#### Members **Producer Contractors**

Apache Aggregate & Paving Co. Barrett Paving Materials, Inc. Bowers Asphalt & Paving Inc. C&S Limestone, Inc. Asphalt Div. L.P. Cavett Co. Central-Allied Enterprises Cunningham Asphalt Paving, Inc. Erie Blacktop, Inc. Gerken Paving, Inc. Hancock Asphalt & Paving, Inc. Highway Asphalt Co. S.E. Johnson Companies Kokosing Construction Co., Inc. Koski Construction McCourt Construction Co. M&B Asphalt Co., Inc. Mansfield Asphalt Paving Co. Melway Paving Co., Inc. Milestone Contractors, L.P. Miller Bros. Paving Inc. Newton Asphalt Paving, Inc. Northeastern Road Improvement Co. Northern Ohio Paving Co. Northstar Asphalt Inc. Northwood Stone & Asphalt Co. Ohio Asphalt Paving, Inc. The Osterland Co. Sarver Paving Co. Schloss Paving Co. The Shelly Co. Shelly Materials, Inc. Shelly & Sands, Inc. H.P. Streicher, Inc. Superior Paving & Matls., Inc. Thomas Asphalt Paving Co. Tri-State Asphalt Co.

## Walls Bros. Asphalt Co. **Contractor Members** Henry W. Bergman, Inc.

Valley Asphalt Corp.

Valley Paving Co., Inc.

Bucyrus Road Materials, Inc. Burton Scot Contractors, LLC. Chemcote, Inc. Clinton Asphalt Paving Co. Decker Construction Co., Inc. Ebony Const. Co., Inc. Hysong Paving Co. McDaniels Construction Corp., Inc. Ronyak Bros. Paving, Inc. Southern Ohio Paving, Inc. Strawser, Inc. Wagner Paving, Inc. Whitta Construction

#### **Aggregate Producers**

Agg Rok Materials

#### **Asphalt Marketers**

BP/Amoco Oil Co. Koch Pavement Solutions Marathon Ashland Petroleum, LLC Seneca Petroleum Co., Inc. Tosco Asphalt

#### **Associate Members**

A&A Safety, Inc. A.M.A. Material Supply AST Environmental, Inc. Asphalt Materials, Inc. Asphalt Solutions, Inc. Asphalt Systems, Inc. Astec Inc. Bituminous Products, Co. Burke Heating Systems Co. Cantwell Machinery Co. Caterpillar Inc. Columbus Equipment Co. Construction Consulting & Testing, Inc. Craig Technologies, Inc. D & J Consulting DJL Material & Supply, Inc. Dicke Tool Co. Dillman Equipment, Inc. Eagle Crusher Co., Inc. Fiberized Products, Inc. Frankfort Testing Laboratory Frank Gates Service Co. Gencor Industries, Inc. Grasan Equipment Co., Inc. Heat Equipment and Technology, Inc. Highway Rubber Products Corp. Holt Co. of Ohio Hug Manufacturing Hy-Grade Corp. Interstate Traffic Control JASA Asphalt Materials Kennametal Key Positioning Systems Lucas County Asphalt, Inc. McLean Co. Manhole Systems, Inc. Martin-Marietta Aggregates Meeker Equipment Co., Inc. Meredith Brothers, Inc. H.C. Nutting Company

Ohio Machinery Co.

Pine Instrument Co.

Rohm and Haas Co.

Protection Services Inc.

**Sharp Testing Services** 

Solar Testing Laboratory



### OFFICERS AND DIRECTORS

#### **OFFICERS**

Chairman - Paul Scala, Highway Asphalt Co. Co-Chairman - Mike Thompson, Barrett Paving Materials, Inc. Treasurer - Wayne Brassell, Kokosing Construction Company, Inc.

#### **BOARD OF DIRECTORS**

Peter M. Alex, The Osterland Co. Brent Gerken, Gerken Paving, Inc. James P. Jurgensen, Valley Asphalt Corporation Richard H. McClelland, Shelly & Sands, Inc. James S. Tharp, The L.P. Cavett Co. Donald C. Weber, S.E. Johnson Companies, Inc. Dean Wikel, Erie Blacktop, Inc.

#### STAFF

Fred F. Frecker, President & Executive Director Clifford Ursich, Executive Vice President Florence H. Flowers, Administrative Assistant William H. Fair, Customer Service Engineer

Telephone: 614-221-5402; 888-446-8649 (Ohio only)

Fax: 614-221-0394

Website: www.flexiblepavements.org

Southeastern Equipment Co. Surface Systems & Instruments, LLC Tiger Machinery Co. Toltest, Inc. Troxler Electronic Labs, Inc. Ultrapave United Rentals/Highway Technologies VLS-QC Resource Division Wisconsin Electrical Mfg. Co.

Mannik & Smith, Inc. M-E Companies, Inc. Resource International Woolpert, LLC

#### Architects & Highway Engineering Consultants

BBC&M Engineering, Inc. Balke Engineers Brandsetter/Carroll, Inc. CDS Associates, Inc. CPS Consulting Group, LLC. **HNTB** Corporation Kohli & Kaliher Associates Korda/Nemeth Engineering, Inc.

FLEXIBLE PAVEMENTS OF OHIO 37 W. Broad St., Suite 460 P.O. BOX 16186 COLUMBUS, OHIO 43216

First Class U.S. Postage Paid Columbus, Ohio Permit No. 1366



# HOT-MIX ASPHALT



VOL. 10 NO. 3

**CURRENT NEWS** 

September, 2001

# PERPETUAL PAVEMENT'S 3-LAYER DESIGN LASTS A LIFETIME

Designed To Keep User Delay At A Minimum

#### IN THIS ISSUE:

| Perpetual Pavement1                     |
|---|
| New Jersey Turnpike4                    |
| Credit Cards4                           |
| City of Blue Ash5                       |
| Transportation Engineering Conference5  |
| Asphalt Pavement Conference6            |
| Sheldon Hayes Award7                    |
| Smoothseal8-9                           |
| Member Spotlight10-11                   |
| Garfield Heights12-13                   |
| FPO Director14                          |
| Transportation<br>Appropriations Bill14 |
| Bye Bye 40415                           |
| NAPA & ARTBA18                          |
| Senator Jefford19                       |
| Highway Trust Fund19                    |

With orange barrels a regular sight on most rush hour commutes, traffic delay caused by road construction has become the number one beef of the motoring public. In a state where the demand for new roads is straining the government's capacity to build, the last thing anyone wants to see is construction on a road that was worked on just a few years previously. If the motoring public could speak with one voice to ask the road construction industry one question, it would probably be: "why can't you build roads that last?"

This concern has not fallen on deaf ears.

A brand new kind of asphalt pavement soon to appear on Ohio roads will do just that. And it won't just last...it will last a lifetime. Perpetual Pavement, the next generation in asphalt paving technology, is here today, and will last well beyond tomorrow.

Today's asphalt pavement lasts a long time. With surface maintenance it can last more than 30 years. In fact, no full depth asphalt pavement on Ohio's highway system has ever needed to be replaced. Commonly it is a failing concrete base below some asphalt pavements that leads to major rehabilitation. That's what keeps the orange barrel manufacturers in business, and the rush hour drivers clenching their fists.

"The problem is the industry has designed pavements to fail," said Dr. Marvin Traylor, director of engineering at the Illinois Asphalt Paving Institute. "We design a pavement to handle X number of loadings before it will finally need to be replaced. Perpetual Pavement will be designed never to exceed a critical fatigue level and therefore never



to fail. With surface maintenance, these pavements will truly last a lifetime, taking a significant bite out of traffic delay in the future."

This increased durability will be accomplished through the use of mechanistic design. In a mechanistically based pavement, designers analyze how traffic strain will affect the pavement's performance, taking into account material qualities and thickness. By designing the pavement to keep strain below the critical level, fatigue failure is avoided and perpetual performance can be assured. Structural and aeronautical engineers have used mechanistic design principals for years. It's only a matter of time before it's the standard in the paving industry.

Through the use of mechanistic design, each layer in Perpetual Pavement's 3-layer system will be tailored specifically to local climate and traffic conditions. The base layer will be made of flexible fatigue resistant asphalt, designed to resist bottomup fatigue cracking. The middle layer will be made

Perpetual Pavement, continued on page 2

of high modulus, rut resistant asphalt, formulated to support expected traffic. The surface layer will be made of SMA, OGFC or Superpave, and will be designed to eliminate rutting, reduce splash and spray, absorb noise and hold up to local weather and traffic conditions.

The combination of the three layers will force distress to the surface layer, where it can quickly be maintained at a low cost. The surface will be milled off, recycled, and replaced. This means that improved surface mix design can be incorporated into an existing Perpetual Pavement as it is developed over time.

Perpetual Pavement will also provide a consistently smooth and quiet ride. As traditional pavements approach the need for major rehabilitation the ride quality, or "serviceability," deteriorates into bumps and thumps, until the pavement needs to be overhauled, once again delaying traffic. With Perpetual Pavement, surface maintenance in offpeak hours will keep the serviceability level close to perfect throughout the life of the pavement, without traffic delay. This means drivers will enjoy a perpetually smooth and quiet ride.

While there are currently no Perpetual Pavements in service in Ohio, there are plenty of deep strength asphalt pavements from which we can draw meaningful data, since Perpetual Pavement is essentially an improvement on the existing deep strength asphalt design. Flexible Pavements of Ohio commissioned a study of adjacent deep strength asphalt and concrete pavements. The selection of adjacent pavement sections ensured identical weather and traffic conditions. The study found that the asphalt sections had a lower life-cycle cost, required less maintenance and were a better value to taxpayers. In fact, all of the asphalt pavement sections studied are still in service, some for as long as 40 years.

Deep strength asphalt pavements have been widely used in Europe for years. A recent study conducted by the Transport Research Laboratory in England concluded that in pavements thicker than 8 inches, rutting and cracking was confined to the top layer – where it is easily milled off, recycled and replaced.

These reports show us two things: Thick pavements perform better than thin ones; and when it comes to choosing a pavement that will last a long time, asphalt is the answer. Studies of this nature led the industry's top researchers to deep strength asphalt as the starting point in designing Perpetual Pavement. By incorporating mechanistic design and segmenting the pavement into three distinct layers, Perpetual Pavement begins to take shape.

Engineers from the University of California at Berkeley constructed a segment of Perpetual Pavement and, using an accelerated load tester, were able to simulate years of traffic strain. The results of these tests helped CalTrans engineers evaluate material qualities and thickness for use in the rehabilitation of I-710, the Long Beach Freeway. The partnership between these two organizations led to the development of a strategy to convert this California highway into a Perpetual Pavement.

Dr. Marvin Traylor of the Illinois Asphalt Paving Institute assisted an Illinois Department of Transportation task force in developing a strategy to make Illinois' existing deep strength asphalt pavements perform perpetually. Dr. Traylor's research and recommendations helped the task force develop design plans for I-70 in Clark County and will be used as a road map for other states building Perpetual Pavements. Construction of the first Perpetual Pavement in Illinois is slated to begin in 2003.

Perpetual Pavement is not just a wild-eyed look into the future. It's here today, with projects happening in California, Michigan, Texas and Illinois. Discussions with the Ohio Department of Transportation indicate that a pilot Perpetual Pavement project in our own state may be a reality in the near future. Perpetual Pavement's lifetime guarantee will take asphalt's advantage in cost, convenience and comfort to the next level – something the orange barrel manufacturers may not be so happy about.

# Perpetual Pavement

# It will still be a good idea when your grandchildren get to be your age.

With a Perpetual Pavement, you getalifetime of smooth performance while reducing costs and improving safety.

The Perpetual Pavement has multiple layers of durable, recyclable asphalt. When the surface layer needs maintenance, it can be milled off and replaced overnight without disturbing the roadway's structure. Many decades from now, the pavement structure will still be intact.

To learn more, visit www.AsphaltAlliance.com or calltoll-free 888-468-6499.

# THE NEW ASPHALT ABSOLUTELY!



www.AsphaltAlliance.com

# NEW JERSEY TURNPIKE AUTHORITY HONORED WITH THE FIRST-EVER PERPETUAL PAVEMENT AWARD

# 50 Years Without A Reconstruction Project

The Asphalt Pavement Alliance (APA) announced that the New Jersey Turnpike Authority will be honored with the first-ever Perpetual Pavement Award on Thursday, September 20, 2001. The Turnpike's asphalt pavement is being honored for a half-century of service.

"Even though 50 years of heavy use have punished that pavement, motorists on the New Jersey Turnpike are still traveling on the original pavement structure. Only surface treatments have been used to maintain the pavement," said Mike Kolos, Chairman of the Asphalt Pavement Alliance. "This extraordinary record is worthy of our attention."

A Perpetual Pavement is defined as a Hot Mix Asphalt pavement with a structure that was designed and built to eliminate structural failure and minimize surface rutting. Such a structure typically features a multi-layer design that can last 50 or more years with only periodic renewal.

Construction of the Turnpike began in January 1950 and was completed in 23 months. Fifty years later, with 148 travel miles, the New Jersey Turnpike is one of the most densely traveled roadways in the nation.

To celebrate this anniversary, the New Jersey Historical Society gala kicks off the opening of its new exhibition entitled "What Exit?" as well as a full schedule of transportation- and Turnpike-related programs. "We are very excited to host a gala that celebrates the New Jersey Turnpike as a truly unique piece of New Jersey's culture, recog-

nized around the country," said Sally Yerkovich, President & CEO of the New Jersey Historical Society. The gala will begin with cocktails and guests will then receive an advance preview of the Turnpike exhibition. A dinner and dance will follow.

"The New Jersey Asphalt Pavement Association congratulates the New Jersey Turnpike Authority for 50 years of outstanding service as New Jersey's premiere super highway," said John Post, President of the New Jersey Asphalt Pavement Association. "It is entirely fitting that the Asphalt Pavement Alliance's first ever Perpetual Pavement Award recognizes the fact that not one mile of this durable road has ever had to be reconstructed. Our members helped build and helped maintain the Turnpike. We are a part of its history and its future. This is truly a magnificent honor for the Turnpike Authority that should be recognized and praised by all the motorists who depend on it."

For additional information about the Perpetual Pavement Award, contact Roger Sandberg at the APA, 888-468-6499, extension 105. For more information or ticket reservations, contact Leah Lamb at the New Jersey Historical Society, 973-596-8500, extension 244. The Asphalt Pavement Alliance is an industry coalition of the Asphalt Institute, the National Asphalt Pavement Association, and the State Asphalt Pavement Associations.

# Credit Cards and New Email Address

# FLEXIBLE PAVEMENTS NOW ACCEPT CREDIT CARDS









Flexible Pavements of Ohio now accepts credit cards for payment of seminar registrations and purchases of the Design and Construction Guide. Cards being accepted include MasterCard, Visa, Discover, American Express and Diner's Club. Registrations or purchases will still be handled by submission of a written registration form or order form transmitted by mail or fax to the office of Flexible Pavements.

Charges to credit cards will be made upon shipment of the ordered items or at the cut-off date for cancellation of a seminar. Questions regarding credit card purchases may be made to Flo Flowers at the Flexible Pavements office, 1-888-4HOTMIX or flexpave@ameritech.net.

# FLEXIBLE PAVEMENTS HAS A NEW EMAIL ADDRESS

The association's new general email address is **flexpave@ameritech.net**. Mark your address books now!

## CITY OF BLUE ASH TRIES RUBBLIZATION

# Rubblization Not Just for Interstates

Frustrated with continual repairs to two concrete paved Industrial park roads, Dennis Dean of Asher Associates and Dennis Albrinct, Service Director of Blue Ash, decided to try rubblization and an asphalt overlay as a fast and economical means of rehabilitating the existing pavement. The two streets involved are Creek Road, from Kenwood Road east to Deerfield Road, and Rossplain Road from Plainfield Road to Blue Ash Road.

The project consisted of milling off the existing 2 to 4 inches thick bituminous overlay along with the existing curbs, rubblizing the concrete pavement and placing a 6-1/2-inch total thickness asphalt overlay. The intermediate course of type 2 asphalt concrete specified a unmodified (neat) PG70-22 binder and the type 1H surface



With the asphalt overlay milled off, the extent of the deterioration of the concrete base pavement was readily apparent.



Rubblization of the concrete pavement proceeded rapidly.

required a polymer modified PG76-22M binder for rutting resistance. Both courses specified 100% crushed aggregates to improve stability. The project includes placing new extruded fiber-concrete curbs and new aprons to all the businesses.

Work went well on the Creek Road portion of the project. Rubblization and placement of the 301 base was completed in six days while maintaining traffic. Work on Rossplain Road was plagued by problems of soft subgrade, which were further exacerbated by the 8 inches of rain that fell after the overlay was removed. With the asphalt surfacing removed, the storm water could not run off and further saturated the subgrade. Extensive installation of subgrade drainage and 1100 sy of base repair, 16 inches deep, was necessary to obtain a stable paving base.

Blue Ash Rubblization, continued on page 6

# OHIO TRANSPORTATION ENGINEERING CONFERENCE, OCTOBER 22-23, 2001

At the Ohio Transportation Engineering Conference (OTEC) scheduled for October 22-23, 2001 in Columbus, Flexible Pavements of Ohio (FPO) will be featuring information on "Smoothseal". We hope you will stop by to visit our trade show booth and visit with the FPO staff, Fred Frecker, Jerry Wray, Cliff Ursich and Bill Fair for more information on "Smoothseal". Also, plan to attend the flexible pavement technical session and visit the Asphalt Pavement Alliance booth to learn more about the "Perpetual Pavement" concept from the national association experts. Many of Flexible Pavements' associate member companies will also be exhibiting in "asphalt alley". Be sure to visit their booths as well. For more information on OTEC, visit the website: www.otecohio.org.

Unit costs for the main project items are listed in the table below.

| Item | Description                                    | Quantity | Units | Unit Price |
|------|--|----------|-------|------------|
| 254  | Pavement Planing, var. depth                   | 51,302   | Sy    | \$ 1.85/sy |
| SPL  | Rubblization                                   | 22,979   | Sy    | \$ 2.40/sy |
| 605  | Underdrains, 6 in. w/filter                    | 1,250    | Lf    | \$15.00/lf |
| 301  | Bituminous Aggregate Base                      | 1,913    | Су    | \$69.10/cy |
| 448  | Intermediate Course, T2, PG70-22, 100% crushed | 1,300    | Су    | \$73.30/cy |
| 448  | Surface Course, T1H, PG76-22M, 100% crushed    | 914      | Су    | \$84.75/cy |



Rolling with a vibratory, z-bar roller further reduced the particle size and prepared the base for paying.

Based on these unit costs, the project of removing the existing asphalt, rubblizing the concrete base, and placing the 6-1/2-inch thick overlay cost about \$18/sy. This cost is probably only a third to half the cost of replacing the pavement.

The city's consultant is satisfied that the process of rubblization can be a

very effective means of rehabilitating their concrete pavements. Most proponents of rubblization advocate the installation of underdrains at least 2 weeks prior to the rubblization in order to drain

excess water from the base. Blue Ash's experience shows that with proper preparation, including consideration of the subgrade and subdrainage conditions, the process can be very economical and can be constructed very quickly, even at night if necessary.



Creek Road traffic is maintained on the intermediate course while drive approach aprons are restored.

# ASPHALT PAVEMENT ALLIANCE ANNOUNCES INAUGURAL ASPHALT PAVEMENT CONFERENCE NOVEMBER 14-16, 2001

The Asphalt Pavement Conference, whose theme is "A Lifetime of Smooth Performance," is a combination of two premier asphalt technical forums: the U.S. Hot Mix Asphalt Conference and the Superpave forum. This event is sponsored by the Asphalt Pavement Alliance and will be held at the Doubletree Hotel in Austin, Texas, November 14-16, 2001. It will showcase new technology and best practices in the areas of safety and user satisfaction; durability; innovation and developments; and economy. Paving professionals, specification writers, project superintendents, and others will all benefit from attending this three-day event.

A preliminary program and registration information can be obtained by contacting Carol Prouty, Meetings Assistant, c/o Asphalt Pavement Alliance, 5100 Forbes Boulevard, Lanham, MD 20706-4413, 301-731-4748. The e-mail address is meetings@AsphaltAlliance.com. The toll-free phone number is 888-HOT MIXX (888-468-6499) and the fax number is 301-731-4621. Information about the Asphalt Pavement conference and online registration is available on the Asphalt Pavement Alliance home page, www.AsphaltAlliance.com

# OHIO PROJECT FINALIST FOR THE SHELDON G. HAYES AWARD

# Ohio Quality Recognized Nationally

For the second year in a row, a project from Ohio has been named a finalist for the nation's most prestigious asphalt pavement award. Contract B of the Butler County Regional Highway, which was constructed by the Kokosing Construction Company of Fredericktown, is among the select group of seven highly-ranked pavements nationwide that are eligible to be evaluated for the 2001 Sheldon G. Hayes Award. Last year two projects from Ohio were finalist, both constructed by Northern Ohio Paving Company of Twinsburg.

The winner of the Sheldon G. Hayes Award is determined through a two step process. The first step is the ranking system administered by the National Center for Asphalt Technology (NCAT), which is used in determining the winners of the Annual Quality in Construction

(QIC) awards. The highest rated of these pavements are reinspected one year later by NCAT and evaluated for smoothness by LAW/PCS using the International Roughness Index (IRI). Using the combined scores from the NCAT and IRI ratings, the list is trimmed to three pavements, which are evaluated by an independent, experienced industry professional to determine the winner.

The Butler Regional Highway, which connects the city of Hamilton with I-75 in Butler County, was the dream of local officials since the opening of I-75 in 1959 and has been in the planning stages since 1970. The dream was finally realized when federal highway legislation provided for the creation of Transportation Improvement Districts (TIDs) as a means of

**Sheldon G. Hayes Award**, continued on page 17



# SMOOTHSEAL - GAINING ACCEPTANCE

# Best Value for Preventive Maintenance

Recent emphasis on preventive maintenance (PM) has specifiers looking for pavement treatments that are durable, long lasting, able to be placed in thin layers, and won't bust the bank. A treatment catching the eye of specifiers is Smoothseal.

A Hot Mix Asphalt treatment designed specifically for thin lift (5/8 inch - 3/4 inch) placement, Smoothseal was developed for structurally sound pavements that are showing signs of aging, oxidation or minor surface disintegration.

There are two types of Smoothseal – Type A and Type B. The difference between the two is seen primarily in particle size and asphalt binder content. Type A, formerly specified as ODOT Supplemental Specification 805, is a blend of concrete sand and mason sand, and an 8-1/2 percent asphalt binder content. Type B is a blend of 3/8-inch maximum sized coarse aggregate and sand size particles with a minimum asphalt binder content of 6.4 percent. A Silicon dioxide requirement for both mix types ensures good friction characteristics.

### **Durability**

28 years! Yes, up to 28 years is how long Smoothseal, Type A, has lasted on Ohio's roadways and streets – and the clock continues to tick. Winner of this year's Flexible Pavements of Ohio Master Craftsman Award, Shelburne Road in the City of Shaker Heights, used Smoothseal in 1973 as a pavement surface. The City was looking for a durable, long lasting surface. Durable and long lasting, Smoothseal has proven itself to be.



Type A surface mix on Shelburne Ave. continues to remain intact, resisting disintegration from reflective cracking.

Characteristic of many established communities, the City of Shaker Heights enjoys the grandness of towering trees and architectural beauty amongst its winding roadways. With such grandness comes the need for pavements



US 224 near Canfield receives treatment of 3/4-inch thick Type A mix (sold as SS 805). The project was constructed this August by McCourt Construction Company. Traffic on this pavement ranges from 20,000 to 36,000 vehicles per day.

that provide long term durability. Oftentimes the beauty of tree canopy can cause a pavement to deteriorate more quickly by allowing moisture to remain on the pavement surface. Long term exposure to moisture can lead to surface distress in some asphalt mixes. Smoothseal's ability to combat such destructive forces is what makes it a long-term PM fix.

What makes Smoothseal so durable? Smoothseal incorporates high amounts asphalt cement binder and polymer modifier. The heaviest dosage of polymer used in today's paving industry is what is required in every Smoothseal mix. It's the polymers that change the binder to make it resistant to aging, cracking, and the damaging effects of moisture. Increased stiffness is also a benefit of the heavy polymer dosage, making the mix resistant to pushing and other forms of deformation.

#### **Introducing Smoothseal Type B**

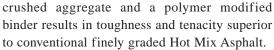
Smoothseal, Type B, first introduced to Ohio as an experimental project in Logan County, was placed on State Route 508 in 1993. Since that time the Type B mixture has

Smoothseal, continued on page 9

been used on ODOT maintenance projects, and most recently on State Route 322 in Geauga County.

Smoothseal, Type B, is unique in that, for heavy traffic conditions, it uses 100 percent

two-faced crushed coarse aggregate. The crushed aggregate acts to provide internal friction to the mix, leading to stability. greater Complimenting the mixture's stability is the use of PG 76-22M, SBS polymer modified asphalt binder, or SBR Latex Rubber polymer. The synergy of using



(1994)

Additionally, gradation requirements for the aggregate are very strict. This is intentional and helps to ensure consistently good performance from Smoothseal, Type B, pavements.

#### **Specifying Smoothseal**

Specifying Smoothseal was recently made easier when the Ohio Department of Transportation crafted a new specification outlining material requirements. Known by Department personnel as Fine Graded Polymer Asphalt Concrete, the material is specified



Geauga SR 322 receives Smoothseal treatment (August 2001).

under Supplemental Specification 854.

Smoothseal should be used wherever pavement preservation is the objective of a treatment. It should be placed on structurally sound pavements that are exhibiting only surface distress. Ravelling and

> minor cracking due to oxidation are the types of distresses for which Smoothseal is ideally suited.

> When specifying Smoothseal, Type B, the pay item must include the traffic type (i.e. light, medium, or heavy). This is due to the fact that the Type B material's design is based upon criteria governed by the Marshall

Method of asphalt mixture design. The SS 854 specification automatically designates the asphalt binder type for both Type A and B mixes – eliminating the need for this information in the pay item description.

### "Your cost may vary"

Costs for Smoothseal will vary based upon quantity, location and other factors. They could vary from between \$70 to \$90 per cubic yard. When placed at 1/2 to 1-inch thick, Smoothseal ranges from \$1.51 to \$2.55 per square yard. For comparison purposes, the cost for conventional materials such as 448, Type 1, can vary from \$60 to \$80 per cubic yard. This translates to a square yard cost of \$1.72 to \$2.83 for 448, Type 1, mix placed at a thickness of 1 to 1-1/2-inches. (All costs per square yard include 5¢ for tack coat application.)

The reason for Smoothseal's gaining acceptance is very simple. It provides the opportunity for extended pavement surface life at a cost that is affordable. Annualized costs indicate that Hot Mix Asphalt treatments used as preventive maintenance strategies are the most cost-effective treatments. Also, when Smoothseal is specified, the driving public receives the additional benefit of a smooth and quiet ride that is typical of asphalt pavements.

Placing Type B mixture on SR 261 near Kent

# Member Spotlight

# WAGNER PAVING BUILT ON FAMILY, LOVE OF BUSINESS

Tom Wagner loves his job. After over three decades in the paving business, the President of Wagner Paving, Inc. is a man of few words. "I'll work until I can't work any more," he replies when asked about his plans for retirement. "I love what I'm doing too much to retire."

He developed this love for the business as he worked his way up through the ranks as an employee of Fink Construction. By his senior year in high school he was foreman of his own crew. In 1970, at the age of 28 he decided it was time to go into business for himself, and bought out a small driveway contracting business. Thirty-one years later, Wagner Paving is a thriving business with more than 70 employees.

"Our business has grown every year since we started," Wagner said. "Last year we did \$6 million in business, this year we'll probably top \$7 million."

The company is headquartered in Laura, Ohio where its yard shop is located, and has

an office in Sidney. Customers are primarily located in Miami and surrounding counties and are typically cities, counties, townships as well as private companies.

"I think we've been successful because we're family oriented," Wagner said. "My son and daughters help me run the company and we treat our employees like they are family. Our employees are the type that don't like working for big companies. Everything starts with your employees, so we feel they are very important to our business."



Tom Wagner, President of Wagner Paving, with his airplane and an employee's child. Mr. Wagner gives employees plane rides during the company's picnic.



Wagner Paving crew doing what they do best.

Son Tom Wagner, Jr., is Vice President of the company, assisted by his sisters Vicki Spitler and Cheri Kress. Vicki handles scheduling as the company's secretary, while Cheri, as Treasurer, oversees the firm's finances. Vicki's husband, Bobby Spitler, is General Superintendent, in charge of supervising job sites. Two paving foreman, 2 grading foremen, a liquid foreman and a concrete foreman lead Wagner crews.

Tom Wagner estimates that at least three fourths of the firm's business comes from repeat customers. "They see the work we do and come back to us in the future," Wagner said. "When we say we're going to be there, we show up. We do what we say we are going to do. That's why our customers trust us."

The firm does all kinds of paving work, using both asphalt and concrete. Asphalt makes up about 90 percent of the company's total business. "I prefer asphalt for paving jobs because it's better in terms of cost and rideability," said Wagner. "We can do whatever a customer wants, but my preference is definitely asphalt."



**Employees of Wagner Paving located in Laura, Ohio.** 

# GARFIELD HEIGHTS PROJECT A CASE STUDY IN RUTTING CORRECTION

High Stress HMA Pavement Cures Problem

The City of Garfield Heights is rehabilitating Broadway Street (SR 14). In planning the project the city's engineer, Wade-Trim of Ohio, sought suggestions from Flexible Pavements of Ohio on how

best to correct the rutting, shoving and corrugations present on this heavily loaded street.

Tom Beutler, Bob Tomasek and Bob Bulk of Wade-Trim provided the following information: The existing pavement consisted of a 4 inches thick layer of bricks on a 9 inches thick concrete base which had been resurfaced twice over the last 40 years or so with a total of about 4-1/2 inches of asphalt concrete. The road carries about 36,000 vehicles per day

with 8% trucks. From prior street excavations, the brick and concrete base was believed to be in good condition. The proposed project was conceived as a mill and fill asphalt overlay treatment. Wade-Trim asked the association's opinion as to what materials to specify for the overlay and whether this treatment would be sufficient to cure the rutting.

After reviewing the project and observing rut depths in the curb lane of over 2 inches depth, Flexible Pavements speculated that a mill and fill deformation. Five sets of cores were taken at different locations on the project. The set of cores at a single cross section consisted of a core at the point(s) of maximum rutting, a point of maximum

heaving and at an area, which showed no visible deformation. Coring was taken to the surface of the brick. These cores were then analyzed to determine which layers of the pavement were deforming.

Observation of the cores revealed 3 distinct layers of bituminous concrete over the bricks. The bottom most layers appeared to be a type 2 gradation with slag aggregate and a coal tar binder. Over that were 2 courses of type 1 mix with natural sand and gravel aggregate and

asphalt binder. The overall thickness of the cores recovered varied from 2-1/4 inches to 4-3/4 inches. All the bituminous concrete layers showed deformation. All but one of the cores came cleanly off the brick, indicating little or no bond to the underlying bricklayer.

Based on the analysis of the cores and project conditions, Flexible Pavements offered the following suggestions for rehabilitation:

It is generally held that rutting of asphalt concrete materials within 4 inches of the surface cannot

be positively prevented by simply covering with more stable materials. The present situation is compounded by the potential layer of weakness at the surface of the brick, which could allow even the most stable materials to slip on the brick. The only treatment, which could reliably be expected to prevent future rutting, would be to reconstruct the pavement by removing the existing asphalt and brick to the existing concrete base and placing a new overlay of stable asphalt materials. Although we did not have complete information upon

which to base a pavement design, the 36,000 vehicles per day and 8% trucks suggests that 8 inches total asphalt over the 9-inch concrete base would



The existing asphalt surface on Broadway Street was severely deformed from traffic and distressed from age.



Comparison of cores taken across one lane show the extent of the deformation that has occurred.

treatment would likely be insufficient to correct the deformation, but that a coring or trench study should be conducted to verify the extent of the deformation. Accordingly, Wade-Trim hired Solar Testing Laboratories to take cores at locations of maximum

Garfield Heights, continued on page 13

seem a reasonable structural design. A suggested pavement build up could consist of 4 inches of item

301, 2-1/2 inches of item 446, type 2 heavy traffic design with a SBS polymer modified, PGM 76-22 binder and 1-1/2 inches of item 446, type 1H, PGM 76-22.

Alternatively, if funding is not available for major rehabilitation, consider removing all the existing asphalt to the surface of the bricks in areas that are severely rutted and replace with a total of 4 inches of intermediate and

surface courses as described above. Conventional wisdom indicates using a rubberized tack coat (702.13) to improve adhesion to the bricks. However, in this case use of such tack could lead to a problem with the trucks and paver pulling up the bricks. Consideration should be given to placing the rubberized tack on the bricks as a seal coat

application of 0.20 gal/sy with a #9 cover aggregate at a rate of 0.006 cy/sy (15 lbs/sy).

Existing areas that are only slightly rutted could be milled 1-1/2 inches and resurfaced with 1-1/2 inches of item 446, type 1H, PGM 76-22. While this treatment cannot be expected to completely preclude future rutting, performance should be greatly improved over the existing.

There are alternatives to the materials suggested above. ODOT District 12 has had success in preventing deformation using an item 448, type 1 mix modified with the addition of 3% polymer and 3 lbs/ton polyester fibers. The Turnpike has specified a rut-resistant mix for use at the toll plazas composed of all crushed aggregate and a heavy polymer

modified PG 76-22 binder. Either of these materials could be substituted for the surface course if local

experience recommends.

After considering these suggestions, Wade-Trim proposed a more extensive rehabilitation of Broadway Street. The City of Garfield Heights sought and received funding from the ODOT District 12 urban paving program equal to the cost of 80% of a mill and fill resurfacing and 50% project funding from State issue 2 funds. The contract was let to the Schloss

Paving Company in the spring of 2001 and work began on June 16th. Based on funding constraints and conditions, Garfield Heights chose to remove the bituminous concrete and bricks from I-480 to the south end of the bridge 5,000 feet north of I-480. After concrete base repair, the project will place 8 inches of new asphalt concrete consisting of 4

inches of 301, 2-1/2 inches of 446, type 2, and 1-1/2 inches of 446, type 1H. The surface and intermediate courses will have polymer-modified binders, PG76-22M.

On the balance of the project, Garfield Heights is using a more modest rehabilitation consisting of removal of the bituminous concrete overlay from the surface of the bricks, leaving the bricks in place. On this they are

placing a heavy tack coat, 0.2 gal/sigh of rubberized liquid asphalt, 702.13, 2-1/2 inches of 446, type 2, PG76-22M and 1-1/2 inches of 446 type 1, with polymer and fiber modified binder. In the center lanes where deformation is negligible,



Severely distressed asphalt is milled to the bricks in the curb lane while the center lane is milled for a single course inlay.



Removal of the bricks down to the 9-inch concrete base proceeded rapidly.

Garfield Heights, continued on page 16

## FPO EXECUTIVE DIRECTOR REALIZES DECADE LONG DREAM

# Asphalt Adds Value

After starting as Executive Director with Flexible Pavements in 1992, it didn't take me too long to figure out that I didn't want to spend 3 hours every day of my life commuting back and forth to our existing home in Dayton. As such, the search was on for a home in the Columbus area. We found a suitable place near Worthington that was inside the outerbelt (one of my criteria because of traffic). The only problem

was, it had a concrete driveway. I have felt guilty about that ever since. doesn't seem right to me that the Executive Director of Flexible Pavements ought to have a concrete driveway. The only



New asphalt driveway finished in simulated brick pattern.

saving grace was that it's deteriorated condition was a good example of why you shouldn't have a concrete driveway in the first place and helped me negotiate a lower price for the house. With kids in college, and then getting married, we had been putting off the expenditure of getting the drive replaced. Finally, last year, my wife said that it was to the point where she was embar-

rassed to have anyone come over because of the drive, I should get it taken care of, and we would somehow figure out how to pay for it.

With that green light, I went to work. I knew that for a new highway, asphalt would save the customer 20% to 40% in construction costs. However I really didn't have a good feel for the residential market. To satisfy my curiosity, I got prices for both a new concrete and a new asphalt

driveway. I was pretty surprised when the price quote for the concrete drive was twice that of an asphalt drive. At that point, I was glad I didn't work for the concrete industry and have to spend that kind

of money for a new drive!

While living in Dayton, I had seen some streets paved with asphalt that looked like bricks. Called Streetprint®, it involved rolling a brick pattern into the asphalt surface and then painting it a brick color. I had also seen some commercial

**FPO Executive Director**, continued on page 15

# FY2002 TRANSPORTATION APPROPRIATIONS BILL SURPASSES T-21 FUNDING

Safety of Mexican Trucks Jeopardizes Package Both the House and Senate passed versions of the 2002 Transportation Appropriations Bill that exceeds the funding guarantees of T-21. The differences between the two bills must be resolved before funding for FY2002, which begins October 1st, can proceed.

The House-passed bill (HR 2299) sets highway funding at \$31.7 billion. The Senate-passed bill (S 1178) provides even more money with \$31.9 billion set for the highway program. By comparison, the FY2001 funding level was at \$29.7 billion. Both bills also provide increased funding for transit, airports and the Motor Carrier Safety Program. Both bills also contain provisions that establishes a complicated regulatory process that both the U.S. and

Mexican Governments must comply with before Mexican trucks are allowed to operate in the U.S. The President has said he will veto the bill unless the Mexican truck provisions are modified.

In light of the World Trade Center tragedy, it is doubtful that any appropriation bills will pass before the October 1st deadline. In all probability, Congress will pass broad legislation to continue programs at existing funding levels on a temporary basis. No one can predict when things in the Nation's Capital will get back to normal, and when they do, Congress will have to find money to fund legislation it is passing to deal with the fallout from the World Trade Center diasaster.

## BYE BYE 404 - ODOT REWRITES SPECIFICATIONS

Like its predecessor T-35, 404 is about to become a thing of the past. A staple for specifiers across Ohio, 404 will no longer exist when the Ohio Department of Transportation issues its newest Construction & Materials Specification book in January, 2002.

Following a nationwide trend to develop clearer, more concise specifications the Department of Transportation embarked upon a journey last year to weed out specifications it no longer uses and incorporate changes in procedures of existing specifications. A major portion of the rewrite is a change to the use of active voice, imperative mood. What's that, you ask. Ask any parent. They can tell you.

In today's specification language, a parent instructing their son Johnny might sound something like this . . . "Johnny shall complete all his schoolwork before he is permitted to do anything else." The active voice, imperative mood would make the same direction sound more like . . . "Get your schoolwork done. Now!"

Why the move to active voice, imperative mood? Two reasons – First, to provide clarity to the specification. This ODOT hopes will help reduce claims. Secondly, to reduce the amount of verbiage thereby thinning the spec. book.

As for the asphalt specifications, ODOT will be dropping its traditional mixture specifications. Those specifications, 402, 403 and 404 will no longer be used to designate asphalt mixtures since the Department has moved to using quality assurance (QA) quality control (QC) specifications. Taking their place will be Items 442, 446 and 448. Item 442 is a new item. It incorporates the superpave requirements previously specified under Supplemental Specification 858. Items 446 and 448 have been around for a long time. 446 is ODOT's density specification, designed to ensure mixes are compacted to their optimum air void content. Its use is only where the pavement is being placed in a uniform layer

Bye Bye 404, continued on page 16

#### FPO Executive Director, continued from page 14

and residential work using the same process in the Columbus area. In fact, the winner of FPO's Special Use Award last year was for a Streetprint® drive and patio area at a residence in Upper Arlington, a Columbus suburb. When I mentioned this to my wife, she was very interested and wanted me to show her how it looked. One evening we drove past the Upper Arlington job and that was all it took. She really liked it and thought it would be great for our home. After contacting FPO member, Decker Construction, a contractor licensed for the process, we reviewed the different patterns and colors and decided on the red brick option.

The process is the brainchild of the paint manufacturer who was looking for a market for a really tough paint he had developed. It involves using a steel grid placed on the asphalt surface and then rolled while the asphalt is still hot. This imprints the pattern, which can be bricks, pavers, cobblestones or whatever. When the surface cools, it is then painted the desired color. After that, a clear sealer is applied. Then white sand is broomed into the depressions and another coat of sealer is applied to hold the sand in place. The

result is a surface that takes an expert to tell the difference from the real thing. While more expensive than a regular asphalt surface, it is about 60% the cost of real pavers and eliminates grass growing in the cracks and surface depressions.

The litmus test was when my wife came home, saw it and said "I love it!" Mission accomplished. I have an asphalt drive **and** a happy wife.



Asphalt also replaced existing concrete walk from driveway to front entrance and was finished in simulated brick to match drive.

#### Garfield Heights, continued from page 14

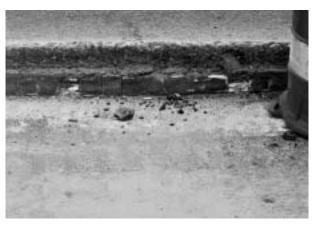
they are only milling and placing the surface course.

Costs for the major items of work include:

| Item   | Cost        |
|--|-------------|
| Removal of 4 inches of bituminous concrete       | \$ .75/sy   |
| Removal of bricks                                | \$ 4.30/sy  |
| Milling 2 inches of asphalt pavement             | \$ .65/sy   |
| Concrete base removal                            | \$13.75/sy  |
| 9-inch concrete base replacement                 | \$43.75/sy  |
| 0.2 gal/sy rubberized tack coat 702.13           | \$ 1.50/gal |
| 446, intermediate course, type 2, PG76-22M       | \$65.00/cy  |
| 446, surface course, type 1H, PG76-22M           | \$80.00/cy  |
| 446, surface course, type 1, polymers and fibers | \$85.00/cy  |

Wade-Trim's engineering of this project provides an excellent case study of treating an existing rutting condition. Whether you follow the high stress guidelines in the Flexible Pavements of Ohio, Design and Construction Guide, the ODOT Pavement Design and Rehabilitation Manual, or the Asphalt Institute's High Performance Intersections, the process is pretty much the same:

1. assess the existing pavement distress conditions and future traffic loads,



Removal of the asphalt surface and bricks leaves room for 8 inches of new, rut-resistant asphalt.

- 2. take and analyze cores to determine the extent of the deformation,
- 3. specify removal of all the deforming asphalt layers, and
- 4. replace them with a structurally adequate thickness of rut-resistant asphalt materials.

Flexible Pavements of Ohio thanks the staff of Wade-Trim Ohio, Inc. for the opportunity to offer suggestions regarding this project.

#### Bye Bye 404, continued from page 10

thickness. Item 448 is ODOT's workhorse specification. It can be used for any application. The mixture is different from 446 only in that its acceptance is based upon mix proportions. Acceptance methods for all asphalt mixes will follow the model of ODOT Supplemental Specification 1056 – soon to be renamed as Item 403, Bituminous Concrete Quality Control and Acceptance.

The change to ODOT's specifications will likely require local governments and consultants to take a greater interest in the asphalt materials they specify. Gone are the days of simply specifying 402 and 404. Specifiers will need to better understand the implications of using the various new ODOT specifications.

Flexible Pavements of Ohio stands ready to assist specifiers in understanding and implementing the new specification requirements. In future additions of Hot Mix Asphalt Current News we will provide a more in-depth look at the individual specifications.

Here's what the new item numbers will look like:

- 301 Asphalt Concrete Base
- 302 Asphalt Concrete Base (Large Stone Mix)
- 308 Asphalt Treated Free Draining Base
- 320 Rubblize and Roll, Existing Reinforced Concrete Pavement
- 321 Cracking and Seating, Existing Plain Concrete Pavement
- 401 Plant Mix Pavements General
- 402 Asphalt Concrete Mixing Plants
- 403 Asphalt Concrete Quality Control and Acceptance
- 407 Tack Coat
- 408 Prime Coat
- 409 Sawing and Sealing Asphalt Concrete Pavement Joints
- 422 Chip Seal
- 423 Crack Sealing, Hot Applied
- 441 Contractor Mix Design and Quality Control - General
- 442 Superpave Asphalt Concrete
- 446 Asphalt Concrete
- 448 Asphalt Concrete

#### Sheldon G. Hayes, continued from page 7

innovative financing. The Butler County TID was formed in 1994 and was successful in selling bonds for the local share of the highway. The bonds are to be repaid using a sales tax implemented throughout the district.

The 10.7 mile, limited access, divided highway was divided into three contracts, which could be bid on individually and/or as a group. Kokosing Construction Company was the successful bidder with a \$92,761,970.34 bid for the whole group. The hot mix asphalt pavement is 352mm thick on 100mm of asphalt treated base and 150mm of aggregated base and required a

5-year warranty. Groundbreaking ceremonies were held on May 15, 1998 and incremental openings occurred during October, November and December of 1999, 8 months ahead of schedule, earning Kokosing all contract incentives for early completion. About 300,000 tons of paving on one of the three contracts was subbed out. Kokosing completed the other 300,000 tons of paving from the other two contracts in just 104 paving days, collecting full project incentives for smoothness.

We wish Kokosing the best of luck as they pursue HMA's highest honor.



By permission of Tony Cochran and Creators Syndicate, Inc.

# NAPA & ARTBA JOIN FORCES WITH SMITHSONIAN INSTITUTION TO LAUNCH PERMANENT EXHIBITION ON U.S. TRANSPORTATION DEVELOPMENT

Construction Industry Groups Commit \$2 Million

The National Asphalt Pavement Association (NAPA) and the American Road & Transportation Builders Association (ARTBA) have teamed up to make the single, largest-ever association financial commitment to public education by the construction industry.

The two organizations have pledged a combined \$2 million to support a state-of-the-art permanent exhibition called "America on the Move" at the Smithsonian's National Museum of American History, in Washington, D.C. The exhibition, scheduled to open in Fall 2003, will provide an educational experience on the importance of transportation and its underlying infrastructure to the nation's history and economy.

"This project in its totality represents a unique, once-in-a-lifetime opportunity to educate the public about highways," said NAPA Chairman of the Board R. Wayne Evans. "America on the Move will reach 6 million visitors, many of them young American students, each year. Millions more young people will be exposed to educational materials relating to the exhibition in the classroom, on television, and via sites on the World Wide Web."

NAPA's support will come through the NAPA Research and Education Foundation (NAPAREF), according to Mac Badgett, Chairman of NAPAREF's Board of Trustees. "Americans value their mobility, and the new exhibition will showcase the role that roads and highways play. Visitors to the exhibition will walk away with a new understanding and appreciation of how transportation development has helped make America the great nation it is."

The 26,000 square-foot exhibition will be the foundation of the most important public education program ever undertaken on transportation in the United States. It will focus on the impacts of infrastructure built since 1876. Using state-of-the-art media and interactive presentation techniques, "America on the Move" will tell the story of transportation history through period settings using artifacts from the Smithsonian collection. The Interstate Highway System will be a major part of the exhibit. The

rail, transit, port and air development stories will also be presented.

"The transportation construction market depends on continued public support for increased infrastructure investments," ARTBA President & CEO Pete Ruane said. "This exhibit and the collateral Internet website, books, television programs and other Smithsonian planned activities will reach millions of Americans, both young and old, with the important story of transportation in our history and how it shaped the nation. As ARTBA prepares to commemorate its 100th anniversary in 2002, it is only fitting that our association play a major role in this special education project that celebrates a century of work by the men and women of our industry."

Ruane said the high profile "America on the Move" exhibition at the world-renowned Smithsonian will go a long way in raising public awareness about the need for increasing investment, efficiency and safety of our national transportation network.

The Smithsonian Institution is recognized as one of the world's premier educational facilities. The National Museum of American History, the third most popular museum in the world, traces American heritage through exhibitions of social, cultural, scientific and technological history. Collections are displayed in exhibitions that interpret the American experience from Colonial times to the present. The museum is located at 14th Street and Constitution Avenue, NW, and is open daily from 10 a.m. to 5:30 p.m., except for December 25th. For more informavisit the museum's website http://americanhistory.si.edu or call 202-357-2700.

One of the other sponsoring partners in the "America on the Move" exhibition is the U.S. Department of Transportation.

# SENATOR JEFFORDS' PARTY SWITCH PUT DEMOCRATS IN COMMITTEE LEADERSHIP

# Senate Plays Musical Chairs

In the March 2001 issue of Hot Mix Asphalt Current News, there was an article that identified those individuals in the State and Federal Government who were in committee and leadership positions pertinent to the asphalt and road construction industry. The U.S. Senate positions have now changed. Senator Jeffords' switch from the Republican Party to an Independent now leaves the Senate with 50 Democrats, 49 Republicans, 1 Independent and puts the Democrats in the majority. This means that all Senate Committee Chairmen will change from Republicans to Democrats. This is the new line up:

| Senate Committees                                  | Previous Chairman     | New Chairman          |
|--|-----------------------|-----------------------|
| Environment and Public Works<br>Committee (EPW)    | Bob Smith (R-NH)      | James Jeffords (I-VT) |
| EPW Transportation and Infrastructure Subcommittee | James Inhofe (R-OK)   | Harry Reid (D-NV)     |
| Appropriations Committee                           | Ted Stevens (R-AK)    | Robert Byrd (D-WV)    |
| Appropriations Transportation Subcommittee         | Richard Shelby (R-AL) | Patty Murray (D-WA)   |

Reviewing Senator Jeffords past voting record shows that he supports using highway funds for transit projects and supporting Amtrak and that he opposes suspension of the federal gas tax to reduce the price of gasoline. He is a strong environmentalist which led to disagreements with the Bush Administration and his split with the Republican Party.

# EFFORT GROWS TO GET GASOHOL TAX BACK TO THE HIGHWAY TRUST FUND

# \$400 Million Per Year At Stake

Buoyed up by recent successes in getting the money that comes to the Highway Trust fund actually spent and transfer back to the Highway Trust Fund of the 5¢ gas tax that had been going to the General Fund, highway proponents are now targeting recouping the gasohol tax diversion.

To encourage the production and blending of ethanol, a derivative of corn, with gasoline, the Congress passed legislation to subsidize the ethanol producers.  $5.4\phi$  of the  $18.4\phi$  federal gas tax on every gallon of the blended fuel, called gasohol, is diverted back to the ethanol producer. Additionally,  $2.5\phi$  of the tax on gasohol is diverted into the General Fund. Efforts to reverse this have never gone anywhere because of opposition from legislators representing the corn producing states. This latest effort, however, only targets the  $2.5\phi$  that goes to the General Fund. This generates about \$400 million per year.

Senate Finance Committee Chairman Max Baucus (D-MT) introduced the Highway Trust Fund Recovery Act (S 1306) on August 1st, which would redirect the 2.5¢ per gallon on gasohol from the General Fund back to the Highway Trust fund. Both Ohio Senators, George Voinovich and Mike DeWine, were among the 18 co-sponsors of the bill. In the House, Representative Rob Portman from Ohio's 2nd Congressional District, introduced similar legislation (HR 2808) on August 2nd. The movement had some steam before the World Trade Center tragedy but will be put on the back burner for now along with most everything else. Right now it is difficult to project what the future will hold as Congress and the Nation turn their focus to eliminating terrorism.