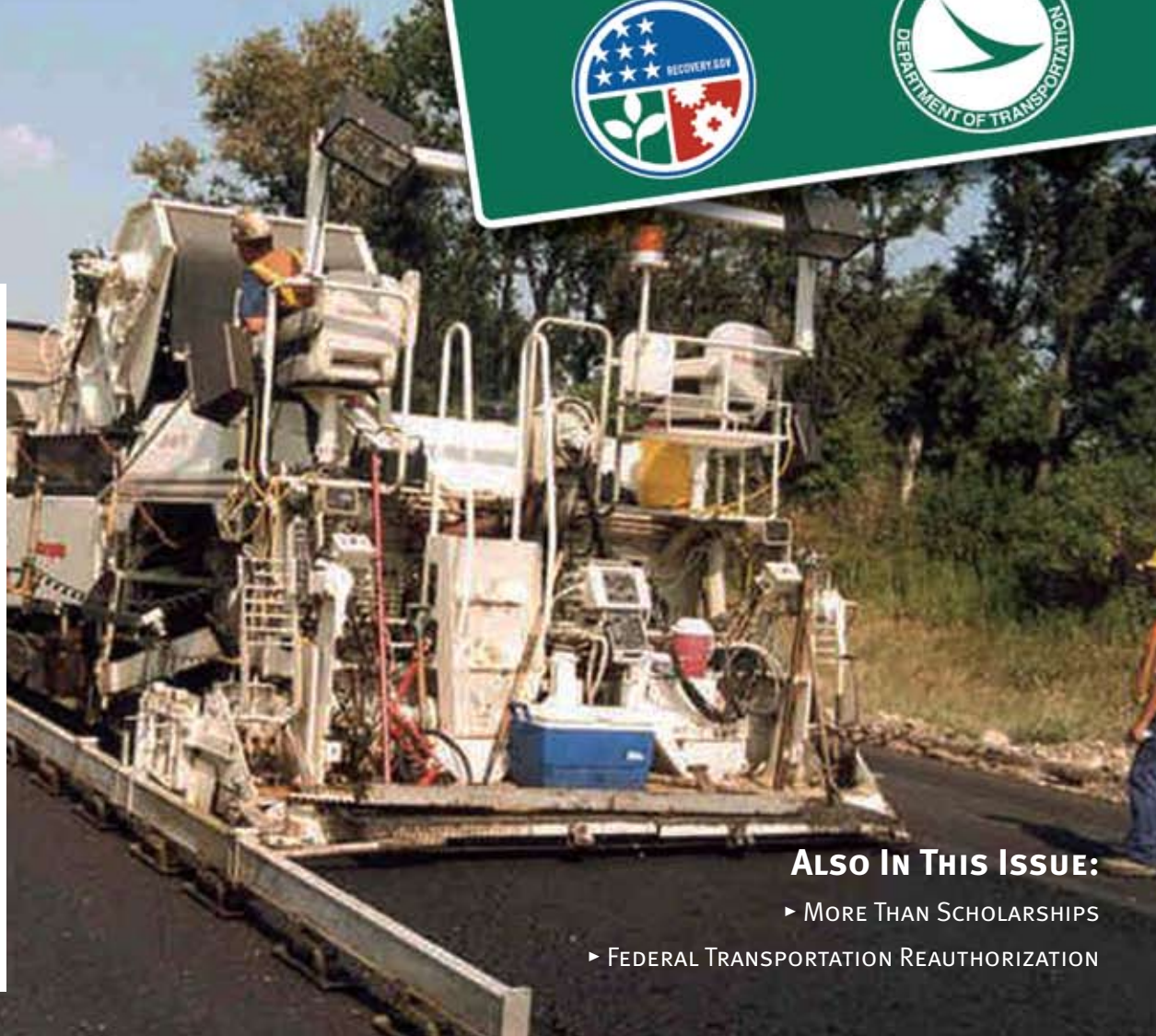


OHIO ASPHALT

ISSUE 3 VOLUME 6 SUMMER/FALL 2009

WIN THE WAR ON CRACKS— *Specify Deep-Strength Asphalt Bases*



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ALSO IN THIS ISSUE:

- MORE THAN SCHOLARSHIPS
- FEDERAL TRANSPORTATION REAUTHORIZATION

48TH ANNUAL MEETING AND AWARDS BANQUET

The Flexible Pavements of Ohio's (FPO) 48th Annual Meeting and Awards Banquet, Feb. 16, 2010 in Cincinnati, will coincide with the 2010 World of Asphalt (WoA) Show and Conference.

FPO is combining its Annual Meeting and Equipment Exhibition with the WoA for this special visit to Ohio. The FPO Annual Meeting and Awards Banquet will be held the evening of February 16th at 6 p.m. at the Cincinnati Convention Center. Registration for the FPO event will be through the WoA registration process.

Use the WoA hotel room block for your lodging.

Register online at: <http://www.worldofasphalt.com/ShowInfo/Attendees/Reg/index.asp>



February 16-18, 2010
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2010 Annual Meeting
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Flexible Pavements of Ohio is an association for the development, improvement and advancement of quality asphalt pavement construction.

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Kerry Kicos

Editorial Staff
Jerry Marks

Ad Sales & Editorial Preparation
TRIAD, Inc.
371 County Line Road West
Westerville, OH 43082
614.846.8761 or 1.800.288.7423
fax: 614.846.8763
editorial e-mail:
editorial@triad-inc.com
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ASPHALT PAVEMENTS WILL PLAY A LARGE ROLE IN SUSTAINING ECONOMIC RECOVERY; THAT'S BECAUSE ASPHALT PAVEMENTS DO MORE THAN JUST CREATE OPPORTUNITY FOR QUICK EMPLOYMENT. ASPHALT PAVEMENTS WILL SUSTAIN A RECOVERY BECAUSE THEY ARE EFFICIENT AND PROVIDE AN EFFICIENT MEANS OF TRANSPORTATION.

'RECOVERY AT WORK'

It's begun. We have embarked upon a road named RECOVERY. The letting of project 091000 on June 3rd began the flow of "stimulus" funds into Ohio's economy. Long known for stimulating good paying, quality employment, transportation will lead the way in nurturing back to health our state's ailing economy. To an industry suffering some of the worst employment declines, the infusion of stimulus dollars provides a glimmer of hope.

THE ROAD TO RECOVERY IS PAVED WITH ASPHALT

OK, that's a cute little subtitle, I'll admit it. But the reality is that the road to recovery truly is paved with asphalt. An analysis of the 200-plus American Recovery and Reinvestment Act (ARRA) projects being let to contract in Ohio indicates that asphalt will play a significant role in putting Ohioans back to work and getting the ball rolling to recovery. Asphalt has long been known and utilized as a stimulus, and it's obvious that those in the know are again calling upon asphalt to play a part in the economic recovery. The fact that asphalt can be placed quickly and requires not much more of a plan than an engineering concept scripted onto a brown lunch sack, makes for an efficient way of getting dollars flowing and people bringing home paychecks. But as we all recognize, asphalt provides much, much more than a paycheck.

You've heard the saying that hindsight is 20/20. We only need to look to the past to see how asphalt has proven itself over and over again as an efficient use of infused dollars to improve the highway sector of the state's overall transportation system. The truism that asphalt pavement lasts far beyond its expected performance life, and much longer than its counterpart concrete pavement, is as true today as when

that comparison was made in a study of Ohio's Interstate System by former Ohio Department of Transportation Interstate Pavements Engineer Willis Gibboney, and confirmed by studies in Kansas, Iowa, Washington state and Maryland. Now with the advent of Perpetual Pavement those same asphalt pavements, as well as any other existing asphalt pavement, can be bolstered to a level of performance that will last a lifetime. As well, when we consider asphalt for its capability as a maintenance material, it is superior to any other out there. Those aren't just idle words; they are words confirmed by studies that have demonstrated that asphalt pavements provided the lowest cost and the highest benefit over its lifecycle; better even than micro-surfacing and chip-sealing. And all of that is very important when we concern ourselves with sustaining an economic recovery.

ASPHALT'S ROLE IN A SUSTAINED RECOVERY

Asphalt pavements will play a large role in sustaining economic recovery; that's because asphalt pavements do more than just create opportunity for quick employment. Asphalt pavements will sustain a recovery because they are efficient and provide an efficient means of transportation. Asphalt pavements are in-and-of-themselves efficient. They are a resource comprised in a substantial part of materials that can be used over and over again — saving millions of dollars. When you consider that just in Ohio enough asphalt is recycled on a yearly basis to pave from Columbus to Los Angeles, that amounts to a mountain of savings; and that savings is measured in more than dollars and cents, it's measured in natural resources preserved, it's measured in hauling costs saved, it's measured in energy independence and so on it goes.



Partnering on the Road to Recovery, (from right) National Asphalt Pavement Association President Mike Acott, ODOT Director Jolene Molitoris, FPO President and Executive Director Cliff Ursich and FPO Director of Engineering William Fair discuss how the asphalt industry's Perpetual Pavement, Warm Mix Asphalt and other sustainable attributes can help Ohio on its road to economic recovery.

Asphalt's role in a sustained recovery is also seen in its providing an efficient means of transportation. The most recognized attribute of asphalt pavement is the speed by which it can be constructed. Years ago the Federal Highway Administration (FHWA) pushed the idea of "Get In, Get Out and Stay Out!" The message being that transportation projects should result in quality construction that is long lasting, but yet expediently performed; clearly an effort to address the incessant obstruction to traffic flow that some poorly constructed projects cause. FHWA pushed a sound message that continues to resound in this needful time for sustaining economic recovery. Unobstructed highways are a necessary ingredient to sustained recovery. For any system to be healthy, be it a nation's economy or our very human bodies, the arteries must flow freely. When one looks at a transportation map of the United States, it's clear that highways comprise the lion's share of responsibility in assuring the lifeblood of our economy keeps flowing. And since asphalt pavements cover 94 percent of that system, agencies across the country are counting on asphalt's attributes to keep America on the Road to Recovery.

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BEST PRACTICES FOR COMMERCIAL PAVING

Ohio Asphalt will be exploring the best practices needed to attain high-quality pavement placed in commercial applications. Our guest writer for the series is Scott McLean, vice president of The McLean Company. The McLean Company, headquartered in Hudson and with branch offices in Cincinnati and Columbus, is an asphalt equipment dealer serving contractors in Ohio and surrounding states. Founded in 1948, The McLean Company for three generations has provided customers with knowledgeable applications assistance and customer sales support.

The principles we'll discuss in this series are those all pavers employ on a daily basis; the difference being the commercial paver must employ them more rigorously as he faces the challenge of sculpting pavement to meet — in some cases — extreme geometric and grade constraints.

Because commercial paving can be so challenging, having a good understanding of the principles of quality construction and utilizing best practices are necessary in getting an award-winning job. To improve your success at helping your customer be successful with asphalt we'll be covering the following topics:

- ☑ Project Planning
- ☑ Understanding the Paver
- ☑ Tack Coating
- ☑ Site Preparation
- ☑ Leveling the Screed
- ☑ Mat Quality
- ☑ Screed Types
- ☑ Compaction
- ☑ Clean-up and Transport

PROJECT PLANNING



by Scott McLean, The McLean Company

"Successful" asphalt paving projects come about because someone planned to make the job successful. Someone in a role of responsibility took the necessary time to consider all the factors involved in the project and planned how the execution would take place. As the old adage goes . . . if you fail to plan then you plan to fail.

A critical factor in any plan is understanding the role of uniformity in attaining a quality paving project. Uniformity is all-encompassing, governing material handling, manufacturing procedures and pavement construction. In relation to placing an asphalt mixture, attaining a uniform pavement texture and consistent smoothness depends upon the uniformity of the distribution of the forces against the paving screed as it is pulled into the paving mix. A uniform distribution of forces, in turn, requires maintaining a uniform head of material in front of the screed; and so it goes up the line to include the need for uniform mix composition and temperature, a steady supply of mix delivered to the project, and an assurance that raw materials fed into the manufacturing process are likewise uniform.

Uniform compactive effort too is essential to pavement quality. For uniformly graded (aka dense-graded) mixes, a critical component to assuring pavement longevity is the attainment of pavement density. An issue that we will discuss in greater detail another time, compaction increases pavement density, reduces permeability, slows oxidation, retards disintegration and results in longer pavement life. To attain uniform density, uniform-compactive effort must be applied. Project planning ensures the capacity of the rollers to compact the mat is sufficient for the rate of asphalt mix being delivered and placed; essentially balancing asphalt production with the capacity of the rollers to thoroughly and efficiently compact the asphalt mixture.

Balancing production with compaction requires you to consider and plan for the many variables that could make an impact. Beyond roller capacity, haul vehicle availability, length of haul, traffic congestion and plant scheduling are factors that could dominate the balancing process. Again, the purpose of our planning is to assure the uniform placement and compaction of mix.

Obviously, correctly functioning equipment – the capabilities of which are understood by the workers – is critical to a project's success.

THE PAVER

Starting with the paver, its role is to meet specifications for grade, texture and smoothness. In Ohio, most specifications reference Ohio Department of Transportation (ODOT) Item 401.12, which calls for spreading equipment to be sufficiently sized, powerful and stable enough to meet the contract provisions for placing a smooth mat. To accomplish such, "automatics" are required; that is, systems that maintain the screed in a constant position relative to profile and cross-slope references. As such, project planning necessitates a contractor ensures all grade-sensing equipment and automatic flow-controlling devices are in proper working order. We'll talk in greater depth about grade controls when we discuss the topic: "Understanding the Paver." In recent years, the use of base course mixes having large top-size aggregate – such as ODOT Item 302 – has demonstrated the need for pavers to be equipped to mitigate paver-induced segregation. Contractors having commercial projects incorporating such mixes should ensure their equipment is properly equipped.



Successful project planning will ensure the necessary hardware is on the job to get the best quality project. Project layout will dictate width of pulls that most efficiently and effectively accomplish the task. That means both having and utilizing screed and auger extensions correctly. Seems mindless, but some don't realize the effect that poorly adjusted screed extensions and failure to utilize auger extensions have on mat smoothness and texture. Correctly adjusted screed extensions will not exhibit any difference in surface texture. Not utilizing auger extensions will result in flooding the main screed in an effort to get sufficient material to the wings. This negatively affects pavement smoothness and density.



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How the contractor sets up the job impacts quality and efficiency. Understanding how best to lay out a project comes with experience. Consider this sage advice from Bill Snoke, a 40-year veteran paving foreman for Decker Construction, in Columbus: "First, understand that every job is different. You have to study the lay of the land and develop a plan. Get the 'tough stuff' (difficult geometrics) out of the way first, being conscious of your trucking costs. Paving the tough stuff first will result in some low production, so you don't want a lot of trucks lining up with their hour meters running. Though production early on may be low, you're getting the difficult geometrics out of the way, which sets you up for some very productive paving days. Plan for high-production days, making sure that you have a sufficient number of trucks and the asphalt plant knows your needs. Lay out the project to minimize joints by maximizing length and width of pulls. Don't pull widths greater than 12 feet. Paver wear and

lack of screed extension support can cause screed sag, potentially creating an invert. You do not want that! If pulling transverse to the pavement grade, pave from the low side first. Set up to maximize the number of straight pulls, maximizing potential for good longitudinal joint construction. Consider haul vehicle accessibility — keeping them off the newly placed pavement. If possible, try to pull in the direction traffic will flow; you get a better ride. Paving the direction of traffic won't always be the longest pull, so you have to consider how it will impact productivity. Customers like sandy mixes, and defects are not acceptable. Paving practices and handwork need to ensure there are no defects or blemishes. To get a quality

paving job it takes a sufficient size crew (six-person crew plus a foreman) who is knowledgeable and committed to getting the job done right."

Perhaps it goes without saying, but planning a successful project requires careful evaluation and understanding of specification requirements. While 98 percent of paving projects are the same, the other 2 percent can make the difference between costly corrective work, reduced pay and lost customer satisfaction. "Close enough" only counts when playing horseshoes and hand grenades. Whenever corrective work becomes necessary it never looks as good had the pavement been placed correctly the first time, and customers always end up feeling like they received "second-best." Customer satisfaction means getting it right the first time, and accomplishing that requires complete understanding of project specifications and requirements.

Communication is extremely critical. All parties must have an understanding of the project requirements and their role in accomplishing the requirements. All parties include those persons involved in manufacturing the asphalt mix, quality-control personnel, the paving crew and roller operators. In your company, is it only the estimator who knows what the project requirements are? Is his/her knowledge communicated to those involved in manufacturing, placing and compacting the material? Ask yourself, "What is our company doing to ensure that all crew members know their individual responsibilities in meeting the objectives for each of our projects?" Your people just showing up on the job and doing the same thing they've always done — irrespective of the type of project — indicates a communication breakdown that will likely evidence itself in lost profitability and market share.

STRATEGY

As with successful ventures so is it with attaining quality asphalt construction. Strategy is necessary to ensure the progress of the work goes smoothly. A case study that demonstrates this truism involves the implementation of the ODOT Smoothness Specification. Years ago, the first asphalt project let to contract using the smoothness specification required a two-course overlay on a very rough concrete pavement having an average roughness of about 50 inches per mile (as measured by the California profile method) — a ROUGH RIDE! That roughness was reduced to just about 3 inches per mile — a VERY SMOOTH RIDE! Wow! How did that happen you ask? It happened by employing a strategy. Unlike previous projects, this contractor developed a plan and ensured that everyone involved was onboard. This project would be constructed differently. All equipment would be verified to ensure full-functioning capability; raw material procurement and mixture production would be monitored closely by QC personnel; paving would proceed as long as necessary to avoid cold transverse joints — making for some workdays longer than usual while others shorter; material delivery would be balanced to the compaction equipment's capability, and compaction would be monitored to ensure density requirements were met. The resulting quality was the highest that could be attained by Shelly & Sands Inc. — the very successful contractor. This case study, though it involves a highway job rather than a commercial parking facility, clearly demonstrates the effectiveness of project planning.

In subsequent issues of *Ohio Asphalt*, we'll dig deeper into what it takes to successfully construct a quality commercial paving job.



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WIN THE WAR ON CRACKS—

Specify Deep-Strength Asphalt Bases



Vic Roberts, P.E.

After graduating from the University of Cincinnati in 1978, Vic began his career as the Englewood City Engineer. He developed a regional reputation for home-brewed asphalt mixes combining latex rubber and polyester fibers. In 1999, Vic switched from the public sector to the private sector, working for R.B. Jergens Contractors Inc., a Vandalia-based heavy highway and environmental construction company. He is currently a vice president and enjoys a unique public-private perspective. Known for his innovation and passion, Vic believes in doing a job right the first time and doing so using high-quality construction practices and materials. That means building pavements with asphalt to ensure optimum performance and cost efficiency. In this issue of Ohio Asphalt, Vic broaches the subject of reflection crack control. We hope you enjoy his very enthusiastic and informative article written by a person who has experienced it first-hand. Vic will be teaming with international consultant Jim Scherocman in future issues to present in-depth articles about deep-strength and full-depth asphalt design and performance.

by Vic Roberts, P.E., R.B. Jergens Contractors Inc.

I'll provide a sure-fired crack prevention plan that all specifiers, and especially government specifiers, should follow. The plan is simple: Specify and invest in pavements that use asphalt from top to bottom. I'm going to share with you the challenges I had as a city engineer trying to maintain pavements, and doing so without breaking the bank. I'll let you know how we (quite successfully) addressed reflection cracking caused from concrete streets, and I'm going to explain why I feel asphalt surfaced pavements constructed over asphalt bases are the best way to go to ensure good performance, with low maintenance and low cost.

CRACKS SPELL FAILURE

As Englewood City Engineer, I spent more than two decades fighting cracks. And I lost. But in fairness, during Englewood's grueling crack-killing campaign, we (at least) did defeat potholes. Englewood hasn't seen a pothole in more than two decades. Priority street budgeting fought off the potholes. And a parade of resurfacing programs — year-after-year — continues that tradition. But those pesky reflective cracks still haunt the city. By the term "reflective" cracks, I mean cracks in an asphalt overlay which reflects the crack pattern in the underlying pavement.

Smoothseal's ambassador, City Manager Eric Smith guards Englewood's near-perfect street system with proud vigilance. And more than 80 percent of Englewood's streets are coated with the velvety smooth Ohio Department of Transportation (ODOT) Item 424 Smoothseal (Type B, applied at ¾-inch thickness). Yet the crack-killing campaign still challenges. Last year, the city began experimenting with a Smoothseal-Geosynthetic system wherein a geosynthetic fabric is glued-down below the Smoothseal. Englewood hopes that this system will smother cracks. Yet complete success seems far from certain. The reason is, because in the war on cracks the battlefield is not on top — it's on the bottom.

The Oregon Department of Transportation published a July 2007 report titled *Geosynthetic Materials In Reflective Crack Prevention*. Oregon's study evaluated geosynthetic fabrics placed just below asphalt resurfacing. The report concludes that geosynthetics materials performed poorly in cold weather. The report adds, "This finding is consistent with other studies across the U.S. that concludes geosynthetic materials perform best in warm and mild climates (Cleveland, et. Al. 2002)."

I'm a big advocate of geosynthetics, which I believe are good crack fighters when used on the bottom; Oregon put its on top. Under load, pavement surfaces compress, but the bottom side is in tension. This is an important principle. Try this test: lay a piece of paper on a table, now push both sides inwardly, compressing the paper. It's easy to

see that paper can't resist compression because it curls in the middle. Now, pull both sides outwardly, putting the paper in tension. See the difference? Fabric works great in tension — but poorly in compression. It's the tensile tug-of-war that triggers crack propagation. And that's why reflection cracks start from the bottom and work their way to the top.

COMPOSITE PAVEMENTS ARE TIME BOMBS

A concrete base with a flexible asphalt surface is a "composite pavement."

It's also a time-bomb.

Brittle, concrete bases eventually snap.

Reflective cracks quickly announce this failure, which are often accompanied by a staccato-riding surface.

All concrete pavements have crack-reflecting joints. Sure, subsequent asphalt resurfacing will block the cracks, but only for a while.

As a rule of thumb, each inch of asphalt resurfacing buys one year of crack blocking. Deep-strength asphalt bases are crack-free — and they stay that way.



Reflection cracking is evident in this two-year old, 1 1/4 -inch overlay placed on roller compacted concrete (RCC) base.

Our company has rebuilt failed concrete bases, followed by placing hot-mix asphalt surfacing. The result is an economical temporary repair — but the repair is always accompanied by time bomb reflective cracks. Public agencies make this repair choice because they're stuck. Starting over and removing failed concrete pavement is just too costly — so a compromise is made. Specify deep-strength asphalt bases at the outset, and you won't get stuck.

FORMULATING A STRATEGY TO FIGHT REFLECTION CRACKING

As a city engineer, I was stuck with two failed concrete streets. Fortunately, they were low-volume residential streets. The joints had deteriorated badly, so we decided to overlay the streets with hot mix asphalt to kill all the faults. We knew the rigid cracks would fight-back hard, so we devised a crafty plan.

First, in June, we filled all the joints and gaps with special, homemade crack filler. The city manager called the home-brew Roberts' Recipe. He named it after a local samurai crack fighter. Roberts' Recipe combined asphalt cement, SBR latex (furnished by Rub-R-Road's Pat Welsh), polyester fibers and Gilsonite. This is the best crack sealer in the world. The local samurai should have patented it.

Next, we used Roberts' Recipe to glue-down 12-inch-wide strips of Fiber-Pave, which is a rubberized membrane that is sandwiched between two layers of polyester fabric. We glued the Fiber-Pave directly over the joints. By the way, polyester fibers won't melt (safe to 425 degrees F). Now, up to this point all crack-fighting work was performed in-house by the legendary city forces. This allowed us time to let the Roberts' Recipe oxidize in the hot summer sun for two months. Don't worry, Roberts' Recipe will not track! The SBR latex completely changes asphalt cement's chemistry and physical properties. But fresh crack sealant, even the world's best, will sometimes boil-through the hot mix overlay. The hot summer sun will reliably age-harden and cure asphalt-cement sealants.

In September, we installed a 1½-inch intermediate leveling course using 448 Type 2, PG 64-22 (today's terminology). Then we installed a 2-inch-thick Type I surface course modified with more Rub-R-Road SBR latex and polyester fibers. In 1994, modifying hot mix was also a home-brew deal. But today, I'd use ODOT's excellent Type 1H surface mix, but with the standard PG 70-22 binder bumped to PG 76-22. So how do those two composite streets look today?



Reflection crack treatment using Fiber-Pave, a rubberized membrane sandwiched between two layers of polyester fabric and glued to pavement with "Robert's Recipe."

After 15 years, they look amazing! Englewood had a thin layer of Smoothseal added last year, and just a few tiny cracks returned. This system will work for you too — certainly on residential streets. But heavy truck traffic may cause the system to fail. Heavy trucks can "rock" concrete slabs, particularly if the underlying sub-grade is soft, allowing vertical movement at joints. Slab cracks, of course, will quickly reflect through an asphalt overlay. And as if that weren't enough, poor load transfer between slab sections only quicken reflection cracking — this is the enemy's biggest artillery.

AVOIDING CRACKS FROM THE START

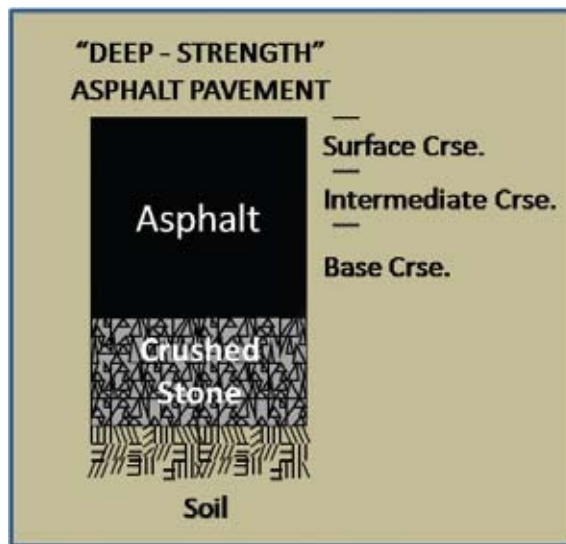
History has demonstrated that asphalt pavements constructed using asphalt bases have provided the best performance and least cost when compared to concrete and composite pavements. This was confirmed most notably by a study conducted by former ODOT Interstate Pavement Engineer Willis Gibboney, P.E., in his landmark work evaluating Ohio's contiguous asphalt and concrete pavements on the Interstate system. The asphalt

pavements in the study had underlying asphalt bases placed on aggregate base (i.e. Deep-Strength Asphalt Pavement). That work concluded that the asphalt pavements, unlike their concrete and composite pavement counterparts, continued to provide reliable service without the need for reconstruction. And they had lower initial construction cost and lower maintenance cost. Though the asphalt pavements were not entirely crack free, cracks had little to no impact on ride quality, as measured by Present Serviceability Index (PSI). So why the stellar performance?

In recent years, much effort has been invested in determining why mature asphalt pavements such as those on Ohio's Interstate system have performed far beyond engineers' expectations. The outcome of this investigation is the basis for the Perpetual Pavement concept; a pavement-thickness-design concept that espouses maintaining low-strain levels at the bottom of asphalt pavement bases to stop crack initiation. Perpetual Pavements are designed to last more than 50 years without needing major reconstruction.

Jim Scherocman, an internationally distinguished pavement consultant, points to soft sub-grade as the major enemy in our war against cracks. "Since a large portion of the country consists of sub-grade soils that are clays or silty clays, the primary problem with pavement structure strength is not water coming from the top down — but instead, water coming from the bottom up. It's like trying to fix a leaky roof on a house when the foundation is crumbling," he said.

Microscopic, foundation-crumbling clay particles are flat. And when they get wet, they slide like tiny ball bearings. Then the wet sub-grade deflects, causing the pavement to bend too. Next, tensile forces crest and the crack starts. Once started, the crack chisels its way to the top like a slow-motion laser beam. Only asphalt pavements constructed using asphalt bases can reliably bridle teeming tensile forces by controlling strain. I wish somebody



would have explained this to me during my days as city engineer.

The recent editorial by FPO President & Executive Director Cliff Ursich in the Winter 2009 issue of *Ohio Asphalt* emphasized that only deep-strength asphalt pavements have consistently demonstrated the ability to last a lifetime, thereby leaving an inheritance to our children's children. Public agencies need to grasp this philosophy — and it is just that — a philosophy. But it's a philosophy backed by experience.

R.B. Jergens built an interesting project in Cincinnati this year; it had wet sub-grade problems. The fat A-6 and A-7 silty-clay soils had a 15-percent optimum moisture

content (for compaction). Yet, the plastic limit was just 18 percent. So, just a small bump in moisture would turn the sub-grade from stable to plastic. And that's what happened. Unusually high summer precipitation plunged the sub-grade into the plastic zone. ODOT's Chris Tuminiello directed undercutting, and stabilizing to successfully bridge the soft soils. But more importantly, the project used 11 inches of hot mix over 6 inches of aggregate base. Yet, as this real-life example shows, even with difficult soils, ODOT's asphalt pavement design (which utilizes asphalt base for a "Deep-Strength" asphalt design) will last a lifetime. Deep-strength asphalt pavement is actually a life insurance policy, especially facing clay soils that will eventually get wet. And don't think sub-drains will reliably dry-up wet sub-grade.

My college textbook warns that: "... *sub-drains are not effective in impermeable soils, which water flows very slowly, such as those classified in the A-4 to A-7 ranges. Neither will they remove moisture already in such soils.*" Ohio predominately has cohesive clay soils. So don't put too much faith in under-drains sucking-out bottom-up water. Instead, specify something that you can rely on. Specify something that won't trap the next generation. Specify low strain, asphalt pavements having asphalt bases for reliable performance that you can count on.





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MORE THAN SCHOLARSHIPS

FPO Program Celebrates Students, Schools, Members, Quality

There can be no greater goal for an organization than to help nurture the next generation of professionals. Flexible Pavements of Ohio (FPO) has fostered this attitude for the past 14 years through the FPO Hot Mix Asphalt Scholarship Program.

As it did in 1995, the 2009 FPO Hot Mix Asphalt Scholarship Program not only features college students who will be tomorrow's industry leaders, but also highlights the Ohio colleges offering coursework in flexible pavements technology through their civil engineering and construction management programs.

The association's 2009 scholarship program is assisting 25 students at five institutions. Awarded during FPO's Annual Meeting, Equipment Expo and Trade Show, held March 30-31, were 13 individual \$1,000 scholarships, the \$1,500 FPO Graduate Scholarship, the Dine Comply Inc. \$1,000 Asphalt Scholarship for Environmental Studies, and the \$1,000 Mixture Design Competition Scholarship sponsored by Erie Blacktop Inc. The scholarships will be used for the 2009-2010 academic year.

This year's \$18,500 in scholarships brings the program's 14-year total amount to \$347,000 awarded to 283 individuals. "FPO is proud to continue the scholarship program began by its former Executive Director Fred Frecker. The member companies' continuing commitment to his vision is highlighted by this year's additional contributions," FPO President and Executive Director Cliff Ursich said.

SEE THE 2009-2010 FPO SCHOLARSHIP RECIPIENTS ON THE FOLLOWING PAGE.



2009
ASPHALT
SCHOLARSHIP
AWARDS

2009-2010 FPO Hot Mix Asphalt Scholarship Recipients

FOUR GOALS IN 1995 HAS RESULTED IN \$347,000 WORTH OF SCHOLARSHIPS

The FPO Hot Mix Asphalt Scholarship Program began in 1995 with four goals, which have been fulfilled but continue to drive the program's success. Here were the program's initial objectives:

- Provide an incentive for students to gain knowledge in hot mix asphalt by requiring each scholarship recipient to take at least one course in hot mix asphalt
- Provide an incentive for colleges/universities to offer training in hot mix asphalt by creating a student demand for the course
- Establish close ties between the asphalt industry and universities, to raise the awareness of hot mix asphalt in the academic community and foster HMA-related research
- Provide a workforce trained in asphalt technology

The FPO HMA Scholarship Program is administered through the National Research and Education Foundation of the National Asphalt Pavement Association.

Barrett Paving Materials Inc.



Ellen Baumann
U. OF AKRON

Dine Comply Inc.



Bernadette Wiggin
BOWLING GREEN STATE U.

Erie Blacktop Inc.



Erie Biehl
OHIO U.

Erie Blacktop Inc.



Brett Porter
OHIO U.

Erie Blacktop Inc.



Farid Momand
OHIO U.

Erie Blacktop Inc.



Waleed Hakim
OHIO U.

Flexible Pavements of Ohio



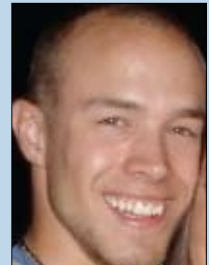
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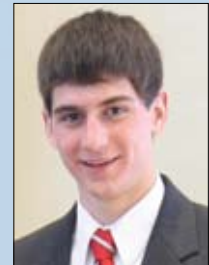
Justin Stone
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Dominic Brigano
OHIO STATE U.

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Daniel Woodward
OHIO STATE U.

THE ERIE BLACKTOP MIXTURE DESIGN COMPETITION

The Erie Blacktop Mixture Design Competition Award provides \$1,000 to the winning school's Civil Engineering Department and \$1,000 divided among the student members of the annual competition's winning team.

The Erie Blacktop Inc. Mixture Design Competition winner was the team from Ohio University, which was comprised of Eric Biehl, Brett Porter, Farid Momand and Waleed Hakim, and team advisor Sang-Soo Kim, Ph.D.



The Erie Blacktop Mixture Design Competition Award was presented by Larren Wikel, Erie Blacktop (left) to Ohio University's Eric Biehl and Team Advisor Sang-Soo Kim.

Special thanks to the Shelly Company that provided materials and advice to all the teams.

THANKS TO OUR SUPPORTERS

Because of the decline in invested values in 2008, FPO member companies have made special contributions to fund scholarships for this year and to prevent further erosion of the scholarship endowments. Special thanks to the following FPO member companies: Barrett Paving Materials Inc.; the Burgett Family and Kokosing Construction Company Inc.; Erie Blacktop Inc.; Gerken Paving Inc.; John R. Jurgensen Co./Valley Asphalt; M&B Asphalt Co. Inc.; Northstar Asphalt Inc.; Shelly & Sands Inc.; The Shelly Company; and Dine Comply Inc.



FEDERAL TRANSPORTATION REAUTHORIZATION

The current federal aid highway act, SAFETEA-LU, is due to expire at the end of September (2009). The debate on re-authorization is continuing in U.S. Congress and with the Obama Administration.

A bill pending in the U.S. House of Representatives would reauthorize the transportation programs for another six-year period with increased funding. This would give states long-term planning stability; but would require additional revenue to support the increased level of funding. The Administration has proposed a simple 18-month extension of the current bill at existing funding levels. This would defer the debate over increased revenue until after the next Congressional elections. The Senate seems inclined to go along with the President's extension.

The big problem behind all of this is the insolvency of the Highway Trust Fund. Revenues (gas and excise taxes) have not been sufficient to fund the level of authorizations since about 2006. The obvious fix is to raise the gas tax; but with the volatility in gas prices and the economic recession, Congress has been unwilling to tackle the issue.

Flexible Pavements of Ohio and other highway-related associations joined the Transportation Construction Coalition (TCC) in visiting our Congressional delegation in Washington, D.C., on May 19-20, to deliver the message that "Transportation Builds Our Economy," and to urge support for increased transportation funding. While most of our conversations with Senators and Representatives were not encouraging, we were impressed with the efforts by Rep. James Oberstar (Minnesota), who chairs the House Transportation and Infrastructure Committee, in pushing for another six-year reauthorization with increased funding. Most members of Congress acknowledge that there is a vast need for increased investment in our highways (see the letter from Sen. Voinovich). While the proposed bill contains many provisions to be disliked by highway interests, it probably represents the only chance for a timely, multi-year reauthorization of transportation programs with increased funding this year.



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THE FEDERAL WORKFORCE, AND
THE DISTRICT OF COLUMBIA

July 9, 2009

Mr. Clifford Ursich
Flexible Pavements of Ohio
525 Metro Place North Suite 101
Dublin, Ohio 43017

Dear Clifford:

Thank-you-for contacting me regarding the federal surface transportation reauthorization bill. I appreciate hearing from you on this important issue.

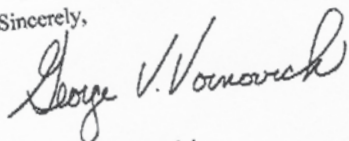
In 2005, Congress reauthorized federal highway and transit programs with the passage of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU; P.L. 109 - 59). This legislation expires at the end of fiscal year (FY) 2009. As the Ranking Member of the Senate Transportation and Infrastructure Subcommittee, I will be very involved in drafting the next transportation reauthorization bill.

According to the Federal Highway Administration's (FHWA) 2006 Conditions and Performance Report, the average annual investment level needed just to maintain the current condition and performance of our highway system is \$78.8 billion, while the cost necessary to improve our highways and bridges would be \$131.7 billion. More recently, the National Surface Transportation Infrastructure Financing Commission reported the federal highway and transit funding gap totals nearly \$400 billion in 2010 through 2015 and grows to about \$2.3 trillion through 2035.

As the next surface transportation reauthorization bill moves through the legislative process, I will keep your views in mind.

Thank you for contacting me. As a fellow Ohioan, I appreciate hearing from you. Please feel free to contact me again regarding this issue or any other issues that may be of concern to you.

Sincerely,



George V. Voinovich
United States Senator

GVV/jw

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MUCH CHANGE AT ODOT



In addition to the changes in leadership and budget, the Ohio Department of Transportation (ODOT) has made significant changes to its construction manual specification:

DUTY TO ASK PRE-BID QUESTIONS

- §102.07: ODOT has further reinforced its “Duty to Notify of Errors in Bid Documents.” Under this provision, potential contractors are required to ask pre-bid questions prior to bid opening. Failure to do so “shall constitute a waiver by the contractor for any claim based upon any apparent or patent ambiguity arising from insufficient data or obvious errors in the Bid Documents.”

ENGINEER’S ACCEPTANCE DOES NOT PRECLUDE FUTURE ODOT DEFECTIVE WORK CLAIMS

- §105.01: further reinforces that the engineer’s acceptance of work does not constitute a waiver by ODOT of its right to pursue any and all legal remedies for defective work.

NO ODOT WAIVER RESULTING FROM AN INSPECTOR’S ACTION OR INACTION

- §105.09 & §105.10: an inspector’s action or inaction does not constitute a waiver of ODOT’s right to pursue all legal remedies for defective work. Furthermore, ODOT shall have the discretion to dictate the level of inspection for any item of work while the contractor bears the sole responsibility that its work is in compliance with the contract.

BORROW AND WASTE REQUIREMENTS

- §105.16: under its Borrow and Waste Areas requirements, the contractor is responsible for any damage resulting from the instability, removal, or placement of the borrow and waste areas. Furthermore, the contractor is responsible that the side slopes of all borrow and waste areas are beyond the “clear zone,” and do not reduce the horizontal sight distance.

ADDITIONAL WAYS TO PRICE EXTRA WORK

- §109.05.D: for extra work, ODOT is now contractually permitted to use “state-wide average unit” pricing adjusted for inflation or the average price awarded on three different projects of similar work and quantity.

FINAL BOND PREMIUM ADJUSTMENT

- §109.05.C.7: allows ODOT to make an adjustment based upon the final bond premium amount for the contractor. The adjustment is based on the “actual final contract value,” which is defined as the whole sum of money, excluding any bond premium adjustment, which is passed from ODOT to the contractor for the completion for the work. If the actual final contract value is different from the original contract value, the premium shall be adjusted either by a contractor refund or by an additional payment from ODOT. No final bond adjustment will be made if the actual final contract value differs from the original contract value by less than \$40,000.

ACCELERATION, INEFFICIENCY, AND LOSS OF PRODUCTIVITY PROVISIONS

- §109.06 & §109.07: under §109.06, the engineer may order the contractor to accelerate. If such acceleration order occurs, the Contractor and ODOT will negotiate the acceleration costs. §109.07 states that “compensable” inefficiency and loss of productivity costs shall be quantified using the measured mile approach.

MULTI-MONTHLY PAYMENTS POSSIBLE

- §109.09: permits ODOT to pay estimates twice each month if the Engineer concludes the amount of work performed is sufficient.



Don Gregory serves as General Counsel to Flexible Pavements of Ohio and represents the construction industry. He can be reached at dgregory@keglerbrown.com.

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TEAMWORK GETS JOB DONE AT DERBY DOWNS

FPO-sponsored racer has success.

Shelly & Sands demonstrates generosity.

Teamwork was on display throughout the 72nd All American Soap Box Derby, July 20-25, in Akron. Soap boxers from as far away as Guam, New Zealand, Japan, Alaska and Germany, made the annual trek to one of the world's most celebrated youth sporting events – The All American Soap Box Derby at Derby Downs.





Derby Downs, home of the All American Soap Box Derby Championship in Akron.

Team Asphalt, sponsored by Flexible Pavements of Ohio (FPO), advanced to Akron having placed 1st regionally in the Greater Columbus Soap Box Derby in June. At the All American Soap Box Derby, driver Elias Markley and co-crew chiefs (and brothers) Isaiah and Jedidiah were among the 544 soap box contestants who competed in seven different classes. Team Asphalt competed against 135 other contestants in the Stock Division, winning two heats and advancing to the No. 17 position before losing in a neck-and-neck race.

"I was just so excited to get to Akron," Elias said. "To get to run in three heats and place 17th in the world for my class is much more than what I imagined. I can't wait 'til next year!"

Team Asphalt gave it everything it had, and FPO is pleased to have sponsored a team that, just like asphalt contractors, always makes a good showing. FPO cheers Team Asphalt on to even greater accomplishments.

However, the story doesn't end here.

There's another Team Asphalt deserving of recognition. Two weeks prior to the big event at Derby Downs, a team of another sort was busying themselves making preparations for a smooth and safe ride for all Derby contestants. This Team Asphalt was comprised of dedicated workers from

FPO-member Shelly & Sands Inc.



Team Asphalt (middle lane) streaks to the finish line to win another beat.

Teamwork is indeed needed for quality construction, and Shelly & Sands demonstrated such with its placement of an asphalt overlay on Derby Downs. The quality of work performed by Shelly & Sands' paving crew was of such excellence that it resulted in record times for Derby contestants. So well was it constructed that the race announcer told the audience to "notice how quiet the cars are as they come down the hill," and that the pavement was as "smooth as glass. Two weeks earlier you would have heard ka-dump, ka-dump, ka-dump," he remarked.

Shelly & Sands should be recognized as well for its generosity. With a desire toward community service, Shelly & Sands chose to donate the cost of labor and equipment to pave the Derby Downs track. Flexible Pavements also applauds Shelly & Sands and its crew for excellence in construction and more notably the gesture of kindness to the City of Akron and the example of community service set in front of all the future champions who raced Derby Downs that day.

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OTEC & ASPHALT

**Ohio Transportation Engineering Conference,
October 27-28, 2009**



The Ohio Transportation Engineering Conference (OTEC) is scheduled to return to the Greater Columbus Convention Center, October 27-28. As in the past, Flexible Pavements of Ohio (FPO) will again be exhibiting and sponsoring an

asphalt pavement technical session. The conference schedule is posted and registration is currently being accepted on the OTEC Web site at www.otecohio.org.

Taking place on the conference's opening day at 1 p.m., the Asphalt Session features three presentations that will earn participants 1.5 professional development hours. The first presentation, "Porous Pavement, A Green Step Forward," is scheduled to be directed by Hank Fedders and staff from KZF Design Inc. in Cincinnati. The presentation will discuss the design of a 1.4-acre porous asphalt pavement Park-n-Ride facility, and porous asphalt's viability as a best management practice to reduce stormwater runoff and improve stormwater quality.

Dr. Chris Williams, Center for Transportation Research and Education at Iowa State University, will present "Next Generation Asphalt." The spike in 2008 asphalt binder prices has set in motion innovations with the promise of providing substitute binding agents. Iowa State University engineers are working on new technologies to produce bio-oil that can provide a substitute for petroleum-based ingredients in asphalt mixtures. This presentation will discuss that work.

The third presentation, "Fayette County Evaluates Experimental Mix 404-LV," will spotlight low-volume (LV) pavements, such as chip-sealed roads. 404-LV is an experimental mix specification built off the success of ODOT Item 404, last seen in the 1997 Construction & Materials Specifications. Designed for applications as thin as 1-inch, Fayette County is one of the first agencies to place this mix. Dan Crago, P.E., of Valley Asphalt Corporation, will address the particulars of 404-LV's innovative contracting approach to treating low-volume pavements, and the contractor's experience with placing this material.

In all, the OTEC Asphalt Technical Session has shaped up to provide timely information, as agencies seek to incorporate sustainable pavement technologies, hold costs in check and successfully provide high-quality pavements to the road users.

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Flexible Pavements of Ohio is happy to announce that along with its e-newsletter, its quarterly association magazine, *Ohio Asphalt*, is now available online — and it can be sent directly to your computer. Information regarding the asphalt industry and Flexible Pavements of Ohio can be sent directly to you — but you need to let us know you're interested in receiving it.

To be included in the distribution of our e-newsletter and the electronic version of *Ohio Asphalt*, just let us know by sending a request with your address information to info@flexiblepavements.org, or use the request form on our Web site at http://www.flexiblepavements.org/sign_up_news.cfm.



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