

# SCANNER

NEWSLETTER OF THE AMERICAN SOCIETY OF  
HIGHWAY ENGINEERS



April - 1995 - 2

## PITTSBURGH CONVENTION IN '95 PLAN NOW TO ATTEND

What's missing from **PITTSBURGH'S**  
ASHE National Convention?

**"UR"** missing out if you don't register to attend the May 18th to 21st, 1995 Convention at the Green Tree Marriott hosted by the Pittsburgh Section.

*Green Tree Marriott - Call Today*  
*Hotel Reservations: 1-800-525-5902*

We mentioned affordability, but did we say how affordable? Can you believe a room rate of \$64/night? Well, that's what we've negotiated with the **Green Tree Marriott**. For the "Gateway to the Future," that's a price from the past!

Be sure to bring a hardy appetite for Thursday's taste of Pittsburgh's favorites. We have incorporated a variety of ethnic groups in the food selection process and hopefully you'll find your favorite.

**REMEMBER:** Friday, 8:30 a.m. sharp is rollcall for the Annual Meeting. Make sure you are there to support your Section!

Our **Technical Sessions** will follow the opening ceremony. In keeping with our convention theme - "*Gateway to the Future*," our Technical Sessions are geared to explore new areas of cutting edge technology and how they will affect our industry in the 21st century.

### TECHNICAL SESSIONS

Find out what the future has in store for America's transportation system and what the picture is for funding the next generation of highway projects. **Keynote Speaker - Thomas J. Ptak, FHWA, Washington, D.C.**

Learn how various cities are applying new technology in



the development of Intelligent Transportation Systems and what future developments lie ahead. **Kenneth M. Keitt, Frederic R. Harris, Inc.**

See how computer technology allows us to visualize proposed highway and bridge projects and to better communicate conceptual designs. **Christian A. Pegher, Michael Baker, Jr., Inc.**

Hear about Metrication and how it will be applied to the design and construction of tomorrow's transportation facilities. **R. Scott Christie, P.E., PA DOT.**

Learn how "state-of-the-art" geotechnical engineering solutions are applied to solve complex problems on one of America's largest construction projects. **Seth Pearlman, P.E., Nicholson Construction Company.**

Get the lowdown on how environmental problems can affect major highway projects and what can be done to resolve them. **Michael D. Loy, Skelley & Loy.**

*Continued on page 8*

**"GATEWAY TO THE FUTURE"  
HOSTED BY THE FLAGSHIP SECTION  
MAY 18 TO 21, 1995**



# Improve your asphalt paving and chip seal programs

How do you  
prevent rutting and bleeding  
in summer?

The same way you  
reduce cracking and raveling  
in winter...



With *Rub-R-Road* latex additives for asphalt pavements. They work year round to improve pavement performance and life. *How do we know?* For over 40 years *Rub-R-Road* latex additives have proven to provide communities with better roads at lower cost.

Start building tougher, longer-lasting, cost-effective pavements today.

Please send Information how  
*Rub-R-Road* paving materials can help:

- ☐ Reduce maintenance costs
- ☐ Retain curb heights by thinner application
- ☐ Retard aging of bituminous pavements
- ☐ Resist temperature extremes
- ☐ Minimize thermal and fatigue cracking
- ☐ Improve aggregate retention
- ☐ Resist deterioration due to moisture
- ☐ Prevent bleeding, rutting and distortion
- ☐ Improve skid resistance

Name \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

Phone \_\_\_\_\_

( ) /

Rubber Compounds  
For Better Paving  
™ Since 1951

**rub-r-road** <sup>TM</sup>  
JNC.

**Call Today 800-992-4995 or  
Fax 216-678-7054**

PO Box 456 Kent, Ohio 44240

# NATIONAL BOARD NEWS

The National Board met for a regular board meeting on January 13, 1995 in Pittsburgh, Pa. National President Raymond Petrucci presided over the meeting. The following are highlights of the committee reports and actions:

## 1994 NATIONAL ASSESSMENT:

At the meeting several Sections were identified as not having promptly paid their assessment to National. The grace period extends to December 1st of the fiscal year; this has become an increasing problem for National which resulted in borrowing from reserves to satisfy operating expenses. A motion was made and approved to change the grace period to October 1st, effective immediately. Sections must drop members with unpaid dues by this date or be held responsible for their assessment.

## NEW SECTIONS COMMITTEE:

Chairman David Greenwood presented reports on the progress of numerous potential new sections primarily located in the Southeastern United States. Much discussion focused on National's high cost to organize and charter new sections. To resolve this, a motion was passed to increase the new member initiation fee to \$25.00 immediately for new sections. For all other sections

the increase will be effective June 1, 1995. Another motion passed to rescind the waiver of the first year assessment for all new sections.

## REORGANIZATION COMMITTEE:

Chairman Tim Haslett discussed various Section responses on Draft #2 of the proposed Reorganization Plans. Much discussion focused on new Sections. The committee will fine tune the plan and distribute Draft #3 to Sections for comments.

## EXECUTIVE DIRECTOR COMMITTEE:

Chairman Mike Martin and Director Lisle Williams had arranged for a representative of an "Association Management Services" firm to give a presentation to the Board Members in pursuit of obtaining information regarding outside management services. The Executive Director Committee was then directed to prepare a cost and staffing estimate for several focus areas and to prepare a graduated implementation plan for review at the next Board meeting.

## CONVENTION COMMITTEE:

Plans for the Pittsburgh '95 convention are progressing nicely. Cooper Curtis reported the hotel contract for the Orlando '96 conven-

tion has been finalized. Some discussion centered on ASHE liability regarding "open bar" during ASHE activities and/or conventions. Sections are encouraged to investigate this liability issue.

## NOMINATING COMMITTEE:

Chairman Roland Nesslinger announced the nomination for 1995/96 ASHE Officers and Directors. A motion was approved by the Board to rescind the policy of providing a Director for each new Section in a new state. Subsequently, Central Dakota Section was assigned to the Triko Valley Zone. ■



P.O. Box 547186 • Orlando, FL 32854-7186  
Pager (800) 759-8888, P.N. 2160780 #  
Office (800) 476-1228 Or (407) 740-5778



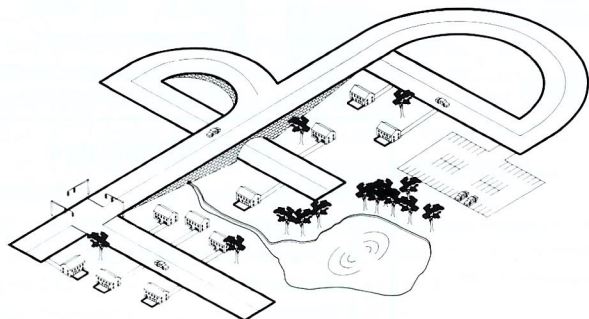
**alfred benesch & company**

CONSULTING ENGINEERS

P.O. BOX A • 474 NORTH CENTRE STREET • POTTSVILLE, PA 17901  
717/622-4055 • FAX 717/622-1232 Corporate Office: Chicago, IL

## Traffic Planning & Design, Inc.

Traffic Studies  
Highway Design  
Environmental Impact Analysis



1003 Egypt Road  
Oaks, Pennsylvania 19456  
(215) 935-5620  
Fax (215) 935-5626

## P. Joseph Lehman, Inc.

Consulting Engineers

P.O. Box 419  
Hollidaysburg, PA 16648  
(814-695-7500)

.....providing bridge and roadway design  
and related Civil Engineering services.....

## HDR Engineering, Inc.

### Transportation Specialists

• Bridges • Highways • Tunnels • Transit  
• Planning • Railroads • Airports



3 Gateway Center  
Pittsburgh, Pennsylvania 15222

Telephone: 412 497-6000  
Fax: 412 497-6080

Over 75 Years of Engineering Excellence



# ACCELERATED TESTING OF BRIDGE EXPANSION JOINTS

Prepared by D. Michael Waddell, P.E., HNTB Corporation, Engineers, Planners, Orlando, Florida 32809

In recent years there has been an increasing awareness throughout the engineering community as to the importance of bridge joints and joint materials in the design and maintenance of bridge structures. A bridge joint must provide to the various superstructure elements the same level of protection from exposure that would otherwise be provided by the deck in addition to accommodating all movement transmitted by the superstructure to the joint. The joint materials must be durable enough to withstand the wear and impacting of heavy traffic loads, and must be resistant to roadway oils and chemicals, debris, ultraviolet rays, and other harmful influences. Yet, the joint must also remain flexible and resilient throughout its life to accommodate numerous cycles of temperature extremes.

Histories and documentations on various bridge structures indicate that most bridges have a life expectancy in excess of fifty years. However, most bridge joints experience problems within the first five to ten years of life, and many joints experience some failure within the first six months to one year after installation. Engineers and manufacturers continue to develop new joint configurations and materials in an attempt to improve upon this poor record of serviceability. However, testing methods are limited and most promising new joint products must be placed in live bridge installations to be tested. While this method of testing is certainly the most reliable and realistic, it can require several years of monitoring to prove a joint product acceptable. Literary research has not revealed any previous methods of full-scale testing or modeling to predict the life expectancy of expansion joints, yet full-scale accelerated testing can prove to be a timely and economical method of continuously monitoring the performance of bridge joints.

The University of Central Florida (UCF) has constructed a full-scale accelerated testing facility comprising of a 50' diameter test truck, a variable weight loading apparatus, and a power source. Within the track are two 2-span bridge decks, 12' long by 6' wide with an 8" reinforced concrete slab and transverse center joint. The total weight

of the loading apparatus can vary between 30,000 lbs. and 75,000 lbs, and is evenly distributed to three dual-wheel assemblies, each driven by hydraulic motors. The entire loading device is powered by a 220 horsepower diesel engine and is capable of speeds up to 30 miles per hour.

A testing program was developed to evaluate the performance of several bridge expansion joint systems under the effects of heavy traffic wear, abrasion and impact loading. Several rounds of testing have been completed that have evaluated compression seals, strip seals, winged seals and poured elastomer sealants of various configurations from numerous manufacturers.

The results of the joint performances under full-scale live loading for a four-week test period were used to establish a simulated life expectancy (SLE) of normal highway use for each joint system. The SLE is tailored to site-specific applications through the use of actual traffic volumes, laneage configurations, wheel load requirements, and joint sizes from bridges being considered for joint installations. A five-year joint life was determined as a minimum requirement.

The simulated life durations calculated during the rounds of testing were consistent with actual field observations and maintenance records researching for those same joint products. Additionally, several consistencies in the various joint deficiencies were observed and noted. Product weakness were identified, which allowed manufacturers the opportunity to make modifications to physical characteristics and chemical properties of their joint systems.

This method of accelerated testing has proven to be a timely, cost-effective means of obtaining realistic performance results that would otherwise be limited to actual installations on interstate bridges. Such installations can hinder close monitoring and require years of service to supply useful joint performance histories, as well as being cost prohibitive for new product development due to material quantity and maintenance of traffic requirements. ■

**P  
H  
I  
A**

## Membership Means Continuing Education...

**YES!** I know how important good highways are to the economic development of Pennsylvania. I want to join PHIA and receive newsletters and information promoting highways, bridges and the economy.

- ☐ Enclosed is my check for \$\_\_\_\_\_, payable to PHIA.  
☐ Bill me

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

Questions: Call Ron L. Geist, Managing Director, at (717) 236-6021.



**phia**  
"the transportation people"

800 NORTH THIRD STREET  
HARRISBURG, PENNA. 17102

## Dues Structure

(Check one)	(Minimums)
<input type="checkbox"/> Individual	\$ 30
<input type="checkbox"/> Chamber/Assoc./Service Organization	115
<input type="checkbox"/> Business	170
<input type="checkbox"/> Sustaining	600



## PENNSYLVANIA COMPANY SPONSORS AIR POLLUTION STUDY OF COLD MIX ASPHALT PAVEMENTS

How do you provide data on comparative air pollution emissions from different roads?

That question was asked of Heilman Pavement Specialties by PennDOT Secretary Howard Yerusolim, P.E. Before he would approve HGP, he requested data of the air emissions given off by HGP, Heilman's new cold mix asphalt paving material, compared to PennDOT's standard cold mix pavement, FB-1. The concern expressed was that HGP would not add to the existing air emissions from the use of FB-1 and other emulsified asphalt paving mixes placed in Pennsylvania.

Since there was no established test method to answer the Secretary's concerns, Heilman co-sponsored a two year, \$250,000 Ben Franklin study with Penn State's Fuel Science Program. Developing a test method based on modifications to the AASHTO T-59 distillation method for

emulsified asphalts, Penn State documented that air pollution emissions from HGP are seven times less than the emissions from FB-1. On the basis of on the Penn State research and test method, Secretary Yerusolim approved HGP.

Improvements in emulsified asphalt technology are responsible for the lower air emissions, according to Heilman. HGP is a stockpile material currently used for patching and paving roads in Pennsylvania. The test method developed for determining the volatile organic compound (VOC) air emissions from emulsified asphalt pavements is being circulated among industry groups at the present time.

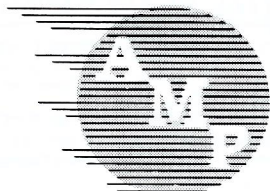
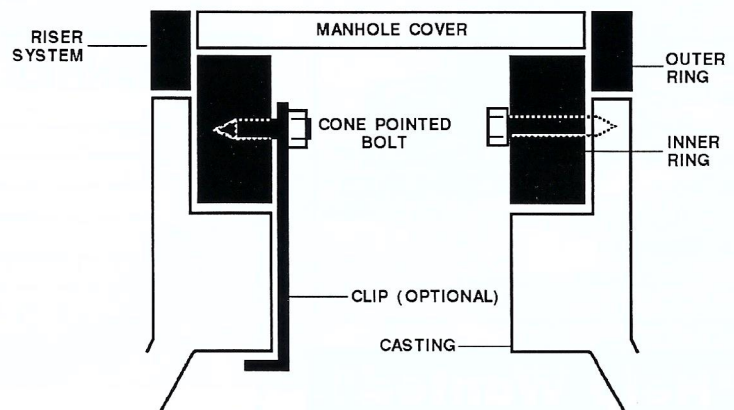
William B. Heilman, the company founder and president, operates the company with his three sons, William B., Jr., Glenn and David. All are members of the ASHE Mid-Allegheny Section. ■

## SCHOLARSHIP AWARDS ANNOUNCED

The Southern New Jersey Chapter of the American Society of Highway Engineers awarded four William Reeves Memorial Scholarships in the amount of \$1,000 each. The scholarship is named in memory of William Reeves, former Gloucester County Engineer. The four recipients for this year include Dena Lynn Johnson of Willingboro, a senior at Drexel University; Stephen M. Mazur, Jr. of Blackwood, a junior at Villanova University; Kristian Bellotti of Deptford, who is currently in his second year at Villanova University; and Kristine Marie Connors of Cherry Hill, a senior at the New Jersey Institute of Technology. ASHE has awarded sixteen scholarships in the seven years since the scholarship fund was established. The William Reeves Scholarship is awarded to civil engineering students that reside in southern New Jersey and attend a regional engineering school. ■

## YOU CAN SAVE MORE IN '95 WITH THE MOST DEPENDABLE CASTING GRADE ADJUSTMENT RISER SYSTEM AVAILABLE

- Complete Line Of Catch Basin, Curb Inlet, Manhole, and Monument Box Risers
- Available in 1/4 Inch Height Increments
- State Approved Steel Frames and Grates
- American Made by American Craftsmen
- Domestic A-36 Steel Construction
- Fabricators of Ferrous and Non-Ferrous Products for the Highway Industry



### ANDREWS METAL PRODUCTS, INC.

745 Andrews Avenue • Youngstown, Ohio 44505  
(216) 744-3900 Fax (216) 744-1044  
1-800-837-3901



# A WORLD OF BRIDGES

## 12th ANNUAL INTERNATIONAL BRIDGE CONFERENCE AND EXHIBITION

"A World of Bridges" is the theme for the 12th Annual International Bridge Conference and Exhibition, to be held June 19-21, 1995, at the Pittsburgh Hilton and Towers. Sponsored by the Engineers' Society of Western Pennsylvania, the three-day conference is recognized as the most comprehensive, broad-based and authoritative forum on bridge topics.

One of the main attractions of the Conference is the **IBC EXPO** which includes nearly 100 exhibitors showcasing the latest in bridge products and services.

The IBC will feature **eight technical sessions** covering current issues and topics in bridge engineering. Nearly 60 paper presentations will deal with subjects such as Rehabilitation and Strengthening; Load Testing and Instrumentation; Long Span Bridges; Design/Build Techniques; Construction Techniques and Planning, Codes and Specifications; and Seismic Matters. A full afternoon session will be devoted to the developments and advances made in the **State of West Virginia, the IBC 1995 Featured State**. In addition to the technical sessions, five half-day

**Educational Seminars** will be offered. These seminars will provide an in-depth look at the following subjects: LRFD Steel Design Examples; LRFD PS Concrete Design Examples; An Update on Bridge Management Systems; Metric Design; and Historic Bridges Rehabilitation.

To further enhance its technical program, the IBC has added **several new items** to this year's agenda. A **Proprietary Session** will feature **NEW** bridge products, methods and applications. **Special Interest Sessions** will also be offered on tentative topics such as Painting, Galvanizing, Litigation, Partnering and Bonding.

The IBC's programs and activities provide bridge professionals with an excellent venue for an update on state-of-the-art bridge technology. A variety of social functions have also been scheduled to provide attendees with **exceptional networking opportunities**.

For more information on the 12th Annual International Bridge Conference, or to register, contact the Engineers' Society of Western Pennsylvania at 412/261-0710. ■

### THE SCANNER

- Published quarterly • Over 3,700 Circulation
- 29% are State D.O.T. Employees
- 44% are Engineering Consultants
- 13% are Contractors
- 14% are Related Professions
- 44% of the membership have a professional status.

### RATES/SIZES

	Full Page	1/2 Page	1/4 Page	Bus. Card	Want Ad
1X	\$250	\$130	\$75	\$40	\$40
2X	235	120	70		
3X	225	110	60		
4X	200	100	50		

Spot Color - Add 15%

Full Page 7-5/8" x 10"  
Half Page - 7-5/8" x 5" or  
3-13/16" x 10"

Qtr. Page - 3-13/16" x 5"  
Bus. Card - 2-1/2" x 1-1/2"  
Want Ads - 20 Words or Less  
Special Ads, call Editor.

\*Note: Spot Color is determined by the color used in the issue.

### ADVERTISING AND COPY DEADLINE FOR THE NEXT SCANNER ISSUE:

May 31, 1995

MAIL TO: ASHE SCANNER  
c/o Al Kozel  
7 Wood Street, 2nd Floor  
Pittsburgh, PA 15222

- ▲ Transportation
- ▲ Environmental Planning
- ▲ AM/FM
- ▲ Bridge Inspection
- ▲ Construction Management



Headquartered in York, PA:  
717 843 5561  
Other offices throughout the East Coast

## "Help Wanted"

### ENGINEERS ROAD AND BRIDGE

PE required. Send resume.

Lehman Engineers  
P.O. Box 419  
Hollidaysburg, PA 16648

## SCANNER ADVERTISING INSERTION ORDER

From \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TO: ASHE SCANNER  
Al Kozel, Managing Editor  
7 Wood Street, 2nd Floor  
Pittsburgh, PA 15222

Contact \_\_\_\_\_ Phone ( ) \_\_\_\_\_  
Authorized \_\_\_\_\_  
Signature \_\_\_\_\_

TOTAL RUNS

☐ 1x ☐ 2x ☐ 3x ☐ 4x ☐ TFN\*

Date \_\_\_\_\_ Section Affiliation \_\_\_\_\_

Ad Size

☐ Full Page ☐ Half Page ☐ Quarter Page ☐ Business Card ☐ Want Ad ☐ One Color

NOTE: Ads are black-and-white unless color is specified.  
Colors are coordinated with issue press run color

Scheduled Issue  
For Insertion

☐ Winter ☐ Spring ☐ Summer ☐ Fall

Rate / Insertion \$

Total \$

Camera-Ready Art

☐ Attached ☐ To Follow

Want Ad Text

☐ Attached

☐ Payment Enclosed  
☐ Bill Me

Make Check Payable To ASHE



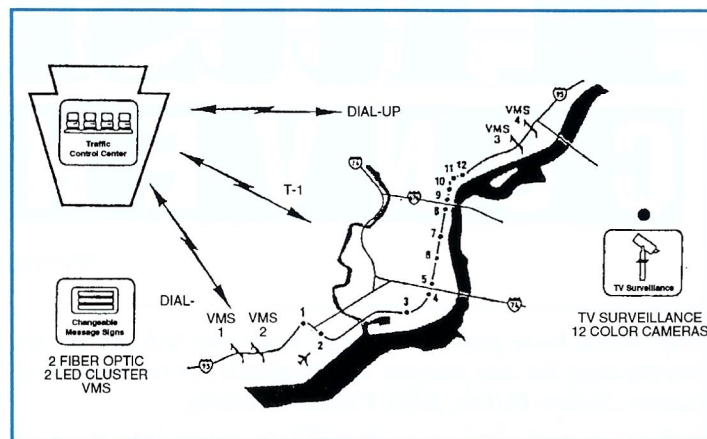
# "ITS" TECHNOLOGY IMPLEMENTATION AND OPERATION

By Doug May, P.E., PennDOT District 6-0 Traffic Engineer

Intelligent Transportation System (ITS) technology has over the past few years grasped the attention of highway planners and designers. Recently this technology has been incorporated in larger chunks of highway construction projects in the Northeast. Some of the more traditional elements (Changeable Message Signs, Television Cameras, Ramp Metering, Highway Advisory Radio, Vehicle Detection Sensors, Fiberoptic Communication Systems and Traffic Control Centers) are becoming more visible on our major interstate, arterial and tollway corridor facilities. Encouraged by the funding opportunities of The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1992 and the "swing-over" of Military, Space and Communications Technology into highway applications, this has proven to be very exciting and creative for highway designers, contractors, and operators. This hightech "rush" of applying creative technology to highway use comes in an age when we are being forced to squeeze more efficiency out of our existing highway infrastructure and trying to give better awareness and more real time information to the traveling public.

Traffic Control Centers in Harrisburg (PA TURNPIKE), St. Davids (PENNDOT), Baltimore (MARYLAND SHD), Arlington (VIRGINIA DOT), Jersey City (TRANSCOM), Hartford (CONNDOT) and Long Island (NYDOT) are beginning to be tied together operationally through a major initiative, the I-95 Corridor Coalition, which includes all the states from Virginia to Maine directly or indirectly influenced by I-95 as the "spine". This initiative has already developed among its members an awareness of the need to share technology successes and to begin attempts to standardize Changeable Message-Sign "messages", Highway Advisory Radio message formats and to come up with one universal emergency cellular phone number. The most immediate success of this initiative is that the states are working together with the FHWA to develop a "seamless" network of highway and transit projects to better serve the traveling public.

In southeastern Pennsylvania, after 4 years of planning and design work, PennDOT has a small Traffic Control Center at the St. Davids District 6-0 Office that monitors 12 miles of the Center City Philadelphia portion of I-95 with 12 TV cameras. Closures or lane restrictions are



coordinated with the Philadelphia Highway Patrol, Samaritania (private highway service patrol), PennDOT Maintenance, and the radio traffic reporting services. Two sets of Changeable Message Signs can be activated to alert motorists entering into an area of increased congestion or roadside obstruction. Two more projects have been let within the last two months and are in place for awarding: An \$8 Million I-476 Project to include 8 T.V. Cameras, activation of 200 loop detectors connected to the St. Davids Control Center by Spread Spectrum Radio, Ramp Metering of 16 Expressway On-Ramps, and a short Fiberoptic T.V. cable run; and a \$2 Million Satellite T.V. Surveillance Demonstration Project that includes 4 fixed dish sites and a remote platform. Design is also underway on a \$2M TV and Changeable Message Sign (CMS) fiberoptic communication system on I-676 and on a \$15M TV and CMS System for the Route 202/I-76 Reconstruction Project.

PennDOT District 11-0 in Pittsburgh is in the final stages of awarding major ITS work to install TV and CMS on I-279 and I-376 and to build a Traffic Control Center at its District Office. New ITS deployment initiatives are under study in the Scranton area on I-81, and on the I-79 link from Erie to Pittsburgh.

The Pennsylvania Turnpike has been in this ITS arena for 25 years with a very extensive microwave communications base and 24 hour Control Center operation in Harrisburg. The Turnpike is considering T.V. Surveillance, fixed VMS and partnering with communication carriers for major fiberoptic conduit links to their already extensive communications and incident management systems.

The planning and implementation of these initiatives in Pennsylvania and our surrounding states is an exciting new direction for our industry at this time. Our biggest challenges will be to obtain and retain skilled and dedicated personnel to operate these facilities, to maximize our coordination with the police and emergency service providers, and to seek creative funding to maintain and upgrade the equipment after it has been installed. ■





# Pittsburgh CONVENTION 95

*Continued from page 1*

Hear about how privatization of highway infrastructure projects may be one answer in the search for new funding sources. **Helen Billak, RRZ Public Markets.**

During our technical tour we will take a trip into the past and learn how two historic landmarks have been renovated as part of Pittsburgh's future transportation system, after first learning about how a century old railroad tunnel is being incorporated into our newest busway. View the major changes in store for downtown Pittsburgh from atop Mt. Washington, then take a ride on the historic Monongahela Incline before taking a walking tour of the newly rehabilitated Smithfield Street Bridge. **James Moorcroft, P.E., Michael Baker, Jr., Inc.; John Mine, Port Authority of Allegheny County; and Thomas Riester, P.E., Mackin Engineering Co.**

**SPOUSES' PROGRAM - Friday**, there's no finer way to view the scenic route of the city of bridges than aboard one of the Gateway Clipper Fleet. Before and after there will be ample time to "shop til you drop" or until the money runs out! You might find a fancy new outfit for the Friday night banquet, or perhaps a comfortable new outfit for Saturday's sightseeing trip.

**Saturday's tour "Saints and Sinners of all Nationalities"** begins at 9:45 a.m. with the bus loading at the front lobby area. The tour will start at **St. Anthony's** on the Northside of Pittsburgh. This is one of Pittsburgh's great hidden treasures and a must to see. Next stop is the **Allegheny Brewery**. After you have a lesson in brewing the finest beer in Pittsburgh, you get a chance to experience the finest beer in Pittsburgh! Their German style pub will be the setting for the German style luncheon. From there it is on to Oakland, home of the **Nationality Rooms**. Each classroom is funded and often designed by renowned architects from that area. On the return trip to the Marriott more of our scenic city will be highlighted.

**HOSPITALITY - Thursday, Friday, & Saturday** - Be sure to visit the hospitality room. We've decided to have only one room for everyone this year. Let us know how you like the change and we'll pass your comments on to next year's convention committee.

**"Man of the Year" - Friday's luncheon.** Since 1973-74 we have chosen a Man-of-the-Year who represents the true spirit of our organization. This year plan on sharing in the accolades to Ronald L. Zook, P.E. by joining us for lunch.

**"Past Presidents' Banquet** takes place Friday night. These

men kept our organization moving through the years. Their leadership skills ensure that we continue to grow while responding to the needs of the members. Join us on Friday evening as we honor our Past Presidents, Magic Moments will be just a dance floor away.

**GEO-TECHNICAL SEMINAR** - Among the many functions at this year's 1995 ASHE National Convention will be a geo-technical (golf) outing available to full registered individuals of the convention. The outing will be held on Saturday, May 20 at the **Ponderosa Golf Course** beginning with tee-times at 10:00 a.m. through 12:30 p.m. The number of golfers is limited to the first eighty (80).

Each participant will be eligible for numerous skill and challenge prizes up for grabs throughout several holes on the course. Each registered golfer will also be eligible for the Grand Prize which included airfare and accommodations for two at the beautiful **Marriott Sawgrass Resort** in Florida.

Maps to the course will be available at the hotel, and transportation for the outing is the responsibility of the golfer.

Due to time constraints, winners of skill prizes and the random drawing for the Grand Prize will be announced later that evening at the Annual Banquet.

The weather conditions for Pittsburgh in late May are excellent for golfing, and the course is always well maintained. We look forward to having YOU join us for an enjoyable round of golf.

**Saturday's Installation Banquet.** Every convention must come to an end and we plan to tantalize all your senses beginning with one hour of Hors D'oeuvres. Next you will enjoy the scent of fresh flowers gracing your table. You are bound to be touched as you listen to the Lord's Prayer. After a toast to all who have gathered here, our banquet will begin. As the gavel is passed and our new officers are installed we hope the music of **ECLIPSE** will make your "Gateway to the Future" one you will never forget.

**TRANSPORTATION** - Airport shuttle transportation to and from the Green Tree Marriott is provided on the hour from 6:00 a.m. to 3:00 p.m., and on the half-hour from 3:00 p.m. to 11:00 p.m. weekdays. Shuttle service on the weekends is on the hour or by reservation with the Greentree Marriott guest services. ■



# 1995 ASHE CONVENTION REGISTRATION

"Gateway to the Future"

May 18 - 21, 1995

Green Tree Marriott  
Pittsburgh, Pennsylvania

## Registration Information: (please print or type)

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

Guest Name: \_\_\_\_\_

Telephone: (Home) \_\_\_\_\_ (Work) \_\_\_\_\_

ASHE Member: Yes ☐ No ☐ Section: \_\_\_\_\_

## Name Badge Information:

Name: \_\_\_\_\_ Company: \_\_\_\_\_

Guest: \_\_\_\_\_

Convention Activities	Fee (per person)	Persons Attending	Total Fee
Convention Registration: Prior to April 15, 1995	\$45.00 *		
After April 15, 1995	\$60.00 *		
Registration for Friday AM Technical Sessions ONLY**	\$30.00		
<b>THURSDAY, MAY 18</b>			
Ice Breaker Buffet Dinner w/Open Bar: (7:00 pm to 11:00 pm)	\$25.00		
<b>FRIDAY, MAY 19</b>			
Continental Breakfast: (7:30 am to 8:30 am)	None		
General Session (9:00 am to 9:45 am)	None		
Technical Sessions: (10:00 am to 11:30 am)	None		
Luncheon: Person of the Year (12:00 pm to 1:15 pm)	\$15.00		
Technical Tour: (1:30 pm to 4:30 pm) *	None		
Past President's Dinner w/Open Bar: (7:00 pm to 12:00 am)	\$35.00		
Spouse's Program: Tour of Station Square & Riverboat Cruise (includes lunch) (9:45 am to 4:00 pm) *	\$25.00		
<b>SATURDAY, MAY 20</b>			
Continental Breakfast: (7:30 am to 9:00 am)	None		
Golf Outing (10:00 am) 80 Participants Maximum - First Come First Serve - Full Registration Required	\$55.00		
Spouse's Program: Saints & Sinners of all Nationalities Tour (includes lunch) (9:45 am to 4:00 pm) *	\$25.00		
Annual Banquet: Cocktails 6:00 pm, dinner 7:00 pm (w/Open Bar) Entertainment 9:00 pm to 1:00 am Choice of Entree: Steak Diane _____ Grilled Swordfish _____	\$45.00		
<b>SUNDAY, MAY 21</b>			
Continental Breakfast: (8:30 am to 10:00 am)	None		

Make checks payable to ASHE Convention '95 for the total amount of:

Mail completed registration form with appropriate fee enclosed to:

1995 ASHE Convention Registration  
2631 Middle Road  
Glenshaw, Pennsylvania 15116

Questions?  
Call Tamara Johnson  
(412) 276-2966

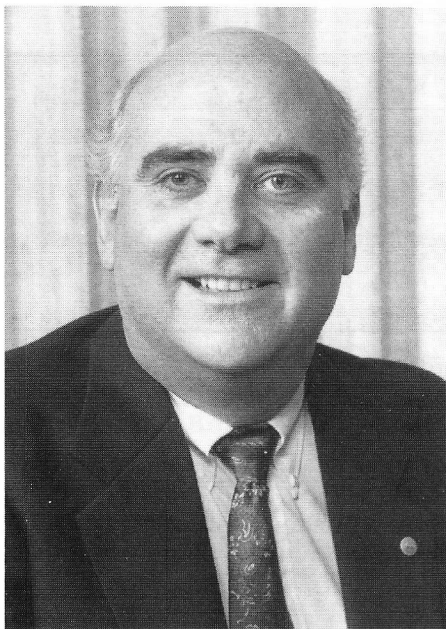
\* Includes guest

\*\* Not eligible for other convention activities unless upgrades to full registration.

\* Transportation provided



# STEPHEN B. LESTER, P.E. NAMED VICE PRESIDENT AT URBAN ENGINEERS, INC.



Stephen B. Lester, P.E., former Pennsylvania Department of Transportation (PENN DOT) District Engineer, has been appointed Vice President of Engineering and Quality Services at Urban Engineers, Inc., bringing the firm over 30 years engineering and management experience. Urban Engineers, Inc. (Urban) is a Philadelphia-based multidisciplinary firm established in 1960.

Mr. Lester has served as President of the local chapters of the Institute of Transportation Engineers, the American Society of Highway Engineers, and the American Public Works Association. He was the National President of the American Society of Highway Engineers in 1990-1991. He was named "Engineer of the Year" by the Engineering Societies in the Delaware Valley in

1993 and the "Man of the Year" by the Delaware Valley Chapter of the American Society of Highway Engineers, in 1991. In 1994, Mr. Lester was recognized by the American Public Works Association as one of the Top Ten Public Works Leaders in North America. ■

**Whitney  
Bailey  
Cox  
Magnani**

- Highways
- Bridges
- Landscape Architecture
- Traffic Engineering
- Inspection/Surveys
- Hydraulics/Hydrology

Consulting Engineers  
4909 Louise Drive,  
Suite 106  
Mechanicsburg,  
Pennsylvania 17055  
717-790-9839

## • Geotechnical Engineering

- Test Borings
- Sitework Design
- Accredited Soil and Concrete Laboratories
- Construction Inspection
- Materials Testing
- Environmental Audits



*Serving the Public and  
Private Sectors for Over  
33 Years*

**SITE ENGINEERS, INC.**  
200 East Park Drive  
Suite 100  
Mt. Laurel, NJ 08054-1299

(609) 273-1224  
FAX: (609) 273-9244  
Whitehall, PA • Mechanicsburg, PA  
Monroeville, PA • Smyrna, DE

# HRG

*Engineering & Related  
Services Since 1962*

**HERBERT, ROWLAND & GRUBIC, INC.**

Bridges - Highways - Traffic Engineering  
Civil Engineering - Environmental Services  
Planning - Surveys - Construction Administration

Harrisburg (717) 564-1121  
Lancaster - State College - Gettysburg - Pittsburgh

## DLZ Corporation

Dodson-Lindblom Assoc. • Stilson & Assoc. • SEG • JDJ&A • Cole Assoc.

ENGINEERING • ARCHITECTURE • ENVIRONMENTAL

6121 Huntley Road • Columbus, OH 43229-1003  
Telephone: (614) 888-0040 • FAX: (614) 848-6712

## R.D. Zande & Associates, Ltd. CONSULTING ENGINEERS

### Professional Consulting Services for

- Highways ► Bridges ► Airports
- Surveys ► Construction Services
- Environmental Engineering ► Analytical Lab

1237 Dublin Road  
Columbus, Ohio 43215  
(614) 486-4383 • FAX (614) 486-4387

# The Central Ohio Section Supports ASHE

## Burgess & Niple, Limited

5085 Reed Road  
Columbus, OH 43220  
614 459-2050 ■ Fax 614 451-1385

Ohio Offices in:  
Akron ■ Columbus ■ Cincinnati ■ Painesville

**B U R G E S S  
& N I P L E**

E N G I N E E R S  
A R C H I T E C T S

# CEA

9 0 1 5

Antares Avenue  
Columbus, Ohio

4 3 2 4 0

Tel 614.433.9015

Fax 614.433.9513

**CIVIL ENGINEERING  
ASSOCIATES**



# 17TH STREET INTERCHANGE UTILIZES INNOVATIVE DESIGN



The new interstate construction of U.S. 220 connects Bedford and Tyrone Boroughs in southcentral Pennsylvania. The primary reason for this construction was to tie Altoona into the National Interstate System and Altoona's primary interchange is 17th Street. The interchange construction cost was \$14.8 million. Part of the excavation for the project required a deep cut into the side of Brush Mountain for one of the exit ramps, where exposed, weak claystone layers in the cut slopes caused instability.

Stability analysis indicated a stable cut-slope rate along the plane of the exposed weak layers would necessitate removal of much of the mountainside with massive excavation quantities and high costs. Other methods of stabilizing the hillside were considered, including a tie-back retaining wall at the base of the slope, creating a shot-in-place buttress in the bottom of the slope, or a system of rock anchors. The rock anchors were selected as the most cost effective - about half the anticipated cost of mass excavation to lay back the slope.

The anchors consist of four-strand wire cables in a six-inch hole, drilled at a 40 degree angle to a depth of up to 65 feet into

deeper laying sandstone. They are grouted 20 to 30 feet at the bottom of the holes and secured at the top with precast concrete bearing blocks set into surface rock. The anchors are then post-tensioned with loads from 80 to 120 kips.

Each row of anchors was carefully installed and completed prior to the next row's excavation. Five rows of anchors were installed, each replacing the excavated material prior to excavation of the next row. The entire rock-anchored reinforced cut slope stabilizes the hillside, with the rock anchors increasing the normal force in the exposed rock layers.

A total of 350 anchors were completed, which now work together to increase resistance to the natural tendency of the hillside to slide into the excavated cut slope. The end result is an interesting, even somewhat attractive, and certainly conversational hillside which has been alluded to as Egyptian artifacts or a pet cemetery, among a large number of public guesses by people who drive by. The total cost of the anchor system was about \$700,000, considerably less than a full-fledged excavation of the mountainside. ■



## PME CONSULTANTS, INC.

STRUCTURAL ENGINEERS PHONE 412-327-7297  
117 SAGAMORE HILL ROAD  
PITTSBURGH, PA 15239

BRIDGES • DAMS • SPECIAL STRUCTURES •  
STRUCTURAL INSPECTION & EVALUATIONS



P.O. Box 67100 • Harrisburg, PA 17106  
(717) 763-7211



**Gannett Fleming**  
ENGINEERS AND PLANNERS  
Transportation Planning • Environmental Studies  
Bridges • Highways • Traffic Engineering  
Design • Construction Management

Baltimore, MD  
Charlotte, NC • Columbus, OH  
Hammononton, NJ • King of Prussia, PA  
Newport News, VA • Pittsburgh, PA • South Plainfield, NJ



**Frederic R. Harris, Inc.**

**Quality is our Business**

- Highways & Bridges ▪ Mass Transit ▪
- Airports ▪ Ports & Harbors ▪
- Environmental ▪

260 S. Broad St.  
Suite 720  
Philadelphia, PA 19102  
(215) 735-0832

Two Gateway Center  
Suite 620  
Pittsburgh, PA 15222-1450  
(412) 355-2054



# I-95 CORRIDOR COALITION

The I-95 Corridor Coalition is a partnership of the major public and private transportation agencies which serve the Northeast Corridor of the United States. The mission of the Coalition is to:

"Work cooperatively to improve mobility, safety, environmental quality and efficiency of interregional travel in the Northeast through real-time communication and operational management of the transportation system. In doing so, the Coalition will seek to establish an economically beneficial, multi-modal framework for early implementation of appropriate IVHS technology."

The Northeast Corridor is arguably the most complex and most burdened transportation network in the United States. With over 50 million in population, the Northeast Corridor is served by 13 major airports, over 2 dozen major rail stations, and 11 major sea ports. The highway system consists of approximately 7,000 miles of Interstate and 22,500 miles of principal arterials and expressways/ freeways. Nearly 250 billion vehicle miles of travel on Interstate highways and principal arterials help to contribute to the status of eight metropolitan areas as non-attainment for ozone.

The major transportation agencies in the Northeast have joined together to form the I-95 Corridor Coalition. Included in the Coalition are each of the 12 DOT's in the Corridor stretching from Maine to Virginia, 12 toll authorities that operate major facilities within the corridor, the transportation departments of Washington D.C. and New York City.

The Federal role is strong, with USDOT representation consisting of the Federal Highway Administration (FHWA), Federal Railroad Administration, Federal Transit Administration, and the USDOT Office of Intermodalism (the role of FHWA in assisting the Coalition to form and get going cannot be overstated). The Coalition also includes AMTRAK, TRANSCOM, the ATA Foundation, the National Private Truck Council, the AAA Foundation for Safety, IVHS America, and the American Bus Association.

The vision for the coalition is really fairly simple, though the implications will be far-reaching and the

challenges along the way may be difficult and complex. The vision is for the providers of transportation services along the I-95 Corridor — from Richmond, Virginia to Portland, Maine — to establish the necessary communication links so that collectively — as individual entities and as a coordinated team — they might operate their part of the system for the benefit of their travel customers whose piece of the total market might extend well beyond individual boundaries. The vision is customer driven, it is focused on communication with customers and with each other, and it emphasizes the idea that the Coalition members must intervene in a coordinated way in the real-time operation of their part of the total system.

To help realize this vision, the Coalition established an organization which is managed by an Executive Board and a Steering Committee, with specific tasks performed by working groups.

The Executive Board is comprised of the Chief Administrative Officers of the member agencies while the Steering Committee is made up of senior technical and policy staff persons from each agency. Working groups are built around key staff, having appropriate responsibility and experience in focus areas such as incident management, internal communications, functional needs, privatization, and organizational issues. In addition, a highly competent team of consultants has been retained, to provide further technical depth as well as assist with the every-day activities of the Coalition.

There are 21 projects defined in the 5-year Business Plan. These projects supplement, add value to, and tie together individual member programs. Each member agency is expected to continue with its own IVHS development. In fact, less than 4% of the total IVHS expenditures in the Northeast is expected to come from the Coalition. Rather, these are projects which no single agency could be expected to fund on its own, or interregional activities which are best accomplished by pooling resources.

While the 21 projects are defined in general terms, 11 projects have

been specifically defined, and were adopted as first and second year projects. It is by these projects that the Coalition's success will be measured over the short term.

There is early evidence that the Coalition process is succeeding. Member agency staffs have built informal real-time communication links through phone and fax in anticipation of the more sophisticated network soon to come. Already, south-bound travellers in New York and New Jersey have been advised of long term service disruptions at strategic locations in Pennsylvania, Delaware, Maryland and Virginia. Northbounders in Connecticut have been notified of unexpected incidents in Rhode Island and Massachusetts. Travellers from Maine to Virginia were advised of the I-95 Corridor Coalition's operational readiness on Highway Advisory Radio last Thanksgiving. Indeed the culture of cooperation has already begun. It is a culture strengthened by voluntary cooperation and professionalism.

The technology to begin is at hand. The long-term question is whether, in the fragmented institutional world which defines our region of the country, the Coalition can pull together with such coherence that customers perceive a convenient, virtually seamless continuum as they traverse the various modal segments of the corridor. That's the question. The long-term answer lies in whether each member of the Coalition continues to perceive a net gain from working more closely together in the here and now operation of the total system. The early evidence provides reason for optimism.

The I-95 Corridor Coalition has the opportunity to break dramatic new ground in bringing multi-modal IVHS applications to the Northeast Corridor. Notwithstanding the inherent challenge of launching a voluntary effort among 26 independent transportation agencies, the compelling nature of the mission is forging an alliance which is already bearing fruit. Thanks to the selfless commitment of transportation leaders and professionals in member agencies, the Coalition is off to a good start. ■

*Charts on page 13*



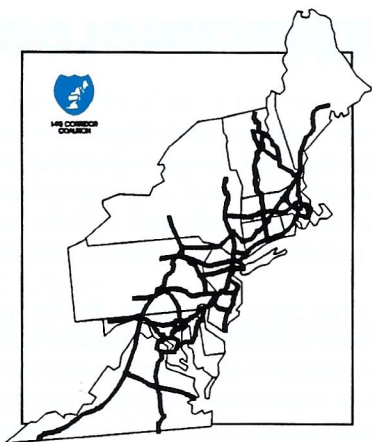



Figure 1. The Northeast Corridor –home to the Nation's business, recreational, and residential need.



Phone (814) 827-1721

**HASBROUCK SAND & GRAVEL, INC.**

Washed & Graded Aggregates  
Excavating & Grading  
Redi-Mix Concrete

HERBERT L. HASBROUCK

RR 4, Box 41  
TITUSVILLE, PA 16354


**The EADS Group**

**Gwin Engineers, Inc.**  
Altoona (800) 626-0904

**Neilan Engineers, Inc.**  
Somerset (814) 445-6551  
Pittsburgh (412) 856-1510

**General Engineering, Inc.**  
Clarion (814) 764-5050

Engineers • Architects • Surveyors • Scientists



**AMERCOM CORP.** Tel. (201) 402-6111  
Consulting Engineers Fax (201) 402-0611

BRIDGES & ROADS

TRANSPORTATION

INSPECTION

SURVEYING

BUILDING NUMBER 1  
1259 ROUTE 46 EAST  
PARSHIPPANY, NJ 07054

Young Lee, PE/PLS, ScD. President

# I-95 CORRIDOR COALITION

For more information on the I-95 Corridor Coalition, feel free to contact:  
Ms. Elizabeth Voras, Administrative Manager of the Coalition at (717) 986-9601.

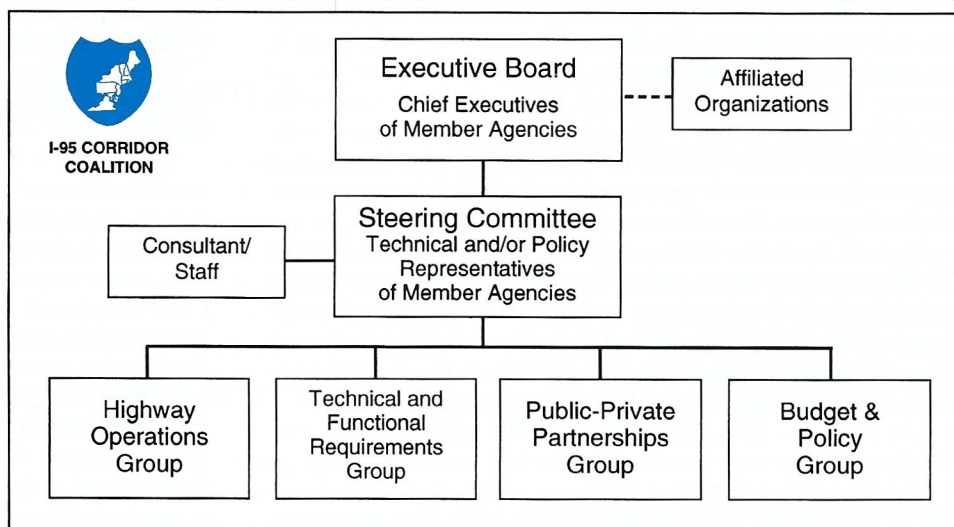


Figure 2. I-95 Coalition Organization Structure

Table 1. I-95 Corridor Coalition Business Plan Projects		
Internal Coalition Operations	Customer/User Services	Special Studies and Surveys
Information Exchange Network**	Incident Management**	Surveillance Requirements - Technology**
User Needs and Marketability**	Commercial Vehicle Operations**	Public/Private Sector Outreach**
Consultant Support Services**	Traveler Information Services**	Technology Exchange and Training Program
Coordinated VMS/HAR System**	Corridor-wide AVI/ETTM Feasibility	Passenger/Freight Supply and Demand Analysis
Intermodal Outreach and Information Exchange**	Emergency Response System	Institutional Barriers and Issues
Communications Infrastructure Opportunities	Rural "MAYDAY" /800 Call-in System	
Feasibility of Regional Communications Centers	Automated Highway System (AHS) Corridor Identification	
Long Range Strategic Plan**		
Corridor-wide Decision Support/Expert System		

\*\* Denotes Year-One or Year-Two Project

## OHIO DOT ON CUTTING EDGE OF PAVEMENT TECHNOLOGY

People that drive down U.S. Route 23 in northern Delaware County are about to become participants in one of the most important transportation experiments. These motorists will be providing civil engineers with information that will help them design better highways in the future, and counter claims that American engineers cannot build roads as well as their European counterparts.

The experiment is a test pavement being constructed by the Ohio Department of Transportation (ODOT) for the Strategic Highway Research Program (SHRP), a five-year national research effort legislated by Congress.

Researchers have high hopes, the highway engineering community and the travelling public will benefit from

improved pavement designs that will last longer. Using the project data, highway engineers will be able to tailor pavement designs to environmental and weight conditions. Pavements will be designed to meet the demands of a specific highway, based on factors like weather and traffic counts. The result should be lower rehabilitation and maintenance costs, and reduced inconvenience to motorists.

According to Paul Teng, an FHWA pavement expert, the research should significantly improve the transportation community's ability to make the most of every dollar spent on highway construction and rehabilitation.

ODOT has become one of the national leaders in pavement technology.

*Continued from page 14*



# OHIO DOT ON CUTTING EDGE OF PAVEMENT TECHNOLOGY

*Continued from page 13*

ment research thanks to the department's involvement with the SHRP project. Jerry Wray, director of ODOT said, "Two years ago when the federal government was looking for candidates for this project, we jumped at the chance because we knew that Governor Voinovich was concerned about the quality of our highways in Ohio and the rest of the country. He's made it clear to us at ODOT that he doesn't want to inconvenience customers and slow down economic productivity any more than necessary."

Ronald L. Zook, assistant director and chief engineer of ODOT says the project gives Ohio the opportunity to take a leadership role in pavement research. The end result could change how the transportation industry designs pavements. "This experiment puts Ohio and ODOT on the cutting edge when it comes to producing better pavements," he said.

On June 21, 1994, the ODOT SHRP \$10.2 million construction project was awarded to the S.E. Johnson Company of Maumee, Ohio. Grading, drainage work, and a short section of pavement, were completed in 1994. The remaining work, including all remaining paving and installation of pavement instrumentation, was done in 1995.

The three-mile long project will be constructed in the 170-foot wide median of the existing facility. Upon completion of construction, all mainline traffic will be diverted to the new pavement.

Nancy L. Hall, deputy director of executive management, says the Delaware County SHRP project was designed by engineers on ODOT's Design Staff. Bill Edwards, bureau chief of Research and Development and his staff worked with researchers from six Ohio universities to identify appropriate instrumentation for the measurement of pavement response. Control sections, using traditional pavement designs, will be placed alongside experimental designs for a comparison of performance.

The ODOT SHRP project is one of the most comprehensive and significant pavement studies ever undertaken, Edwards says the U.S. 23 project will feature four different experiments, each with a different type of construction. "This is advantageous because we have similar soil conditions and similar topography throughout, and the climate will be the same for all of them. We can more directly compare the performance of one section versus another section based just on one variable such as the amount of traffic. We don't have to consider two, three, or four different variables; we can eliminate the guessing and have a more direct comparison," says Edwards.

"I think in total number of sections, we're a rather small part of the total picture across the country, but the way we have them located and the way we have them grouped together at the same site, makes this project more significant than any other project in the country," said Edwards.

To enhance the value of this test road, seasonal and dynamic response instrumentation will be installed in 33 of the 38 test sections. A falling weight deflectometer and controlled vehicle loadings will be used to gather response data on these sections under a variety of environmental conditions and periodically throughout their service lives. This data will provide the pavement community with valuable insight into the effects of climate and cumulative traffic loadings on performance.

The instrumentation beneath the pavement will be monitored by teams of university researchers headed by Dr. Shad

Sargand of Ohio University. Sargand was chosen to coordinate the project because he has had several successful years of experience working on other ODOT research projects. "The amount of instrumentation installed will be more extensive than any other project in the country or overseas," Sargand says.

Researchers from the Ohio State University, the University of Toledo, and Case Western Reserve will install and monitor instrumentation to measure environmental factors. These include temperature, moisture, frost depth, soil suction, and water table elevation. Meanwhile, Ohio University, University of Cincinnati, and University of Akron researchers will install and monitor instrumentation that deals with pavement response and structure. They will examine strain, pressure, displacement, and joint opening.

Information from this project will enable ODOT to counter claims that American highways are not as good as those found in Europe. Critics often ask why all the research is needed. Why can't we simply take an effective European road design and use it in Ohio? "We want to learn from others, but we can't be driven by European design. Our tax base is structured differently, our infrastructure needs are greater, and the materials available to us to build highways are not the same as they are in Europe," Edwards says.

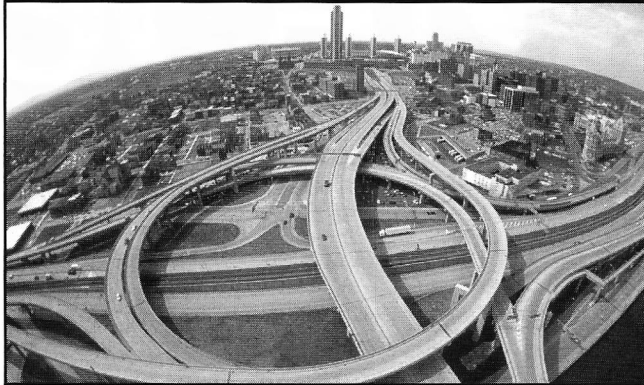
American engineers have traditionally relied on thinner, less costly pavement designs that have a shorter life than their European counterparts. "Since we're building thinner pavements with a shorter life, the design is more critical than when you build four-foot-thick pavement. We also have to be more careful in our specifications and our construction procedures to maximize the performance of the thinner pavements," notes Dr. Sargand. A by-product of the project will be the experience that the graduate students involved in the experimentation will gain. With this project, the students will get practical experience, they will learn how to work with the contractors and how to work with engineers. There is a tremendous benefit to the student because of that," said Sargand.

"The payback on this project is going to be tremendous. We will revolutionize pavement design," said Wray. "This will enable us to build highways that will last longer and require less maintenance, and allow motorists to more efficiently travel throughout our state and the rest of the country."



Left to right: Ronald L. Zook, Assistant Director/Chief Engineer of Ohio Department of Transportation; Ohio Governor George V. Voinovich; Robert Glidden, President of Ohio University; Jerry Wray, Director of Ohio Department of Transportation; Nancy L. Hall, Deputy Director of Executive Management, Ohio Department of Transportation; and Mike Uhl, Executive Vice President of S.E. Johnson company.





- **Engineers**
- **Planners**
- **Construction Managers**

1528 Walnut St.  
4th Floor, Suite 400  
Philadelphia, PA 19102  
**Bob Guthrie (215) 735-1457**

One Gateway Center  
4th Floor West  
Pittsburgh, PA 15222  
**Gary Runco (412) 281-9900**

**90+ Offices Worldwide**

**The First Name in Transportation**

# BLAUVELT ENGINEERS

**Transportation  
Environmental  
Engineering**

**Bridges      Airports  
Highways    Mass Transit**

**115 Evergreen Place, East Orange, NJ  
(201) 676-0045 • Fax (201) 672-1784**

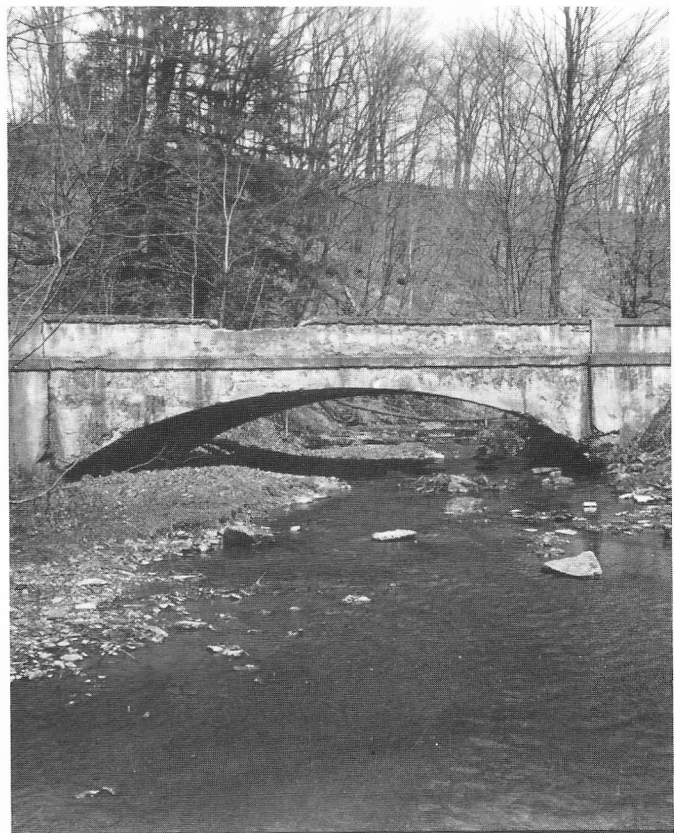
**CT • NY • NJ • PA • DE • MD • VA • WV**



412/856-6400  
FAX 412/856-4970

## **Full-Spectrum Engineering Consulting Services**

- ▲ Civil
- ▲ Environmental
- ▲ Geotechnical
- ▲ Structural
- ▲ Mining
- ▲ Environmental Studies
- ▲ Highways and Bridges
- ▲ Traffic and Transportation
- ▲ Construction Monitoring



Pittsburgh, PA    Orlando, FL    Raleigh, NC    Charleston, WV    Philadelphia, PA    Ft. Wayne, IN



## OFFICERS 1994-1995

Raymond A. Petrucci, P.E. ....President  
 Thomas J. Haslett, P.E. ....1st Vice President  
 David Greenwood, P.E. ....2nd Vice President  
 Roland A. Nesslinger, P.E. ....Past President  
 Terence D. Conner, P.E. ....Secretary  
 Robert E. Yeager, R.S. ....Treasurer

## DIRECTORS

3 years Frank A. Bush, Jr.  
 Cooper E. Curtis, P.E.  
 Frank S. Lopez, Jr.  
 Michael R. Martin, P.E.  
 Robert M. Peda, P.E.

2 years Read A. Buchman  
 Bruce G. Brandstetter, P.E.  
 James W. Charles, P.E.  
 Pasquale A. Dougherty  
 Robert E. Pearson, P.E.  
 Patrick M. Welsh

1 year Lawrence Opalisky, P.E.  
 John Ralston, Jr., P.E.  
 Lisle E. Williams, P.E.

Return Address

## THE ASHE SCANNER

Al Kozel, Managing Editor  
 7 Wood Street, 2nd Floor  
 Pittsburgh, PA 15222

Bulk Rate  
 U.S. Postage  
**PAID**  
 Pittsburgh, PA  
 Permit No. #282

## LITTLE CRACKS MEAN THE START OF SOMETHING BIG!

On a highway, airport runway or parking lot, small cracks can often go unnoticed. Early detection with PASCO high technology pavement management surveys provides information which can prevent little cracks from becoming expensive problems.

Find out how well we can serve you with pavement management surveys or pavement data analysis. Call or write today.



**PASCO USA Inc.**

4913 Gettysburg Road  
 Mechanicsburg, PA 17055  
 800-445-4789  
 FAX 717-691-8211

## Membership

Altoona.....	161
Carolina Triangle.....	181
Central Dacotah.....	61
Central Florida.....	221
Central Ohio.....	148
Chesapeake.....	79
Clearfield.....	99
Cuyahoga Valley.....	126
Delaware Valley.....	351
East Penn.....	120
First State.....	93
Franklin.....	226
Harrisburg.....	337
Lake Erie.....	103
Mid Allegheny.....	57
N. Central NJ.....	70
N. Central WV.....	29
N.E. Penn.....	107
Northwest Ohio.....	58
Old Dominion.....	50
Pittsburgh.....	430
Potomac.....	62
S.W. Penn.....	143
Southern NJ.....	108
Triko Valley.....	87
Western Reserve.....	53
Williamsport.....	149
<b>Total.....</b>	<b>3,709</b>

PROFESSIONAL STATUS	= 44%
DEPARTMENT OF TRANS	= 29%
CONSULTANT	= 44%
CONTRACTOR	= 13%
OTHER	= 14%



**Johnson, Mirmiran and Thompson, P.C.**

PLANNERS ENGINEERS LANDSCAPE ARCHITECTS SURVEYORS

2555 KINGSTON ROAD • SUITE 130 • YORK, PA • 17402 • (717) 757-2600  
 BALTIMORE, MD. FAIRFAX, VA FAX (717) 751-0455

Highway • Structural • Municipal • Sanitary • Water •  
 Industrial • Environmental • Construction Inspection



consulting engineers  
 planners & surveyors

Metish, Kunkel & Associates

2403 Sunshine Road R.D. #3 Box 320B  
 Allentown, PA 18103 Belle Vernon, PA 15012  
 ac 610-791-2700 ac 412-929-2760



• TRANSPORTATION  
 • ENVIRONMENTAL  
 • GEOTECHNICAL  
 • CONSTRUCTION INSPECTION SERVICES

**RUMMEL, KLEPPER & KAHL**

Consulting Engineers

1309 Bridge Street, New Cumberland, PA 17070  
 (717) 774-1386 • 1 (800) 787-3755

Baltimore, MD Raleigh, NC Washington, D.C.  
 Virginia Beach, VA Richmond, VA