full-depth asphalt sections were originally constructed in 1962-64 and are the only remaining sections of the original construction of I-80. At 52-54 years old, there are no plans to reconstruct these sections by the Iowa DOT. As with most of Iowa’s asphalt pavements, these pavements were not built as Perpetual design. The original design has had structural strength added with additional HMA overlays, thus creating a pavement with perpetual life. In recent years, the use

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of the Perpetual Pavement design has been proliferating exponentially in Iowa with new pavements being built at the state, city and county levels.⁸

A study by Dr. Stephen Muench, an Associate Professor in the University of Washington's Department of Civil and Environmental Engineering, found "that a majority of waste comes from disposing of a pavement at the end of life."⁹ With over 50% of environmental waste coming from end of the life-cycle of the pavement, all efforts must be made to produce quality, long-lasting roads. If the pavement enjoys unlimited life, the savings both economically, environmentally and socially, is tremendous. The renewability, and recyclability, of the HMA surface, the ability to add structural strength through periodic overlays, and a perpetual design-life, gives asphalt a unique and distinct advantage over its competition in both durability and performance.

Asphalt is 100% Recyclable

The heart of the sustainability discussion between the two pavement options lies in the statement, "Asphalt is 100% recyclable." The PCC industry makes the same claim; however, the difference is dramatically different both environmentally and economically. The difference lies in the ability of the asphalt cement in the Recycled Asphalt Pavement

Value of RAP	
Recycled Asphalt Pavement	Recycled Concrete
95% x \$15.00 = \$14.25	100% x \$15.00 = \$15.00
5% x \$350.00 = \$17.50	
Value of RAP = \$31.75 / Ton*	Value of Recycled PCC = \$15.00 / Ton*

**This is the value of the pavement in situ and does not account for the cost to remove, mill, haul, crush and/or process.*

(RAP) to be reactivated when blended with 70%-80% (and sometimes more) virgin material and put through a hot-mix asphalt plant. The Portland Cement in crushed concrete does not reactivate, thereby limiting the recycled concrete to be used as aggregate base. This difference can be seen environmentally, where recycled asphalt pavement (RAP) is America's number one recycled product with over 74.2 M tons recycled in 2015 nationally and 99% of the RAP was reclaimed for use in new pavements rather than going to the landfill.¹⁰ When calculating the value of RAP versus crushed concrete, the economic difference can be shown in a simple mathematical equation:

Assuming the value of one ton of aggregate at \$15/ton and the current price of asphalt cement (AC) at \$350/liquid ton.

Due to the reactivation of the asphalt cement, the value of RAP is more than two times the value of recycled concrete \$31.75/ton versus \$15.00/ton. In 2015, Iowa contractors used over 620,000 tons of

RAP representing 590,000 tons of virgin aggregate that will not be quarried and 30,000 tons of virgin asphalt cement that will not be refined. This is a savings of over \$22,000,000 to the taxpayers of Iowa and a tremendous reduction in the mining of Iowa's natural resources.

Recycled Asphalt Shingles

The use of recycled asphalt shingles (RAS) is another Iowa Asphalt Paving Industry success story. RAS are tear-off asphalt roofing shingles that are processed and ground to a coarse sand consistency and added during the production of the HMA. RAS contains upwards of 25% asphalt cement, high friction aggregates, fiberglass fibers and lime dust; all of which are beneficial to asphalt mixtures. The real winner in the RAS equation is the removal of the tear-off shingles from Iowa landfills. A report by the Iowa DOT in 2013 found that over 38% of all tear-off shingles in Iowa were recycled into new asphalt pavements.¹¹ The tonnage of RAS used by Iowa contractors in 2013 would have saved approximately 15,250 cubic yards of landfill space valued at over \$350,000. The Waste Commission of Scott Co. in Davenport, Iowa has diverted over 49,000 tons of waste shingles since beginning their operations in 2004. Kathy Morris, Director of the Waste Commission of Scott County, said, "The removal of shingle waste from Iowa's landfills for reuse in Iowa's roadways is a win-win for the environment and Iowans. Landfill space is saved and these materials provide a new source of revenue for the waste facilities." The L.L. Pelling Co., Inc., a contractor in the Iowa City / Cedar Rapids corridor, began partnering with the local landfills in Iowa City, Cedar Rapids and Dubuque beginning in 2013 and have recycled over 20,000 tons of RAS since inception. "We got into the shingle



Photo courtesy of Jennifer Coleman, Manatts

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recycling business as a way to reduce our costs and our need for virgin petroleum, but diverting the shingles from being landfilled has a tremendous benefit to our company and industry’s sustainability,” said Chuck Finnegan, President of the L.L. Pelling Company. Nationally, over 1.9 M tons of RAS was recycled last year, a 175% increase since 2009.

Warm-Mix Asphalt

The use of warm-mix asphalt (WMA) was introduced from Europe in 2005 and allows the production of asphalt at temperatures of 50°-100°F lower than traditional hot-mix asphalt. The resulting environmental savings can be found in a decrease in the production of CO₂ and SO₂ by as much as 45% and the economic savings can be found in a decrease in fuel consumption to produce the WMA by 15%-55%.¹² In addition, the use of WMA allows for easier compaction in the field, reducing compactive effort and costs, as well as reducing the “aging” of the asphalt cement in the production process of the higher temperatures. This may lead to longer-lasting pavements. Iowa follows the national trend with nearly 1/3 of all mix being produced utilizing WMA technologies. On the social sustainability note, the use of lower temperature asphalts provides a better and safer work environment for asphalt workers. Longer pavement life with equivalent pavement quality, decreased fuel consumption, lower emissions and improved working conditions will drive this initiative even farther.

Fast Construction

Asphalt is the fastest pavement to construct and provides the traveling public with the safest option when rehabilitating a roadway. Once compacted, asphalt pavements can be driven upon immediately. This unique ability allows work to be completed at night, or during off-peak traffic volumes, to reduce congestion and improve safety for both the traveling public and the highway industry workers. When working in local environs, the use of asphalt provides quicker access for local residents to their homes, as opposed to waiting for concrete to cure for seven days. Resurfacing

can be completed while residents are at work during the day. The opportunity that asphalt provides to complete projects quickly and to “get in, get it done, and get out,” improves the quality of life of the public and industry thus increasing the asphalt industry’s social sustainability.

Smoothness and Quietness Matters

Another component of social sustainability is delivering a smooth and quiet ride for the traveling public. Asphalt delivers both attributes in spades. Under the new Iowa Smoothness Specification, DS-15049, that will take effect in October 2017, HMA pavements will be required to be at <30 inches per mile on the Mean International Roughness Index (MRI) versus <55 inches per mile for PCC pavements to achieve maximum incentives. On a social scale, two studies conducted by NWI and FHWA in 1995 and 2001 respectively, found that pavement condition and smoothness to be the third most important factor to the traveling public, behind traffic congestion and safety.

pavements. Studies have determined that certain types of HMA pavements, open graded and stone-matrix asphalt pavements can help reduce road noise by seven decibels.¹⁷ Reducing noise by just 3 decibels is equivalent to doubling the distance from the source of noise to the listener. Smooth, quiet roads produce increased quality of life for those people who drive them and those people who live nearby. When selecting the pavement type for the recently completed section of Highway 100 in Cedar Rapids, IA, the Iowa DOT chose asphalt, in part, because of the environmentally sensitive nature of the project being constructed through an established neighborhood. Asphalt was deemed to be the quieter pavement choice.

Sustainable Quality

The strongest case for asphalt pavement’s sustainability advantage is the ease in which they can be maintained and rehabilitated. Asphalt pavements are known to keep a higher level of pavement condition index (PCI) because when

Ride Quality (IRI) Prior to Rehabilitation					
	Percent of Total Pavement Sections				
Pavement Type	Very Good** < 60	Good 61 – 95	Fair 96 – 120	Poor 121 – 170	Very Poor > 170
AC Pavements	9.6%	34.3%	24.1%	17.5%	14.5%
PCC Pavements*	1.1%	23.3%	26.7%	34.4%	14.4%

Asphalt is placed as one long, uninterrupted ribbon of pavement, with no sawcuts or joints to detract from the smoothest ride. Smoothness matters environmentally with fuel consumption. A study at WesTrack in Arizona found that smooth pavements can increase fuel efficiency by 4.5%.¹⁴ Smoothness is an indicator of quality construction and a road that is built smooth is more likely to remain smoother longer.¹⁵ Other reports show that rough roads can cost drivers \$377 every year in additional vehicle operating costs due to poor road conditions.¹⁶

Reduced road noise is another benefit of asphalt. Because asphalt is paved with continuous construction, there are no sawcuts to create the “thump, thump, thump” found with jointed PCC

they are in need of repair, the cost and impact to the traveling public is minimal compared to the cost of rehabilitating PCC pavements. In fact, a study by the National Center for Asphalt Technology has determined that the ride quality of HMA roads at the time of their rehabilitation is significantly higher by percentage than PCC pavements.¹⁸

According to the study, HMA pavements have a 44% chance to be rehabilitated while in very good – good (IRI of < 95 inches/mile) ride condition, while PCC pavements have only a 24% chance of being rehabbed during the same time. This phenomenon may lead to longer life to the initial rehabilitation but with poorer quality roadways for the traveling public.

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In addition to the traditional mill and fill rehabilitation technique, asphalt pavements are able to utilize a process called cold-in-place recycling (CIPR). The CIPR process utilizes a milling machine to remove 3-4 inches of the asphalt surface. The RAP material is then sized prior to being “foamed” with a very soft asphalt cement (PG 52-34S) and being placed through an asphalt paver and rolled in place. The CIP layer is then allowed to cure to an optimum moisture content and then overlaid with 3-4 inches of traditional HMA. The cold-in-place recycling process is extremely popular due to its success in Iowa. The Iowa DOT has determined that overlays utilizing this process will average five years of additional life compared to a traditional HMA overlay alone.¹⁹

The use of asphalt interlayers, high-performance thin overlays, slurry seals, microsurfacing and a myriad of sealers and rejuvenators fill out the “toolbox” of possible HMA rehabilitations and maintenance techniques. PCC pavements have a limited list to choose from: PCC patching, diamond grinding and asphalt overlays. The greater opportunities for less expensive, and farther-reaching, rehab techniques provides more environmentally-sound, cost-effective options for engineers, and better quality roads for the driving public.

Future of Sustainable Asphalt Pavements

The future of sustainability in the asphalt industry is particularly bright. The production and use of Bioasphalt™ was accomplished in the spring of 2009 at a demonstration project in Des Moines, IA and introduction of Bio-based Polymers to traditional HMA, led by Dr. Chris Williams of Iowa State University, will be demonstrated in the summer of 2017. These products are derived from renewable energy sources derived from Iowa-grown feedstock.

The process of creating a general Environmental Product Declaration (EPD) for asphalt was undertaken by the National Asphalt Paving Association two years ago and was rolled out to NAPA members at the Annual Convention in January, 2017. The EPD serves as an environmental “nutrition label” for the

production of hot-mix asphalt mix. This generic EPD will allow contractors to create specific EPDs for each asphalt mixture produced at a plant; detailing materials, trucking, fuel energy, CO₂ production, etc. The specificity of the EPD allows state and local agencies to make engineering decisions on more than just price – the environmental impacts between pavement types can be evaluated.

New “Green Rating” systems (i.e., Greenroads, LEED, Envision) have been developed to move the discussion away from what’s “cheapest” to what option is the most environmentally, economically and socially sustainable option when doing project design and pavement determinations.

Asphalt: The Sustainable Choice

The beginning of this article defined sustainability as leaving the world as good, or better, than we found it, for our future generations. To accomplish the three pillars of sustainability: environmental, economic and social, we have to make educated, responsible decisions on how to expend natural resources, preserve water and air

quality, spend taxpayers’ dollars wisely and provide the citizens of our state and nation with a strong quality of life. Asphalt has proven to be the most environmentally sustainable pavement with less impact on natural resources during production, the demonstrated ability to recycle 100% of the material and the capability to build perpetual asphalt pavements that can last indefinitely. Asphalt has proven to be the most economically sustainable pavement by recycling materials into new asphalt pavements and saving taxpayers billions of dollars; constructing and rehabilitating roadways in a timely and efficient manner to minimize driver delays; and by building smooth, perpetual roads, that last longer, save fuel and lessen costly vehicle repairs. Asphalt has proven to be the most socially sustainable pavement by limiting driver delay through faster construction, recycling precious natural resources, building smooth, quiet pavements and looking to the future for the replacement of petroleum as the feedstock for asphalt pavements. Asphalt is the junction of all three pillars of sustainability. Asphalt is the sustainable pavement choice.

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APAI Welcomes New Members

APAI continues to add new members. At their last Board Meeting, the Board of Directors elected four Associate Members and one Consulting Engineering Member to the Association. Thank you to those who have helped recruit these new members.

CONSTELLATION ENERGY



Constellation's companies (www.constellation.com), subsidiaries of Exelon Corporation (NYSE:EXC), are leading competitive retail suppliers of power, natural gas, renewables and energy management products for businesses and homeowners across the continental United States. Constellation serves approximately 100,000 business and public sector customers, including more than two-thirds of the Fortune 100, and approximately 1 million residential customers.

HEARTLAND OUTDOOR SERVICES



Heartland Outdoor Services has been serving greater Des Moines and central Iowa since 1993. Their company has been active in commercial landscape and lawn care services throughout the Midwest. They are committed to providing each customer with exceptional, quality services at affordable pricing.

Heartland Outdoor Services offers a wide range of services including Landscape/Hardscape Design and Installation, Landscape/Turf Maintenance, Mowing, and Fertilization, Sprinkler System Management, Seeding, and Erosion Control. For their commercial customers, they also provide Snow and Ice Management, Infrared Asphalt Repair, and Parking Lot Maintenance Services.

The goal of Heartland Outdoor Services is to be the go to contractor for Des Moines and central Iowa parking lot maintenance for years to come. Heartland Outdoor Services is very aggressive with their pricing and will work with your company to ensure they meet your facility's needs. Their parking lot maintenance services include but are not limited to parking lot sweeping, parking lot striping, asphalt repair, concrete repair, and snow and ice management. Their services are not limited to the Des Moines/Metro area. They will also service other central Iowa cities such as Ankeny, Altoona, Ames, Marshalltown, Knoxville, Indianola, and many more.

Please welcome these new members and show your support for them, by contacting them and utilizing their services. To find contact information for these members, go to <http://www.apai.net/associate-members.aspx>.

HENRIKSEN CONTRACTING, INC.



HENRIKSEN Concrete Cutting & Sealing
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From saw cutting to joint sealing to core drilling

Henriksen Contracting has a proven reputation for excellent work and responsive service. With more than 35 years of experience, they're your go-to-guys with the right equipment, people and commitment to being there when you need them.

Since January 2006, Henriksen Contracting, LLC has taken great pride in their workmanship and is dedicated to meeting and exceeding their customer's needs. Henriksen Contracting takes pride in the work they perform. They have the tools and knowledge to satisfy their customer's needs with the following services: Joint Sealing, Flat-Slab Sawing, Wall Sawing, Core Drilling, Curb Grinding / Sawing, and Pavement Tear-out.

PINE TESTING EQUIPMENT, INC.



Established in 1962, Pine has been manufacturing and servicing asphalt testing equipment for over 50 years. Their first products were Marshall Testing Products and

Pine developed gyratory compactors when the Superpave Test Method was developed. Their products have a reputation of being "Built to Last".

Pine's gyratory compactors are the recognized leaders in the field. The AFG2A model is a state of the art instrument that incorporates the latest technology available into a proven design. The G2 features optional shear measurement capabilities, a USB data port, the ability to adjust design parameters through software adjustments as well as the flexibility to use 150mm molds, 100 mm molds or 4 inch molds. Their AFGB1 portable gyratory compactor is the lightest gyratory compactor available weighing less than 320 pounds.

Their aggregate imaging system is part of the FHWA Highways for Life Program and their RAM is the standard for measuring internal angle on gyratory compactors.

BECK ENGINEERING



Founded in 2001, Beck Engineering, Inc. provides civil engineering and land surveying services to cities, counties and schools. BEI specializes in street

reconstructions, roadway design, water main and sanitary sewer improvements, wastewater treatment, drainage, Low Impact Development, athletic facilities, recreational trails, sidewalks, parking lots and site development.

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Central Service & Supply, Inc., Ankeny
Clarence Richard Company, Minnetonka, MN
Coleman-Moore Company, Des Moines
Constellation Energy, Dubuque
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
Donovan Enterprises, Inc., Rockville, MN
J.D. Donovan, Inc., Rockville, MN
Earthwave Technologies, Indianapolis, IN
Elite Flagging, Inc., Cedar Rapids
Fahrner Asphalt Sealers, Plover, WI
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
Hawkeye Truck Equipment, Des Moines
Heartland Outdoor Services, Grimes
Henriksen Contracting, L.L.C., Grimes
Heuss Printing, Inc., Ames
Holmes Murphy & Associates, West Des Moines
Housby / VOCON, Des Moines
Humboldt Manufacturing Company, Elgin, IL
Ingevity, North Charleston, SC
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
Lube-Tech & Partners, Des Moines
Manhole Adjustable Riser Company, Oskaloosa
Merchants Bonding Company, Des Moines
Mid Country Equipment, Inc., Fort Dodge
Mid-Iowa Enterprises, Inc., Ames
Midwest Tennis & Track, Denison

Missouri Petroleum Products Co., L.L.C., St. Louis, MO
Ron Monson and Sons, Britt
Murphy Tractor & Equipment Company, Inc., Wichita, KS
National Minerals Company, Hastings, MN
Pine Test Equipment, Grove City, PA
Quality Striping, Inc., Des Moines
Quality Traffic Control, Inc., Des Moines
Quick Supply Company, 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 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., Lee's Summit, 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
Waste Commission of Scott County, Buffalo
Weiler, Knoxville
Wells Fargo Bank, Des Moines
Whitfield & Eddy Law, Des Moines
Wirtgen America, Inc., Antioch, TN
Ziegler, Inc., Des Moines
Zydex, Inc., Morrisville, NC

CONSULTING ENGINEERS

Anderson-Bogert, Cedar Rapids
Beck Engineering, Inc., Spirit Lake
Bolton & Menk, Inc., Ames
Calhoun-Burns Associates, West Des Moines
Clapsaddle-Garber Associates, Marshalltown
DGR, Rock Rapids
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
Snyder & Associates, Inc., Ankeny
Terracon, Cedar Rapids
Thiele Geotech, Inc., Omaha, NE
Veenstra & Kimm, West Des Moines

AFFILIATE MEMBERS

Scott County Engineering