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Maybe you’ve heard it said from pavement-preservation advocates that delaying maintenance results in greater cost over the life of a road than if it’s maintained with less costly but more frequent treatments. If routinely changing the oil in our automobiles demonstrates what pavement preservation is all about, then it’s hard to argue against that wisdom; I believe most would agree. It’s an odd thing, however, that when it comes to keeping roads in good shape we have difficulty practicing this discipline, though we understand the implications on a personal level. Not helping matters has been the “Great Recession” resulting in less money to fix roads. However, reading of and seeing with our own eyes the re-emergence of residential and commercial construction brings hope that cash for roads is on the way.

To the joy of all transportation advocates was news that the ODOT Transportation Budget Bill made passage with a provison for bonding against future Ohio Turnpike toll revenues. The provision makes possible $1.5 billion in additional dollars for transportation improvements, and up to as much as $3 billion when matching funds are tacked on. Strings are attached. Dollars from the sale of these bonds must be invested in the northern part of the state and projects must have a nexus to the Turnpike. Also, ODOT will not have autonomy in deciding what projects will be funded using these monies.

The funding increase is great news for maintaining pavements under the jurisdiction of ODOT and the Ohio Turnpike Commission. Local governments, however, remain tightly squeezed (redundancy intended). When we consider the size of the local system in relation to the state system, there is reason to be concerned about the funding situation (Figure 1). Indeed, cities and other local governments are in a precarious situation that could have severe financial implications. There is indeed a wave of cost expenditures out there somewhere in the future that may grow to tsunami proportions if funding is not found soon for repairing local roads.

There is an age-old graphic that explains the situation (Figure 2). It shows the relationship between the cost to repair a pavement and deterioration of pavement condition over time. Roads deteriorate as they are subjected to the pounding of traffic and the strain that comes from nature. The rate of deterioration is not constant; rather, as a pavement ages...
the rate of deterioration accelerates. As the figure indicates, the deterioration of a road from “VERY GOOD” to a “FAIR” condition rating, in general, consumes 75 percent of a pavement’s life. During that period of time, approximately 40 percent of the pavement’s usefulness has been expended (i.e. quality drop). If the owner of a pavement in “FAIR” condition takes action to restore the pavement to “VERY GOOD” condition, the cost associated with such will be one-fifth the cost of repairing the pavement had it fallen into “VERY POOR” condition.

More frequently these days we get inquiries at the FPO office requesting critique of a strategy or recommendation for fixing some very sorry-looking pavements; pavements that have fallen into “VERY POOR” condition. The caller’s hope is that a minimal treatment will be all that is needed. Unfortunately, after further examination the prescription is a very bitter pill. A bandage repair simply will not provide long-term service. Those who attempt to repair a pavement late in the deterioration cycle using a $1 treatment (relatively speaking) for a pavement needing a $5 fix, only find themselves disappointed by the half-life they receive and the need to repair the same pavement more frequently.

To the readership of Ohio Asphalt this message is akin to “preaching to the choir.” You get it. It seems unimaginable, but perhaps those in a position to do something about increasing road construction funding don’t yet perceive the urgency. Perhaps hope of a growing economy gives reason to do nothing, yet; however, the economy is on a slow grow and the rate of pavement deterioration keeps marching on. Thing is, if the “do-nothing” alternative is chosen, the likelihood is high that when the cash finally begins to arrive, five times the amount will be needed. Which will we choose: $1 for 75 percent or $5 for 92 percent?

To allow a pavement to fall below the “FAIR” condition is to “defer” maintenance. Deferring maintenance has huge cost implications. From the look of pavements around the state it seems many local governments in Ohio find themselves in this situation.

Deferring maintenance not only increases by five times a road’s restoration cost, little time is bought; only 17 percent. So, the choices are … do timely maintenance at lesser cost, or defer maintenance at five times the cost and get a modest time extension with the deal. If we were to put this in the vernacular used in Figure 2, it would look something like this, $1 for 75 percent or $5 for 92 percent (75 percent + 17 percent). I don’t know if you’re like me when doing grocery shopping, but I will look at both the asking price for an item and the cost per unit. It seems to me that $1 for 75 percent is a much-more-favorable cost per unit than $5 for 92 percent.

More frequently these days we get inquiries at the FPO office requesting critique of a strategy or recommendation for fixing some very sorry-looking pavements; pavements that have fallen into “VERY POOR” condition. The caller’s hope is that a minimal treatment will be all that is needed. Unfortunately, after further examination the prescription is a very bitter pill. A bandage repair simply will not provide long-term service. Those who attempt to repair a pavement late in the deterioration cycle using a $1 treatment (relatively speaking) for a pavement needing a $5 fix, only find themselves disappointed by the half-life they receive and the need to repair the same pavement more frequently.

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Ohio Asphalt Expo: More, More, More
More Attendees, More Exhibitors, More Sessions Mark 2013 Event

The Flexible Pavements of Ohio’s (FPO) 2013 Ohio Asphalt Expo featured more, more, more, as this year’s event was bigger — with more attendees, more exhibitors and more education sessions, including a whole new track of seminars called Roadway Safety Plus.

Held March 5 & 6, the 2013 Ohio Asphalt Expo returned to the Hilton Columbus, Polaris, as more than 400 people attended the two-day event. And perhaps seeing the light at the end of the proverbial dark economic tunnel, more than 30 exhibitors were on hand to feature their wares and services.

The more than 40 hours of scheduled activities at the 2013 event began with Tuesday’s concurrently held Public Agency Forum, moderated by Hamilton County Engineer Ted Hubbard, and FPO Member Breakfast. The FPO Member Breakfast provided information on association events, legislative proclamations, the 2012 Annual Report, announcement of recent FPO officer elections, recognition of retiring board members and more.
2013 FPO Officers
Chairman: Rodney Russell, Barrett Paving Materials Inc.
Co-chair: Ty Nofziger, The Shelly Co.
Treasurer: Frank T. Bell, M&B Asphalt Co. Inc.

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The FPO Board of Directors honored retiring member Jim Jurgensen for his years of service on the board and outgoing Chairman Bob Bailey.

Jurgensen, president of Valley Asphalt Corporation in Cincinnati, has served a total of 21 years — including the past 15 consecutive — on the FPO Board of Directors. Noted for his service on the association’s Legislative Committee, Jurgensen participated in several trips to Washington, D.C. to encourage support for transportation funding. FPO President/Executive Director Cliff Ursich called Jurgensen an effective industry advocate, saying, “Jim has found himself discussing transportation issues before governors, legislators and transportation directors.” (For more information on Jurgensen, see page 27.)

Bailey, president of Kokosing Materials Inc. in Fredericktown, served as the 2012 FPO chairman. Ursich remarked of Bailey’s tireless effort in leading the association and advancing the quality asphalt pavement construction mission during his leadership term. “He has worked to bring about cooperation and mutual confidence among members to continually elevate the status of the hot mix asphalt industry. And he has selflessly represented the interests of the entire FPO membership as he has served as our chairman.”

The conclusions of the morning forum and breakfast coincided with the opening of the Ohio Asphalt Expo Exhibits and Equipment Display (see a list of exhibitors on page 12) and the start of 14, 1½-hour seminars held over the next two days. New to this year’s educational program were Roadway Safety Plus Training Workshops. The three-part series was geared to workers, supervisors and managers affiliated with roadway construction activities. The workshops were provided through the cooperative efforts of the Federal Highway Administration and the American Road & Transportation Builders Association as part of a consortium of national road construction stakeholders.

“The Roadway Safety Plus training is the result of a national cooperative effort focused on preventing roadway construction fatalities and injuries,” Ursich said. “This is a unique training opportunity and the lessons learned will make a safer work environment for the men and women of Ohio’s asphalt industry.”

The first concurrent seminars 1-2-3-4, held Tuesday morning, included:

- “Trends Driving the Asphalt Industry,” by National Asphalt Pavement Association’s (NAPA) Audrey Copeland and “Developing the Next Generation of Asphalt,” by National Center for Asphalt Technology Buzz Powell
- “Legislative Overview,” by NAPA’s Jay Hansen
- “Managing Bag House Fines,” by T2ASCO LLC’s T.J. Young
- “Profitable Project Materials Selection & Profitable Project Pavement Evaluation,” by Asphalt Institute’s (AI) Wayne Jones

Concurrent seminars 5-6-7-8, held Tuesday afternoon, featured:

- “Fundamentals of Paving,” by The McLean Co.’s Scott McLean

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Concurrent seminars 9-10-11 on Wednesday morning were:

- “20 Common Production Mistakes,” by T2ASCO LLC’s T.J. Young
- “Marketing with Social Media,” by NAPA’s T. Carter Ross; “FPO Marketing Resources & Deployment,” by FPO’s Bill Fair
- “ODOT’s Investigation of Thermal Segregation,” by ODOT’s Craig Landefeld and “ODOT Specification Update,” by ODOT’s Dave Powers
- “Intelligent Compaction,” by Al’s Bob Horan and “Principles of Compaction,” by Fat Boy Rolling Co.’s Chuck Deahl

The Roadway Safety Plus track of seminars, led by ARTBA Consultants Gary For and Emmett Russell were held during the aforementioned concurrent seminars:

- “Safety Tools for Supervisors and Managers”
- “Preventing Runover and Backover Fatalities During Construction”
- “Preventing Fatalities and Injuries During Night Work”

The 2013 Ohio Asphalt Expo’s Quality Asphalt Paving Awards Luncheon followed Tuesday morning’s concurrent sessions. The luncheon honored 2012’s Master Craftsman, ODOT, Local Road or Street, Commercial Parking Facility, Special Use and Airport projects (see page 14). The highlight of the awards ceremony was the honoring of The Shelly Company for receiving NAPA’s highest national honor in asphalt paving, the Sheldon G. Hayes Award (see Ohio Asphalt, spring 2013).

Following the Paving Award Ceremony, Ursich, shared with the audience the association’s 2012 Annual Report and spoke about FPO’s “next 50 years.”
He noted the growth in the paving awards program over the years as an indication of the members’ interest and understanding of the importance of quality construction in maintaining a strong asphalt market. Ursich went on, “Our longevity — as an industry — depends on providing ‘VALUE’ to our customer. A culture of quality is a necessary element to providing value, but it is not the only element. Providing ‘VALUE’ includes having a product that is relevant to the times in which we live. What is important to the customer needs to be important to us. We must craft our product to meet the desires of the pavement owners.” As an illustration, Ursich pointed to the lifecycle of everyday navigation tools that ranged from a paper map in the earliest days to navigation apps on smart phones. “The map and the GPS are both quality products, but with the coming along of navigation apps for smart phones their relevance is diminished. The customer drove the transformation of personal navigation equipment.” Ursich posed the question, “What does the future hold for asphalt?”

Reading from PE, The Magazine for Professional Engineers, he drew attention to a survey of YE’s (young engineers). PE reported that among the highest concerns of young engineers is SUSTAINABILITY, including sustainability in transportation. Noting that value is not defined by cost alone, but also “relevance” to the customers’ desires, Ursich added, “The asphalt industry is well positioned, for now, to provide the highest value of today’s road building materials. The fact that asphalt incorporates SUSTAINABLE production practices, is completely renewable, embraces recycling, is perpetual and provides safe, quiet, smooth conveyance of people and goods makes it a VERY GOOD VALUE!” Pointing to the FPO message displayed prominently, “ASPHALT . . . DEFINING VALUE, SAFE, SMOOTH and SUSTAINABLE,” Ursich closed, “The industry’s future is all about creating a culture of meeting the customers’ desires — changing as they may be. As long as the industry remains relevant the VALUE of asphalt will be high and the industry’s future will be bright.”

Following the awards luncheon, attendees had their choice of five afternoon seminars to choose from before congregating again for the Chairman’s Reception. The evening reception provided additional time for camaraderie, networking and visiting the Asphalt Expo.

The final day of the 2013 Ohio Asphalt Expo brought with it an unexpected overnight snow, but Wednesday’s events went unscathed — except perhaps for the individuals taking in the outdoor machinery displays. The day began with the Prayer Breakfast, which featured reflective and keynote messages and the honoring of FPO Asphalt Pavement Industry Scholarship recipients and individual awards.
Following opening comments from 2013 FPO Chairman Rodney Russell of Barrett Paving Materials Inc. in Middletown, Lloyd Markley, pastor and hospice chaplain, challenged the audience to think about the condition of their souls. “What is the condition of your soul?” he asked. “There is nothing of higher value than your soul.” As an illustration, Pastor Markley referenced a good friend’s family project to restore a 1950s GMC truck. Markley described how the effort of transforming the pickup from the inside out, and working to bring out the vehicle’s inner beauty and qualities of the rusted-out truck was symbolic of God being in the restoration business as well.

Markley’s words segued into the next facet of the morning, the announcement of the 2013-14 FPO Asphalt Pavement Industry Scholarship recipients. Just as Markley spoke of God’s ability to bring out one’s inner strengths, the 18-year-old scholarship program has had the ability to help students bring out their academic talents. Since the program began, FPO has awarded 372 scholarships totaling more than $466,000. (Scholarship recipients will be featured in the fall issue of Ohio Asphalt.)

Following the awarding of scholarships, Ursich announced the recipients of the Industry Service and William W. “Bill” Baker awards to Bill Hamm and Jim Jurgensen, respectively. (See page 26 for more information on this year’s recipients.)

The breakfast’s keynote speaker was Graniterock’s Keith Severson, who spoke about the company’s award-winning business culture. Located in California, Graniterock operates the largest, crushed rock quarry west of the Mississippi River. The company provides aggregates, concrete and asphaltic road, paving, landscaping and building materials. Severson’s comments centered on the qualities that made Graniterock past recipient of the Malcolm Baldridge National Quality and Governor’s Golden State Quality awards. “You have mission statements, you have core values. I would encourage you to examine them and make sure they are true to what you do, and then you can build your corporate objectives on that,” said Severson, adding, “… Take a good look and make sure (your objectives) are based on the core values that you have lived with through all your generations, and that the core values you have are going to stand the test of time.” From that simple examination of its mission statement and core values, Severson said Graniterock created nine corporate objectives. “That’s the skeleton that we hold our business model on. From that, we build baseline goals.”

Severson’s comments seemed in-tune with FPO’s mission, which resulted in the 51st Annual Meeting, Equipment Expo & Trade Show surpassing past milestones and working toward a better future for the asphalt pavement industry.

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Quality Awards Feature Asphalt’s Quantity of Uses

To truly understand how flexible pavements encompass our everyday lives, all you had to do was be in attendance at the annual Quality Asphalt Paving Awards during the Ohio Asphalt Expo. On display were asphalt’s diverse uses. From high-traffic interstates, low-volume rural roadways and pedestrian pathways, to airport runways, commercial facilities and even office reception areas, asphalt’s quantity of uses were showcased along with the quality materials and workmanship involved on the winning projects.

During the Ohio Asphalt Expo’s opening day, nearly 40 projects from the 2012 construction year were showcased. Project participants were honored with plaques and “Q” for Quality medallions for company equipment and hardhat stickers for paving crew members.

Helping to honor the winning projects were ODOT Assistant Director Jim Barna, FPO President/Executive Director Cliff Ursich and FPO Director of Customer Relations Andrew Gall, who announced the awards.

Here is a look at the winning projects:

**MASTER CRAFTSMAN AWARD**

Proving that asphalt quality isn’t fleeting, the Quality Awards began by showcasing a project that is withstanding the test of time, heavy use and the environment. Pavements chosen for the Master Craftsman Award have provided a minimum of a 15-year service life with only light maintenance. This honor demonstrates asphalt paving’s durability and low maintenance costs throughout the life of the pavement.

**Interstate 71 in Madison Co.; Project #214 (95)**
**Paving Contractor: The Shelly Company**

This project has provided 18 years of exemplary pavement performance.

*The Shelly Co.’s Richie Boring and Tony Barna and ODOT 6’s Brian Hupp*
Resurfacing of U.S. Route 20 in Lorain County, ODOT District 3
Paving Contractor: Kokosing Construction Co.

Noted for its good ride quality and excellent overall completeness, Kokosing Construction provided five miles of resurfacing on a four-lane section of U.S. Route 20 from the State Route 511 and 301 interchanges.

Kokosing Construction’s Matt Culler and ODOT District 3’s Brian Rawlings

Construction of U.S. 24 in Lucas County, ODOT District 2
Paving Contractor: The Shelly Co.

This multi-year, multi-phased project included strict density and smoothness requirements and featured a stone mastic asphalt (SMA) surface course. Shelly incorporated reclaimed asphalt pavement, recycled asphalt shingles and fibers in the mix to produce a smooth, aesthetically pleasing asphalt pavement.

ODOT District 2’s David Geckle and Shelly’s Ross McLaughlin

Rehabilitation of I-70 from S.R. 72 to U.S. 40 in Clark County, ODOT District 7
Paving Contractor: John R. Jurgensen Co.

The John R. Jurgensen Co. constructed a new, full-depth-asphalt third lane with a 12-foot inside shoulder along I-70. The company utilized a material transfer device and GPS equipment to produce an extremely smooth project.

John R. Jurgensen’s Mike Davis and Brian Jones with (center) ODOT District 7’s Sal Verzi

Reconstruction of I-90 in Ashtabula County, ODOT District 4
Paving Contractor: Shelly & Sands Inc.

Despite the project’s high level of difficulty, Shelly & Sands was able to achieve good ride quality on the major reconstruction of this 5.3-mile section of I-90. The project called for rehabilitation of multiple structures and included a seven-year warranty on the pavement.

Shelly & Sand’s Kim Casto and Keith Schoonover and ODOT District 4’s William Glass
Resurfacing of S.R. 249 in Defiance County, ODOT District 1  
Paving Contractor: Gerken Paving Inc.

Gerken Paving performed 14 miles of resurfacing work on S.R. 249, including 3½ miles of widening from the Indiana state line to S.R. 15 in Ney. The project featured the installation of Safety Edge and required 23,000 tons of asphalt with an average thickness of 2 inches. This project received the full 100-percent density bonus from ODOT.

Gerken Paving’s Kyle Borstelman

Resurfacing of W. Main St. & Granville St. in the City of Newark in Licking County, ODOT District 5  
Paving Contractor: Kokosing Construction Co.

Designed by the City of Newark and administered by ODOT, Kokosing Construction resurfaced W. Main Street from North 21st Street to North Third Street and Granville Street from North 21st to North Fifth. The company had to overcome the project’s high traffic volume, the location of hundreds of utility castings and widths ranging from 28 to 95 feet.

Newark City Engineer Brian Morehead, Kokosing Construction’s Jason Pike and ODOT District 5’s Jeff DePolo

Rehabilitation of I-75 in Warren County from S.R. 122 to the Montgomery County line, ODOT District 8  
Paving Contractor: John R. Jurgensen Co.

The John R. Jurgensen Co. performed work on the eight-mile project in two, four-mile sections to allow for better access for material trucks and utilized material transfer device and GPS equipment to produce an extremely smooth pavement. The project included not only reconstruction of I-75 but also the addition of an extra lane from the City of Middletown to the Montgomery County line.

John R. Jurgensen’s Ben Fist and Brian Trainer

Resurfacing of I-70 in Guernsey County, ODOT District 5  
Paving Contractor: Shelly & Sands Inc.

This multi-lane resurfacing of nearly 11 miles of I-70, located at the I-70/I-77 Interchange included the use of more than 100,000 tons of asphalt. The project was noted for excellent smoothness, as it received 99.5 percent of the maximum allowable smoothness incentive.

ODOT’s Kristi Garber and Shelly & Sand’s Shane Novaria
Smoothsealing of S.R. 32 in Pike County, ODOT District 9
Paving Contractor: The Shelly Co.

Despite cool weather conditions, The Shelly Co. provided a Smoothseal overlay that earned this Quality Award. The company overcame the challenging conditions by using a material transfer device that helped create a smooth, high-quality asphalt pavement of S.R. 32 near Piketon between S.R. 104 and the rest area.

Shelly’s Richie Boring and Tom Lambert and (center) ODOT District 9’s Jason Bednarczyk

Resurfacing of S.R. 424 from the Defiance County line to the City of Napoleon in Henry County, ODOT District 2
Paving Contractor: Gerken Paving Inc.

On this two-lane, seven-mile-long resurfacing project, Gerken Paving removed two inches of existing pavement and replaced it with 17,000 tons of asphalt in two courses of less than three inches total thickness. The project included 10 culvert replacements and five culvert extensions along with resurfacing of 10 super-elevated curves.

Gerken Paving’s Jason Baden

Construction of U.S. 33 Nelsonville Bypass in Athens County, ODOT District 10
Paving Contractor: Kokosing Construction Co.

Several reasons made this $45.2-million, Phase II Nelsonville Bypass project an award winner. Located north of the existing alignment in the Wayne National Forest, Kokosing took measures to be environmentally sensitive by incorporating green paving practices such as Warm-Mix Asphalt and reclaimed asphalt pavement in its asphalt mixes. Paved in 28-foot-wide sections to eliminate longitudinal joints at the centerline helped produce a high-quality, smooth asphalt pavement with excellent density. The project was also heralded for opening nine months ahead of schedule.

Kokosing Construction’s Andy Rhodes and Jerry Hite and (center) ODOT District 10’s Audrey Seals
Resurfacing of U.S. 62/68 in Brown County, ODOT District 9
Paving Contractor: John R. Jurgensen Co.

The John R. Jurgensen Co. used a material transfer device on the four-lane milling and resurfacing project to help provide a high-quality pavement that met ODOT smoothness incentives.

John R. Jurgensen’s Brian Jones and ODOT District 9’s Eric Smith

Resurfacing of U.S. 40 in the City of Cambridge,
ODOT District 5
Paving Contractor: Shelly & Sands Inc.

Shelly & Sands overcame challenging maintenance of traffic operations on this mill-and-replace project in downtown Cambridge’s business area. More than 6,000 tons of asphalt were used in the 2- to 2¼-inch intermediate and surface courses. The project featured more than 25 intersections and varying pavement widths.

ODOT District 5’s Jerry McQuain and Shelly & Sands’ Pat Gill

Resurfacing of S.R. 29 from the Champaign County line to U.S. 40 in Madison County, ODOT District 6
Paving Contractor: Kokosing Construction Co.

Kokosing Construction corrected existing pavement deficiencies in the 12-mile-long resurfacing of S.R. 29. A single lift of 12.5mm mix was used because of the heavy traffic conditions from nearby I-70. These traffic conditions presented numerous safety and traffic-control issues. Kokosing not only corrected pavement deficiencies but achieved excellent smoothness without exceeding plan quantities.

Kokosing’s Jason Pike and ODOT’s Don Violet and Tom Besinger

Resurfacing of S.R. 32 in Adams County from the Village of Seaman to the Brown County line,
ODOT District 9
Paving Contractor: The Shelly Co.

Shelly utilized MS4 Transfer and Pave-IR Thermal Segregation Machine devices to achieve excellent smoothness and density on this award-winning project. Project crews were commended for working around difficult maintenance of traffic coordination because of the jobsite’s location near a local hospital, which required additional subcontractors to assist emergency vehicles entering and exiting the medical facility.

Shelly Co.’s Richie Boring and Tom Lambert and (center) ODOT District 9’s Eric Smith
LOCAL ROAD OR STREET

Smoothsealing of Sugar Grove Road in Fairfield County, Fairfield County Engineer Paving Contractor: Kokosing Construction Co.

Kokosing Construction performed pavement repair and placed a 1-inch overlay on more than four miles of Sugar Grove Road from Wilson Lane to the Sugar Grove corporate line. The project, which allowed the county to experiment with 424 Fine-Graded Polymer Modified Asphalt, Type B material, was noted for excellent rideability and improved skid resistance.

Kokosing’s Jerry Hite and Fairfield County Engineers’ Jeremiab Upp and Eric McCrady

Resurfacing of Troy Manor Road, City of Huber Heights Paving Contractor: Southern Ohio Paving

Described as a very nice looking job and an excellent example of a municipal street paving project, Southern Ohio Paving performed pavement removal and resurfacing along with traffic control and resident notification as part of the city’s 2012 Street Improvement Program. The total program included work on 24 different streets. Southern Ohio Paving was heralded for completing the project, which was allotted 46 scheduled days, in 12 days.

Southern Ohio Paving’s Mike Maggard and Jeff Finley

Resurfacing of McKinley Avenue between Madison Avenue and Hilliard Road, City of Lakewood Paving Contractor: The Shelly Co.

The Shelly Co. provided paving and additional curb and crosswalk work as part of a 13 street municipal paving program. The Shelly Co. used asphalt mixes with reclaimed asphalt pavement in producing high-quality streets that were finished ahead of schedule.

City of Lakewood’s William Corrigan and Shelly Co.’s Scott Clark
Widening of Georgesville Road from Sullivant Avenue to Broad Street in Franklin County, Franklin County Engineer Paving Contractor: Shelly & Sands Inc.

Not only was Shelly & Sands confronted with an accelerated schedule to accommodate the opening of the new Hollywood Casino in Columbus, the company dealt with high-traffic volumes. Despite the challenges, Shelly & Sands successfully completed the widening and realignment project that featured full-depth asphalt pavement.

Shelly & Sands’ Ed Rowan and Dana Mills and Franklin County Engineers’ Dean Ringle and Cornell Robertson

404 LVT Resurfacing of North Drexel Road, City of Bexley Paving Contractor: Kokosing Construction Co.

As part of the annual City of Bexley Street Improvement Program, officials were looking to alleviate moisture intrusion in the pavement from the conditions of the curb and tree shade along the streets. Kokosing used a specified 404 LVT mix that would provide a fine-graded and moisture-resistant surface but still reduce costs compared to a polymer-modified Smoothseal. After it sealed the curb joints and added a leveling course, Kokosing placed a 1-inch lift of 404 LVT that resulted in a project noted for smoothness and impermeable properties.

Kokosing’s Michael White and Bryan Thorne and City of Bexley’s Bill Harvey

Resurfacing of Garfield Road, New Russia Township Paving Contractor: Erie Blacktop Inc.

Erie Blacktop’s resurfacing of Garfield Road was noted for its good ride quality and excellent workmanship at the intersecting roadways.

Erie Blacktop’s Randy Wikel
Reconstruction of Southwyck Boulevard,
City of Toledo
Paving Contractor: The Shelly Co.

Shelly performed the one-mile-long, full-depth reconstruction of Southwyck Boulevard in two phases. Following the initial pavement and base removal and subgrade stabilization, Shelly replaced it with an 8-inch aggregate base, 6-inch 301 base and 1.75-inch, 19mm intermediate and 1.5-inch, 12mm surface courses.

Shelly Co.’s Ross McLaughlin and City of Toledo’s Eric Tittle and Dustin May

Resurfacing of Old State Road in Delaware County,
Delaware County Engineer
Paving Contractor: The Shelly Co.

The Shelly Co. paved 41 roadways as part of the Delaware County Resurfacing Program. Shelly carefully coordinated and adjusted operations to meet the needs of the 14 different townships that were involved in the program. The project required four mix types, which were placed and tested to ODOT specifications, and utilized 16 pavement thicknesses.

Shelly’s Tony Barna and Dave Gentil

Resurfacing of Shelby-Ontario Road,
City of Ontario
Paving Contractor: Kokosing Construction Co.

With the help of suggestions regarding the City of Ontario’s 2012 Street Resurfacing Program, Kokosing Construction revised the scope of work to conserve materials and maintain existing profiles that allowed additional streets to be resurfaced.

Kokosing’s John A. Bryant and City of Ontario’s Roger Heston

Resurfacing of Clime Rd. in Franklin County,
Franklin County Engineer
Paving Contractor: Decker Construction Co.

Overcoming inconsistent curb elevations, Decker Construction achieved excellent smoothness and ride quality on this multi-year, multi-phase resurfacing of Clime Road in Franklin County. Quality paving was achieved by using two pavers in echelon formation on the surface course.

Franklin County Engineers’ Dean Ringle and J.R. Wolfe and Decker’s Fritz Smith

Resurfacing of Clime Rd. in Franklin County,
Franklin County Engineer
Paving Contractor: Decker Construction Co.
COMMERICAL PARKING FACILITY

Scioto Downs Racino Parking Lot, MTR Gaming
Paving Contractor: The Shelly Co.

This project was described as a good example of a commercial parking facility notable for its quality and workmanship, Shelly completed the one-month project under strict deadlines to allow for the racino’s opening. Because of the number of contractors operating under the similar strict schedule and deadline, significant project coordination was required.

Shelly’s Adam Prince and Kenneth Untied
Homestead Park Resurfacing Project, Franklin County Engineer
Paving Contractor: Kokosing Construction Co.

Despite the complicated geometric layout of the parking areas and access roadways of this heavily used park, Kokosing successfully performed the resurfacing work while maintaining access for vehicle, pedestrian and bike traffic.

Kokosing’s Michael White and Franklin County Engineer Dean Ringle

Honda of America East Liberty Plant Product Storage Yard, Honda of America
Paving Contractor: The Shelly Co.

For the Honda East Liberty Plant’s rail load-out facility, Shelly removed a ½-inch scratch course and added a 1 ¼-inch 438 Type I surface course for the storage lot and a polymer-modified surface course in the rail load-out area for better durability and performance.

The Shelly Co.’s Larry Dible

Construction of Parking Lot & Driveways at the Liberty Aviation Museum, Liberty Aviation Museum
Paving Contractor: Erie Blacktop Inc.

Erie Blacktop’s construction of new driveways and parking lot for the newly constructed Port Clinton museum is noted for its excellent workmanship and overall completeness.

Erie Blacktop’s Tyler Wasserman

StreetPrint of Bing Cancer Center Reception Area, OhioHealth
Paving Contractor: Decker Construction Co.

Decker Construction applied the StreetPrint application to the new OhioHealth Arthur G.H. Bing Cancer Center’s patient reception area. The company paved, printed and colored the pavement to appear as brick.

Decker Construction’s Fritz Smith
AIRPORT PAVEMENT

Runway 5R-23L, Phase 3 Pavement Repair & Resurfacing at Rickenbacker International Airport, Columbus Regional Airport Authority
Paving Contractor: The Shelly Co.

Having received Quality Asphalt Paving Awards on the project’s initial two phases, Shelly removed and replaced 4½ inches of existing pavement and made concrete joint repairs in the project’s third phase. The company utilized a material transfer device to ensure superior smoothness and ensure all FAA requirements were achieved.

The Shelly Co.’s Dave Scott and Jim Pritchard and (center) Columbus Regional Airport Authority’s Paul Ryan

Resurfacing of Runway 4-22 at Wakeman Airport, Ortner Airport LLC
Paving Contractor: Erie Blacktop Inc.

Erie Blacktop used a total of 4,200 tons of asphalt in the overlay of the airport’s existing runway and aircraft parking areas. The project’s accelerated schedule required enhanced coordination by Erie Blacktop between the facility’s owner and FAA.

Erie Blacktop’s Justin Walters

SPECIAL USE PAVEMENT

North Coast Trail, Sandusky County Park District
Paving Contractor: Erie Blacktop Inc.

Erie Blacktop constructed the North Coast Inland Trail’s Phase 2 from Clyde to Bellevue.

Erie Blacktop’s Randy Schaffer

GRIP-TIGHT Polymerized Fog Seal

- Locks down excess chips—better wearing surface
- Open to traffic in 15 minutes
- Leaves chip and seal surface BLACK for best contrast and delineation for optimum safety
- Help melt snow and ice in winter conditions

JASA Asphalt Materials / Russell Standard Corp.
990 Hazel Street, Akron, OH 44305 Tel: (330)733-9400 www.jasarussell.com
Runway Rehabilitation at the Newark-Heath Airport, Licking County Regional Airport Authority
Paving Contractor: Kokosing Construction Co.

Kokosing suggested revisions on this project in order to have the airport’s runway and associated areas achieve the proper profile and cross slope. In replacing a 3-inch depth of asphalt in two courses, Kokosing used a paver that featured a 65-foot mobile ski reference to achieve proper profile smoothness.

Kokosing’s Mike Harris and Brandstetter/Carroll Inc’s Bob Stegeman

Pavement Repair & Resurfacing of Perry Co. Airport Runway, Perry County Commissioner
Paving Contractor: The Shelly Co.

While the project was required to make the airport runway and taxiway compliant with current FAA standards, The Shelly Co. turned the project into a Quality Award recipient. Performing the majority of work while maintaining active airport and runway operations during the five-day shutdown for paving, Shelly used a trackless tack during each lift and a Geogrid interlayer before the final surface course.

The Shelly Co.’s Tony Barna and Dave Gentil

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Bill Hamm, who was posthumously honored with the 2013 Industry Service Award, served as an early member of FPO’s Technical Committee where he helped usher in many current mainstays of the industry.

Established in 2003 by the FPO Board of Directors, the Industry Service Award honors individuals who have made substantial contributions through their work on the association’s Annual Meeting Ohio Asphalt Expo, Educational, Environmental, Marketing, Membership & Finance or Technical committees.

Hamm joined the FPO Technical Committee in 1977, which was one of the association’s four committees at the time. The late 1970s was a period of many changes to the asphalt industry, as it was a period that featured the introduction to drum mix plants, quality assurance specifications, plant quality-control initiatives and recycling technology. Today, all four of these changes — and many more in which Hamm played an important role in developing for FPO members — have led to asphalt being the pavement of choice.

FPO benefitted from the experience Hamm had already developed over his more than 20 years of industry experience prior to the time he joined the Technical Committee. Hamm, in the mid-1950s, worked at the River Hunt Club, which was owned by Charles Shelly, founder of The Shelly Co. When Shelly developed the land for use by the Muskingum River Gravel Company, Hamm joined the company. He joined the construction business under Charles Shelly’s guidance, as his first project was the parking lot at Dillon State Dam. Following a company split, Hamm worked with Shelly & Sands, where he would advance to a company officer position.

Hamm, who passed away in July 2011 at the age of 77, was often cited “as a professional who knew the business and knew how to build quality asphalt pavements.”

In announcing the Industry Service Award, FPO President/Executive Director Cliff Ursich said Hamm “was highly regarded for his knowledge of quality asphalt paving operations and respected by his colleagues for his ethical business practices.”

Hamm’s son, Wade accepted the award in his father’s honor.
A bittersweet two days ended on a sweet note for Jim P. Jurgensen, who retired from the FPO Board of Directors after more than 20 years of service, but was also honored with the association’s esteemed William W. “Bill” Baker Award.

The Baker Award is named after the former FPO Incorporated president who directed the association from 1976 to 1991. In presenting the 2013 recipient, Ursich said Jurgensen shares many of the traits that the award’s namesake had in leading FPO.

Ursich described the president-secretary of John R. Jurgensen Co., which operates branch companies such as Valley Asphalt Corp. and Walls Bros. Asphalt Co., as:
- An innovator
- A person passionate about the asphalt industry
- A believer in quality asphalt construction
- A tough competitor
- A philanthropist
- Persuasive
- Invested in the industry’s future
- Tireless

In his 21 years of service on the FPO Board of Directors, Jurgensen participated on the Annual Meeting, Executive, Legislative, Nominating and Membership & Finance committees, and as association chairman in 1994 and 2010.

Ursich noted Jurgensen’s 1994 chairman’s term when FPO implemented its first strategic plan, which focused on quality. “Quality in every facet of Ohio’s asphalt paving industry; from the types of mixes we produce, the quality of training for employees and the quality of the final product placed on the road,” Ursich said. From that plan ushered in during Jurgensen’s watch, warranty asphalt construction, use of polymers, paver operator schools, among other things were key initiatives.

Jurgensen represented members at the national level through his service as a board member of the National Asphalt Pavement Association. The Jurgensen Company was among the first contractors in the nation to use the crack-and-seat process, which was an experimental technology used to prepare concrete as a base material for an asphalt overlay; the result of which in Ohio “set in motion the greatest advancement of asphalt use,” according to Ursich.

“What began as just an interest, while as a lad riding along with his father, John R., to jobsites,” Ursich added, “grew through the high school and college years to become a passion that would impact not only the Jurgensen Company for good, but also an entire group of asphalt contractors called Flexible Pavements of Ohio.”

In accepting the award, Jurgensen said, “I appreciate it. It’s been a great run. I do love asphalt, I always have.” However, he told the audience that the association and industry must remain diligent in keeping asphalt as the pavement of choice, and although he was retiring from the FPO board he was still going to be around in leading that effort.

Call for Presentations for the 2014 Ohio Asphalt Expo

The Asphalt Expo is Ohio’s premiere asphalt pavement event with multiple concurrent educational sessions and an indoor and outdoor trade show and exhibition. Organized by Flexible Pavements of Ohio (FPO), the Ohio Asphalt Expo provides pavement owners, public works professionals, contractors and pavement designers with information on state-of-the art industry practices and technologies to ensure successful, long-lasting asphalt pavements.

The educational presentations at the Ohio Asphalt Expo are provided by speakers who are highly accomplished in their fields of expertise and are recognized as knowledgeable industry leaders. FPO is currently seeking presentation proposals for the 2014 Ohio Asphalt Expo scheduled for March 25-26, 2014, in Columbus. Presentations may be submitted for one of three thematic tracks: Asphalt Plant Operations, Asphalt Paving Operations & Equipment and Regulatory & Governmental Policy. All presentations should logically fit within one of the Expo themes, be topical in nature, and not be direct marketing for a specific company product or service.

Please submit a presentation topic, suggested speaker/presenter and brief description of the presentation by Friday, July 26, 2013, to Andrew Gall, director of Customer Relations, by email at andrew.gall@flexiblepavements.org or by fax at (614) 791-4800.
The asphalt paving industry led by the National Asphalt Pavement Association (NAPA) has recently introduced the term “Thinlay” to the pavement industry’s jargon. The intention is to better communicate a trend that has been growing in the asphalt paving market. As pavement owners seek more cost-effective surface treatments, many are turning to thin layers of asphalt mixes specially designed for pavement preservation.

**What’s a Thinlay?**

Jim Huddleston, P.E., of the Oregon Asphalt Pavement Association provides a concise answer to that question. “Thinlays are a class of asphalt treatments specifically engineered for preservation and can be placed as thin as necessary (say ¾ of an inch) but can also be placed thicker where necessary (correct grade issues for example). Thinlays are designed with finer grading and use binders that result in a flexible, water proof, skid-resistant preservation treatment that not only seals and protects the existing pavement but also can improve smoothness and add some structure, and because of their low permeability they do not require seal coats over their life span. Thinlays can be expected to last two to three times longer than conventional preservation treatments, making them very attractive on a lifecycle basis.”

**Asphalt’s Suite of Treatments**

Thinlays are just one more addition to an already versatile suite of asphalt treatments (Figure 1). Users of asphalt pavement are very aware of asphalt “overlays,” which has been the traditional use of asphalt mixtures. Overlays are used to rehabilitate both asphalt-base pavements and concrete pavement. Asphalt “Structural” overlays are used to increase a pavement’s strength. Though even the thinnest layers of asphalt add some strength to a pavement, structural overlays are a deliberate attempt to add strength. Added strength results in extended life of an asphalt pavement and greater capacity to endure the beating of growing traffic. Structural overlays consist of a minimum of two courses of asphalt, an intermediate course for strength and a surface course for wear resistance.

Asphalt “Functional” overlays are an additional class and have a different purpose than structural overlays. Functional overlays are used on pavement to restore a deficiency in the wearing surface. Pavements that may be experiencing poor skid resistance, top-down cracking, premature deterioration or some other distress that affects ride smoothness or safety, can be corrected with a functional overlay. In Ohio, functional overlays may be comprised of one or two layers of asphalt mix, a leveling course and surface course. Functional overlays rarely exceed a 2-inch thickness.

Asphalt “inlays” (a.k.a. mill-and-fill) can be used as a rehabilitation strategy or for pavement preservation. When used for rehabilitation it is done so for correcting functional distresses, just the same as functional overlays. They are to be used only on structurally sound pavement. The advantages of inlays are: they are well-suited for quick repairs (“Get In, Get Out, and Stay Out”); facilitate free-flow movement of traffic; retain the same elevation as the original pavement, thus providing cost savings through salvaging non-distressed mainline pavement and shoulders; and seam (i.e. longitudinal joint) construction techniques can be better employed.

“Thinlays” were developed specifically for pavement preservation. The concept of pavement preservation has been described as the practice of keeping good pavements in good condition. Advocates
for pavement preservation cite benefits as being extended “good” pavement conditions and overall lower-maintenance cost. A preventive-maintenance strategy ensures pavement conditions never deteriorate to a level requiring pavement rehabilitation; as such, pavements are monitored and treatments applied when the deterioration is confined to the surface and is of such mild severity that in some cases the necessity of a treatment is sometimes questioned by persons unfamiliar with the preservation concept. The benefit, however, is those treatments need only be modest; sufficient to “preserve” the integrity of the pavement surface. With this in mind, “thinlays” were developed.

Ohio’s Venture Into “Thinlays”
Ohio’s earliest venture into Thinlay-like asphalt treatments began in the mid-1960s with the development of rubberized sand asphalt. The early 1990s ushered in “Sand Asphalt With SBR Latex,” an experimental Thinlay dubbed Smoothseal, specifically designed to be placed at a ¾-inch lift thickness. Having a recipe consisting of No. 9 aggregate, natural sand, a dash of No. 8s and polymer-modified asphalt, this experiment was placed ¾-inch thick on Logan County State Route 508. The experiment was a success, lasting 13 years before needing replaced.
The year 2002 brought the Thinlay technology to greater prominence, as the Federal Highway Administration encouraged states to adopt the pavement preservation philosophy. The Sand Asphalt with SBR Latex specification was revised to allow its use on heavy-traffic pavements, as well as light duty. Along with the specification changes came a new name and a specification number: Supplemental Specification 854, “Fine-Graded Polymer Asphalt Concrete.” The use of the material grew, as state and local transportation jurisdictions adopted the pavement preservation philosophy. By 2005, “Fine-Graded Polymer Asphalt Concrete” was sufficiently rigorous, a specification that was added to the Ohio Department of Transportation (ODOT) Construction & Materials Specification book as Item 424, Type B. In recent years, 404-LVT (low volume traffic) was introduced by FPO and added to the thinlay repertoire. 404-LVT was specifically developed as an asphalt-mix alternative to surface treatments (i.e. chip seal, microsurfacing, cape seal, etc.).

A testimony to the success of Ohio’s Thinlay, “Fine-Graded Polymer Asphalt Concrete” came by way of an ODOT District 9 experiment begun in 2002. As part of ODOT’s early venture into pavement preservation, District 9 contracted to thinlay Pike County S.R. 32 with a ¾-inch layer. In 2012, this pavement received a ¾-inch thinlay making it a “double PM” (i.e. second preventive maintenance treatment).

District 9’s experience provides valuable insight. Pike County S.R. 32 is a flexible pavement – that is to say, its original construction used an asphalt base. Where asphalt-base construction is used, pavement management is predictable and made affordable through pavement preservation techniques – a real benefit for pavement managers needing to stay on budget. Studies evaluating the performance and costs of pavements confirm that asphalt-base pavements outperform concrete.

**Are All Pavement Preservation Treatments Equal?**

Though all pavement preservation treatments seek to restore pavements to near original condition, not all treatments provide equal benefits or have near equal costs. Pavement Condition Rating (PCR), referred to by some agencies as PCI (Pavement Condition Index), is widely used in pavement preservation. PCR, as the name implies, is a tool developed for pavement managers to assess current
pavement conditions, assess deterioration rate and develop strategies to maintain a pavement in an acceptable condition. PCR, as good of a tool that it is, does not provide a complete picture of benefits received from the various preservation treatments.

A PCR is determined by measuring the severity and extent of distresses seen in a pavement. For instance, a rating for raveling in a pavement may show the distress severity to be high (i.e. rough or pitted surface) and the extent to be occasional (i.e. less than 20 percent of the surface area). For an asphalt pavement, such ratings are done for bleeding, patching, potholing, crack-sealing deficiency and other distresses. PCR will improve commensurate with a preservation treatment’s effectiveness in correcting the distress. If the treatment corrects all of the deficiencies the pavement condition rating is considered almost as good as new.

There is a danger in relying solely on pavement condition ratings as a decision-making tool for treatment selection. As an example, for a given pavement having only surface cracks, a treatment to seal the cracks would result in the same pavement condition rating as a thinlay. Both would result in a PCR indicating they are in near new condition. However, there is no recognition of the benefits received from the thinlay, which go well beyond sealing the cracks.

Figure 2 shows a typical plot of pavement condition over time. When new, the condition is defect free and as such the pavement is scored 100, which means “very good” condition. As the years pass and the pavement is exposed to the destructive forces of traffic and nature, the condition declines. At a predetermined condition level a preservation treatment is performed on the pavement, returning the condition to near-new, and the cycle continues. Though the treatments may return the pavement to near-new condition, the robustness of the treatment will dictate the length of time the treatment will last.

An additional consideration beyond pavement condition is pavement “serviceability.” Pavement serviceability is a concept developed by pavement engineers at the famous AASHO Road Test. Serviceability is a measure of pavement users’ perceptions regarding its acceptability and is largely impacted by their perceptions of ride quality. You might expect that perception to vary based on the mode of transportation, and it does. For instance, a person using alternative transportation such as a bicycle would have much-less tolerance for a pavement preservation treatment that leaves the road surface rough as compared to one that makes it smooth. It should be noted the work of AASHO only used automobiles.

Like pavement condition rating, serviceability declines as a pavement deteriorates under the punishment of traffic. Preservation treatments arrest the deterioration in serviceability caused by traffic. However, unlike the effect on PCR, pavement preservation treatments will vary in their ability to improve serviceability. Treatments that both repair pavement deterioration and improve pavement profile (i.e. pavement geometry that affects ride quality) can restore serviceability to near-new pavement levels (Figure 3). Treatments that primarily repair pavement deterioration without improvement to pavement profile have minimal effect on serviceability (Figure 4).

Deciding Which Treatment Is Right For Your Pavement

This is easier said than done. Deciding which preservation treatment is most appropriate for your project involves several determinations. First, a determination of suitable preservation treatments is made by identifying those that restore both the pavement condition and serviceability. Having identified suitable treatments, a cost analysis is performed to identify and rank the treatments for cost effectiveness. Finally, determine which preservation treatment provides the best value. Best value is a measure of cost versus benefits received. Benefits typically aren’t quantifiable by dollars and cents. For instance, the value of improved ride quality and the safety associated with such are not easily quantified. The decision of which preservation treatment to use comes down to a value judgment. It involves cost of treatments and what an agency deems are necessary attributes in a preservation treatment to satisfy its customers, the road user.

The introduction of thinlays provides pavement managers an opportunity to capture the long-term benefits and value of asphalt overlays at reduced costs. Ohio’s venture into thinlays has been met with satisfaction, as demonstrated by growing interest by both state and local government markets and used on pavements of all traffic levels. An assessment of costs and attributes of thinlays and surface treatments identifies thinlays as providing a good value. Where asphalt-base construction is used, pavement management is predictable and made affordable through pavement preservation techniques like thinlays – a real benefit for pavement managers needing to stay on budget.

1 Pavement Life-Cycle Cost Studies Using Actual Cost Data, A Synthesis, by Jorge N Villacres, PE, Asphalt Pavement Alliance, February 2005
According to a recent survey of Ohio asphalt producers released by Flexible Pavements of Ohio, the asphalt paving industry is a major economic engine driving Ohio’s recovery. And few businesses can make a greater claim to being home grown. The industry puts Ohioans to work using Ohio products to improve the quality of life in Ohio.

**Ohio Jobs**
The asphalt industry adds to Ohio’s wealth, with plants and equipment worth $662 million. Ohio’s 176 asphalt plants provide 4,700 jobs with a total annual payroll exceeding $232 million. Industry employees pay taxes of almost $24 million. In addition, more than 1,300 truckers are hired each year with a payroll of $106 million.

**Ohio Economic Engine**
Every paved road, every four-lane highway and every parking lot contributes to the economic health of our state. Asphalt paving is designed and mixed in-state, incorporating Ohio aggregates and recycled Ohio pavement and other recycled products; heated to paving consistency onsite and laid by Ohio workers. Ohio’s asphalt industry spent $723.3 million in 2012 on raw materials and fuel, plus $26.3 million on Ohio-generated electricity.

### ECONOMIC IMPACT DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of asphalt plants and related construction equipment</td>
<td>$662.6 million</td>
</tr>
<tr>
<td>Number of employees during peak season</td>
<td>4,700</td>
</tr>
<tr>
<td>Annual payroll</td>
<td>$232.5 million</td>
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<tr>
<td>Number of hired truckers</td>
<td>1,300</td>
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<tr>
<td>Annual payroll for truckers</td>
<td>$105.8 million</td>
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<tr>
<td>Annual taxes paid</td>
<td>$23.5 million</td>
</tr>
<tr>
<td>Annual expenditures on raw materials, fuel and utilities (including electric)</td>
<td>$749.6 million</td>
</tr>
<tr>
<td>Tons of reclaimed asphalt pavement reused into new pavement</td>
<td>3.86 million</td>
</tr>
</tbody>
</table>

**Ohio Recycling**
Asphalt pavement is the most-recycled material on Earth, and Ohio is among the top recyclers of pavement in the U.S. Nearly 3.9 million tons of asphalt were reused in 2012, saving on expensive virgin materials. That represents enough reclaimed material to pave a two-lane road from Columbus to Fairbanks, Alaska, via the Alaska Highway; more than 3,800 miles of pavement! Asphalt also may incorporate other used materials such as asphalt roofing shingles, scrap tires and recycled used oil.

*The economic profile by Flexible Pavements of Ohio is based on extrapolated data from responses to an industry survey representing 126 of Ohio’s 176 asphalt mixing facilities.*
Ohio asphalt plants used more than 61,000 tons of recycled shingles in 2012. Recycling efforts save money, reduce the waste going to landfills and create a related tier of jobs that support the paving industry.

More Ohio Benefits
Good driving surfaces paved with asphalt not only contribute to the quality of life for Ohio drivers, they also pave the way for business traffic, offering smooth, safe and fuel-efficient surfaces. Ohio’s infrastructure is a critical part of its economic competitiveness.

### Recycled Asphalt Pavement Used in Asphalt Mix (Ohio)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons of Rap Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3,400,000</td>
</tr>
<tr>
<td>2010</td>
<td>3,600,000</td>
</tr>
<tr>
<td>2011</td>
<td>3,400,000</td>
</tr>
<tr>
<td>2012</td>
<td>3,900,000</td>
</tr>
</tbody>
</table>

Enterprising recyclers have taken advantage of the rise in oil prices to reclaim roof tear-offs by removing nails, wood and roofing paper, then shredding and grinding the shingles into a beneficial-use product known as post-consumer recycled asphalt shingles (PC-RAS). Paving companies combine PC-RAS with aggregate and use it in new paving mixes. Used correctly, it actually makes a pavement more resistant to rutting and mitigates paving cost increases. Instead of ending up in a landfill, an old roof helps make a new road surface.

“The free-enterprise system amazes me with its efficiency,” says Cliff Ursich, executive director of Flexible Pavements of Ohio.

Blacktop is Green – From Roof to Road
The word is out that asphalt paving is the most recycled material in the world. Last year alone the Ohio paving industry recycled 3.9 million tons of pavement, about one quarter of the paving material it laid down, making Ohio among the top in the nation for pavement recycling. But did you know that asphalt roofing shingles are becoming part of Ohio pavements? Producers incorporated 61,000 tons of recycled asphalt shingles in their product in 2012.
Blacktop is Green – Hot Mix to Warm Mix

Until recently, the asphalt industry relied solely on hot-mix methods of producing asphalt pavement. But just as the adoption of recycling has transformed the business, the old technology is changing, and changing fast. According to a 2012 survey conducted by the National Asphalt Pavement Association (NAPA) and the Federal Highway Administration (FHWA), nearly one-fifth of asphalt pavement is now produced by warm-mix methods. That is triple the amount of warm-mix tonnage produced in 2009.

Warm-mix asphalt (WMA) is an up-and-coming sustainable technology. A 2008 survey by the Ohio Department of Transportation suggests that warm-mix requires 14 percent less energy than hot-mix. It produces substantially fewer air emissions. It also allows for the incorporation of larger amounts of recycled material in the mix and extends the paving season.

WARM MIX ASPHALT USE – ALL MARKET SECTORS (OHIO)

<table>
<thead>
<tr>
<th>Year</th>
<th>2 mil</th>
<th>4 mil</th>
<th>6 mil</th>
<th>8 mil</th>
<th>10 mil</th>
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<tbody>
<tr>
<td>2009</td>
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<td>1,500,000</td>
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<td>2010</td>
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<td>7,600,000</td>
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<td>2011</td>
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<td></td>
<td>9,500,000</td>
</tr>
</tbody>
</table>

TONS OF WMA USED
Overall, for workers and people near highway construction sites, WMA is nicer to be around. By saving on energy, WMA gives taxpayers more road surface for the buck. And thanks to the reduction in energy use and air emissions, the environment benefits.

In an industry that has been aggressive in supporting sustainable technologies, Ohio ranks first in the region in using warm-mix. In 2011, it was 60 percent of the asphalt used on ODOT projects.

WMA is just one more reason that blacktop really is Green.
Celebrating 40 Years of Innovation

Resource International, Inc. celebrates its 40th year in business by continuing what sets them apart in the industry: Innovative services, techniques, methods and equipment.

With her two youngest children off at school, Farah B. Majidzadeh (Chairperson of the Board/Owner of Resource International, Inc.) wanted to take on a new challenge and was exploring many business opportunities. Her husband, Kamran Majidzadeh, a professor at The Ohio State University, was invited to present a paper at the Second International Conference on Pavement Design held in London, England in 1972. Farah attended the conference, and was fascinated by the new state-of-the-art, non-destructive and non-intrusive pavement testing technologies being developed in Europe at the time.

Upon return from the conference, Kamran had begun to do research on the first generation of a pavement testing equipment called Dynaflect and was exploring its application in road maintenance. He was keeping the new equipment in their home garage, and Farah decided she would like to market the product.

On her very own stationary, Farah sent out typed letters to various clients, hoping for one or two responses of interest. Just two weeks later, two clients expressed interest in the innovative equipment. With these contracts in tow, Farah quickly launched a small technology firm, Resource International, Inc. (Rii), from the basement of her family home with the unique capability of diagnosing the conditions of pavements.

Today, Rii is a broad-based, multi-disciplined, professional engineering consulting firm specializing in construction management, information technology, and planning and design of buildings and infrastructure projects valued in excess of $1 billion annually. The Columbus-based corporate headquarters and its branch offices throughout the Midwest employ more than 150 engineers and professionals, and list an impressive roster of projects for local and state government, K-12 and higher education institutions, transportation agencies, healthcare, sports and entertainment.

Rii started as a niche research and development firm, and has grown to a multi-million dollar company due to innovative techniques, methods and equipment. Some of Rii’s most notable innovative achievements in pavement technology are highlighted on the following page. For additional information, please visit www.resourceinternational.com.

“Resource International, Inc. was developed with the notion that innovation is everything, and that to succeed and prosper as a company, you must stay on top of the trends and latest technology. Innovation is our past and our future.”

- Farah Majidzadeh, CEO and Chairperson of the Board
A Leader in Innovation and Pavement Technology
A Look Back on Memorable Milestones in Rii’s 40 Years in Business

The First 20 Years (1970s - 1980s):
Development and Use of Non-Destructive Testing (NDT) Technology

Dynaflect – Since its inception in 1973, Rii has been a leader in both developing and utilizing innovative technologies. Rii was created by embracing first-generation non-destructive evaluation technology called Dynaflect, which utilized dynamic deflections to offer clients an insight into the performance, life and maintenance needs of roads. In 1973, Rii was awarded its first two contracts with the Delaware County Engineer’s Office and the City of Worthington, Ohio. Over the years, the deflection analysis software developed by Rii became a cornerstone of mechanistic pavement design programs. Today, Rii continues to use a new generation of non-destructive testing equipment in all pavement engineering projects.

Information Technology – As Rii continued to grow, it expanded its technology division with support staff strong in data analysis and research and development backgrounds. The new division engaged in numerous infrastructure projects to develop pavement management systems, pavement condition ratings and mechanistic pavement design software. Since then, the division has developed and installed a large number of pavement and maintenance management systems for notable clients including ODOT, Kingdom of Saudi Arabia and Ohio Turnpike Commission.

Waste Products / Sustainability – Rii was a pioneer in the study of asphaltic mixture using coal bottom ash, sulfur as an additive, glass fibers, ground rubber, rubber tire and polymer modified binders. Rii also designed the first rubber asphalt pavement, constructed in Belpre, Ohio. Today, Rii continues to be as committed to sustainable practices, as exemplified in Rii’s award-winning rubber asphalt pavement project in Colorado Springs, Colorado.

New Products and Processes – In the 1970s and 80s, under contract with industry and US DOT design guidelines, Rii developed the use of Geotextile fabrics for pavement rehabilitation. The guidelines used the fracture mechanic based “crack retardation concept” to design against reflection cracking. During this time, Rii also was engaged in the advancement of recycling technology worldwide. Rii passionately engaged in advancing the pavement recycling initiative, and designed/supervised the construction of the first Ohio pavement recycling project in Stark County.

1990s - Present: Quality Management

Integration of Project Delivery and Technology – In the past two decades, Rii has embraced new equipment and methods in its projects. The use of NDT methods in projects resulted in unimaginable efficiency and quality. Rii recently put these innovative techniques into practice while developing a master plan for 980 lane miles of pavement replacement and reconstruction on the Ohio Turnpike. Rii utilized state-of-the-art ground penetrating radar (GPR) equipment to produce the master plan in six months and at 10 percent of the original cost. Rii also uses GPR for analysis of bridge decks, pavement joints, concrete structure integrity, voids in mixtures, and pavement layer thickness measurement.

In addition, NDT methods are regularly used to provide intelligent compaction, quality management and performance based specifications. Rii also uses heavy weight deflectometer (HWD) testing, automated dynamic cone penetrometer (ADCP) testing, and light weight deflectometer (LWD) for quality control of global chemical soil stabilization.

Resource International, Inc.
6350 Presidential Gateway | Columbus, Ohio 43231 | p. 614.823.4949 | f. 614.823.4990
www.resourceinternational.com
Pavement-Type Selection

Minimum Cost vs. Multi-Attributes Model

By Kamran Majidzadeh, PhD, PE; Chhote Saraf, PhD, PE; & Laith Tashman, PhD, PMP

Resource International Inc.
6350 Presidential Gateway
Columbus, OH 43231

The pavement-type selection has been a topic of interest to practitioners as well as academicians since the availability of the two pavement types (flexible and rigid). In the early days, the issue of cost was not as important as the availability of the resources to construct the pavement. As the traffic loads and the site conditions became important factors, the engineering considerations dominated the selection process. Later on, it was considered technically appropriate to combine the desirable properties of the two types of pavements and the composite pavement was conceived. This pavement was anticipated to combine certain desirable properties of both types in order to address site and environmental conditions for some locations where both types of pavement were not expected to perform as good as the composite one.

The increase in construction material and labor costs, the development in the pavement design methodology and the innovation in field-compaction techniques and testing tools have made the issue of pavement-type selection a topic of intense debate. Recently, the rise of sustainability and green concepts coupled by the 2008 financial crisis and highway agencies’ budget constraints have created an even fiercer debate about the suitability of each pavement type.

Nowadays, several factors come into play on deciding which pavement type to use; including the concept of Life-cycle Cost Analysis (LCCA), which has become a dominant factor that determines the least cost-effective alternative for a specific design life. Although this concept has

These examples illustrate the application of this Selection of Pavement-type Integrated Concept (SPIC), as it accounts for several factors that are becoming important in the decision-making process for many highway agencies and the versatility of such approach to accommodate site-specific conditions.

Figure 1: SPIC - Untreated Subgrade.

Figure 2: SPIC - Stabilized Subgrade.
been considered appropriate in some situations, it has been criticized by many as cost-driven, lacking the influence of other factors that are becoming just as important.

Greenroads™ is one of the concepts that is catching the attention of many highway agencies. It sheds light on the importance of environmental impacts, innovation in construction practices and the pavement sustainability as important components of the roadway. The latter focuses on the longevity of the pavement and its ability to be sustained through the usage of recyclable materials and cost-effective and low-energy/low-emission construction practices. Nowadays, many highway agencies use recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) in their newly constructed flexible pavements to reduce the demand on raw materials. Warm Mix Asphalt (WMA) is widely used as a green construction practice, and some agencies are now adopting the Perpetual Pavement as a durable, low-maintenance-cost concept that is anticipated to contribute toward the longevity of the roadways.

In coping with these changes, Resource International Inc. (Rii) developed a Selection of Pavement-type Integrated Concept (SPIC) for a pavement replacement project. This integrated approach accounts for several factors in the decision-making process of selecting the pavement type, namely:

1. Life-Cycle Cost Analysis, which is subdivided into initial cost and maintenance (future) cost
2. Engineering, which includes subgrade strength and heavy vehicles traffic volume/loads
3. Ride, as a measure of smoothness and comfort
4. Noise
5. Sustainability, whereby existing pavement materials can be recycled and used in the re-constructed pavement

Each one of these factors was assigned a weight, and each type of pavement was assessed with respect to these factors by assigning a level to it (from 1 to 5). Level 1 has the least impact and Level 5 has the most impact on the selection of the pavement-type alternative. The combined impact of all the factors was determined by a number called “Score,” which was defined as follows:

\[ \text{Score} = \sum \text{Factor Weight} \times \text{Level} \]

After assigning proper levels to each factor, the total score for each alternative was determined. Figure 1 shows a comparative analysis for a case study where the subgrade had a CBR value of 4. The same comparative analysis was performed for the same case study, only this time using stabilized subgrade as shown in Figure 2.

It is noteworthy that the factor weight and the level of impact for each factor can be appropriately adjusted for the specific site conditions and agency’s interests. Hence, a pavement type that might rank high for one site condition might rank low on another. For example, if the CBR of a subgrade is less than 5, the impact of this factor on the selection of flexible pavement alternative will be less than when the CBR is relatively higher. Similarly, the effect of heavy vehicle traffic volume and axle loads can be adjusted according to the site conditions.
Welcome New Members

Flexible Pavements of Ohio would like to welcome the following companies as new members of the association.

**Producer Member:**
Holmes Supply Corp./Melway Paving Co. Inc., Holmesville
Holmes Supply Corp./Melway Paving Co. Inc. is an asphalt producer and contractor that has been operating in Ohio since 1964.

**Contractor Member:**
Geddis Paving and Excavating Inc., Toledo
Geddis Paving and Excavating Inc. is a complete site development and asphalt paving contractor that has been operating in Northwest Ohio for more than 60 years.

Mark Your Calendars

**Mid-Year Asphalt Pavement Technical Seminar,**
**July 18, 2013**
University Plaza Hotel and Conference Center
3110 Olentangy River Rd. • Columbus, Ohio 43202

Flexible Pavements of Ohio (FPO) is pleased to present the 2013 Mid-Year Asphalt Pavement Technical Seminar. This seminar will provide practical information on specifying asphalt pavements for local roads, streets, driveways and parking lots. If you construct, inspect, manage or maintain local or private transportation infrastructure this seminar has the information you need to ensure a successful, long-lasting asphalt pavement.

For more information and to register for this event, visit FPO’s website at www.flexiblepavements.org.

**Ohio Transportation Engineering Conference,**
**Oct. 22-23, 2013**
Columbus Convention Center
400 North High St. • Columbus, Ohio 43215

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The theme of the 2014 Ohio Transportation Engineering Conference (OTEC) is “Managing the Assets: Priorities, Partnerships & Performance.” The two-day event focuses on performance-based measurements to create priorities that maximize the return on our transportation investment.

FPO is organizing an Asphalt Technology session on Tuesday, October 22. Visit the OTEC website at www.dot.state.oh.us/engineering/OTEC/Pages/default.aspx for up-to-date registration and conference information as well as archived material from previous conferences.

Ohio Asphalt Paving Conference, Feb. 5, 2014
The Fawcett Center
The Ohio State University
2400 Olentangy River Rd.
Columbus, Ohio 43210

The Ohio Asphalt Paving Conference is a collaborative effort of state and local government, academia and the asphalt industry to present practical, usable technologies and strategies for the design and construction of asphalt pavements.

2014 Ohio Asphalt Expo,
March 25-26, 2014
Columbus/Polaris Hilton Hotel
8700 Lyra Dr. • Columbus, Ohio, 43240

The Asphalt Expo is Ohio’s premiere asphalt pavement event with multiple concurrent educational sessions and an indoor and outdoor trade show and exhibition. If you construct, inspect, manage or maintain local or private transportation infrastructure, the Ohio Asphalt Expo has the information you need to ensure a successful, long-lasting asphalt pavement.

For more information as it becomes available, visit FPO’s website at www.flexiblepavements.org.

C. Clark Street passed away June 15 at the age of 82. Street was born on April 7, 1931, in St. Clairsville and graduated from Case Western Reserve in 1953 with a degree in Civil Engineering. A veteran of the U.S. Army, Street served as both a district deputy director and assistant director of the Ohio Department of Transportation. The executive director of the Ohio Contractors Association for 24 years, Street was extremely dedicated to the heavy-highway construction industry and the betterment of Ohio’s transportation infrastructure.

Flexible Pavements of Ohio staff and members extend their sympathy to the family and many friends of Clark Street.
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