SCANNER

NEWSLETTER OF THE AMERICAN SOCIETY OF HIGHWAY ENGINEERS

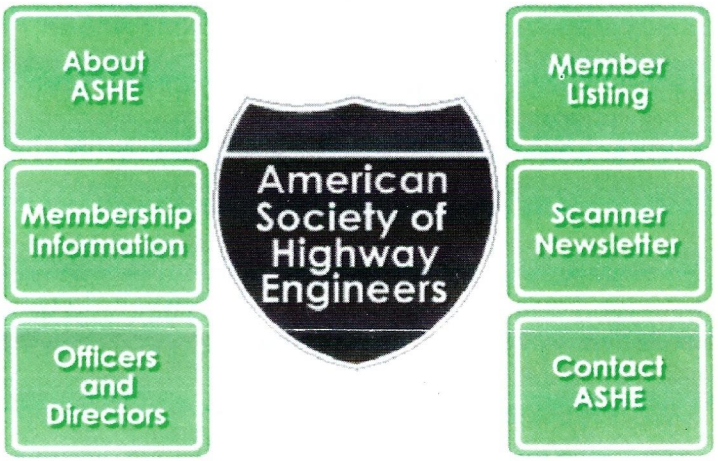
November 1997 – 4

ASHE IS ONLINE!

After much anticipation, the ASHE web site in now up and running under the address **www.highwayengineers.org**.

The ASHE Board of Directors voted several months ago to establish an internet site, taking ASHE further into modern technology. In addition to being accessible through its web site address, the web site will be accessible to anyone who performs a search on the internet using keywords relating to engineers and highways.

The web site allows users to explore the following topics:



About ASHE

This section gives a history of the organization. It details the mission of ASHE, the conception of the organization, administration, membership, benefits, etc. It also reviews the long range plan and the future goals of the association. This section of the web site is an excellent opportunity for someone who is not familiar with ASHE to learn everything about the organization.

Membership Information

This page of the web site introduces a potential new member to the organization. It reviews member objectives, a code of conduct for members and member obligations. In this section users are informed of the mission of the American Society of Highway Engineers. Eventually, ASHE will have an actual membership application on this page for a new member to download.

Officers and Directors

This site is a direct link to the ASHE Board of Directors and officers of the organization. This page currently lists all of the 1997-1998 officers of the organization and the National Directors, as well as what regions they represent. Established Sections are also listed. ASHE will post e-mail address of board members and officers who have addresses under this section so that they may be contacted electronically by web users.

Member Listing

Although this section is currently incomplete, it will eventually provide a listing of all ASHE members throughout the country.

SCANNER Newsletter

ASHE has made sections of the most recent issue of the SCANNER newsletter available and has highlighted articles that may be of interest. This will serve as an excellent resource to researchers who use the internet and anyone who may want to quickly reference an article that was published in the SCANNER.

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ASHE 1998 National Conference
May 14-17, 1998
Holiday Inn Lancaster, PA

BUGGIES TO BELTWAYS US 30

NATIONAL BOARD NEWS

The National Board met for a regular board meeting on October 10, 199, in Harrisburg, Pennsylvania. National Board President, Pasquale A. Dougherty, P.E., presided over the meeting. The following are highlights of the committee reports and actions:

MEMBERSHIP

There have been 38 new members since June 1997, Secretary Terence D. Conner, P.E., reported. Total membership in ASHE now stands at 4,671.

A standard membership application on disc and a hard copy will be mailed to each Section. All Sections are asked to comply with this form and to not make any additions or alterations. This information will be used in a computer data base being prepared under the direction of First Vice President, James W. Charles, P.E.

All Sections will also be asked to supply a dues rate for computer invoicing. The letter will be forthcoming.

TREASURER'S REPORT

Treasurer Robert E. Yeager, P.L.S., asked that Sections be accurate when preparing form 990 Financial Sheets, making sure all Section assets are listed.

PRESIDENT'S REPORT

President Dougherty reported he recently attended ASHE functions held by Clearfield and First State Sections and the Region 6 board meeting, and plans to go to events at Pittsburgh and Franklin Sections and the OTEC Conference in Columbus, Ohio, in the near future.

He said he would be happy to attend as many ASHE Section and Regional meetings as possible during his term as President and urged Sections to extend an invitation.

WEB SITE

A contract with Wanner Associates for $2,000 to set up a web site for ASHE on the Internet was enacted, as approved at the June Board meeting. The ASHE site is on the Internet at www.highway engineers.org (see front page article of this SCANNER issue).

NEW SECTIONS

Director Cooper E. Curtis, P.E., of Region 9 reported that the Atlanta, GA group has been meeting with nearly 100 potential members attending. The Section is expected to be charted in January 1998.

Progress on forming Sections is continuing in Fort Lauderdale, FL (Gold Coast Section), Dayton, OH and Fargo, ND. Interest for ASHE Sections has been expressed in the Boston, MA, Dallas/Fort Worth, TX and Knoxville, TN areas.

CONSTITUTION/BYLAWS

All Section officers are required to update their Section's Constitution and Bylaws to conform to the revised National Constitution and Bylaws. There were no drastic changes at the National level, it was noted, just "verbiage" changes.

LEGISLATIVE REVIEW

Rodney P. Pello, P.E., Director from Region 6, asked all ASHE members to send letters supporting BESTEA, the long-range Transportation Bill (HR-2400) sponsored by Rep. Bud Shuster, R-PA, Chairman of the House Transportation Committee.

PUBLIC RELATIONS

Director David D. Jones, P.E., of Region 1 is updating ASHE's presentation material, including the video and the display booth.

CONFERENCES

Conference 1997 - President Dougherty presented Board members with a bound final report of all activities involved in the Conference. The profit amount from the event was $1,500.00

Conference 1998 - Mike Bougher and Jack Diviney of the Harrisburg Section provided a detailed progress report of the May 14-17, 1998 Conference to be held in Lancaster, PA. Final details will be previewed in a future SCANNER issue.

Conference 1999 - Director Charles Flowe, P.E., of Region 8 said the two North Carolina Sections met for a planning session in September. Committees are being formed, and there is interaction with the Chamber of Commerce. The Conference will be held in ASHEville, NC.

SCANNER

Approval was given for a new advertising package in the SCANNER, offering the front page sponsor space plus a 1/4 page inside ad for $500 an issue. Those interested need to contact Wanner Associates, publishers of the SCANNER (See SCANNER advertising order in this issue.)

Sandy Ivory, Director from Region 4, said SCANNER ad revenue for the November issue is up close to $1,000 over the August issue, which was $2,625.

John Wanner of Wanner Associates, publisher of the SCANNER and manager of the web site, will attend the January Board meeting to discuss both operations and answer questions.

NOMINATIONS

Past President David A. Greenwood, P.E., said he soon would be sending letters to Sections requesting nominations for Regional Directors, National Directors, Second Vice President and Person of the Year. The nominations must be returned by the first week in January 1998. ■

ASHE IS ONLINE

(continued from page 1)

Contact ASHE

Now you can electronically contact ASHE with membership requests, new addresses, newsletter information, one-on-one discussions with the board, and much more.

ASHE hopes that you will utilize the new web site to communicate with the association. The web site will be updated monthly. If there is anything you would like to see on the web site or if you have any suggestions on how the web site can be improved, please let us know by sending us an e-mail. ■

Legal Corner

INDEPENDENT CONTRACTORS AND DESIGN PROFESSIONALS MAY BE ENTITLED TO "GOVERNMENTAL IMMUNITY"

by Travis L. Kreiser, Esquire

Those of you who routinely work on public projects are probably aware of the various state and federal statutes which immunize government owners from certain types of lawsuits. You are probably less aware, however, of the case law which allows some construction contractors and design professionals, working for the government as independent contractors, to assert those same statutes as a defense to liability. While the concept of granting immunity to certain government contractors is not new, several recent cases have extended this protection to construction contractors and design professionals and have clarified the circumstances under which an independent contractor may enjoy "governmental immunity."

The first important development occurred in New Jersey Board of Education v. W. R. Grace Corp., 609 A.2d 92 (N.J. Super. Ct. 1992), where the New Jersey Supreme Court established a three-part test for determining whether a construction contractor is entitled to governmental immunity. In that case, the Board of Education sued several general contractors which installed asbestos plaster in ten school buildings during the 1950's, seeking to recover the cost to remediate the asbestos-containing products. One of the general contractors, DeGenaars Construction Company, claimed that it was immune from the Board's claims because it had no control over the government's decision to use the asbestos products. Relying on a three-part test created by the United States Supreme Court to determine whether a defense contractor was immune from claims for alleged defects in a military helicopter, the New Jersey Supreme Court concluded that an independent construction contractor may be entitled to governmental immunity if: (1) the plans and specifications followed by the contractor were detailed; (2) the contractor's work conformed to those specifications; and (3) there were no glaring defects in the plans and specifications. In other words, as long as the plans and specifications are not obviously defective or dangerous, a construction contractor that merely carries out the government's directions should not be held liable for defects in those plans and specifications. In the Board of Education case, the Court found that DeGenaars was entitled to immunity because it had strictly complied with the government's plans and specifications (which mandated the use of a particular type and brand of plaster) and had no right to deviate from those plans and specifications. Immunity was also appropriate since contractors in the 1950's were unaware that products containing asbestos posed health and safety hazards and therefore, could not possibly have known that the specifications were "dangerous" or "defective."

A second important case extended the governmental immunity concept to claims against design professionals. In Lyons v. CNA Insurance, 558 N.W.2d 658 (Wis. Ct. App. 1996), an engineering firm employed by the Wisconsin State Department of Transportation designed a bridge with a 150 foot span and a relatively low vertical curve. This design, however, could not be implemented without redesigning and rebuilding several intersecting roadways at substantial additional expense. As a result, the DOT requested and the engineer submitted an alternate design with a 70 foot span and a relatively high vertical curve, a design which did not require reconstruction of the other roadways. The DOT, itself, weighed the pros and cons of both designs and then directed the engineer to implement the shorter design option, even though it violated current AASHTO standards.

After the project was completed, Theresa Lyons was killed in a traffic accident at one of the roadways intersecting the bridge. Ms. Lyons' estate then sued the engineer (among others) alleging that the "defective" bridge design caused the accident and Ms. Lyons' death. The engineer argued that it was immune from the Lyons claims under Wisconsin's governmental immunity statute, because the DOT, not the engineer, directed implementation of the alleged faulty bridge design. The Court agreed and dismissed all claims against the engineer.

In reaching its decision, the Wisconsin State Court of Appeals modified the three-part test used by the New Jersey Supreme Court in Board of Education to account for the different relationship between a government owner and an independent design professional. Under the modified test, the Court concluded that a design professional is entitled to governmental immunity if: (1) the plans and specifications approved by the government were reasonably precise; (2) the design professional implemented those specifications; and (3) the design professional warned the government about the risks and dangers associated with implementing those plans and specifications. In the Lyons case, the engineer was entitled to immunity because it had warned the DOT, in writing, that the design did not comply with current AASHTO standards, but the DOT, nevertheless, required implementation of the shorter design.

Both Courts justified extending governmental immunity to independent contractors based upon two public policy goals. First, immunity must be extended to some independent contractors in order to preserve the government's own immunity. If contractors or design professionals were never allowed to share in the immunity, their cost of doing business would be higher, and those higher costs would be passed on to the government owner in the form of higher construction costs. Thus, the end result would be the same as if the government entity were itself liable. In other words, the government's own immunity would be rendered meaningless if contractors and design professionals could be held liable for complying with the public owner's design or construction directives.

Second, notions of "fundamental fairness" require that govern-

(Continued on page 5)

ment contractors be entitled to immunity where the public owner retains final decision-making authority over design and construction issues. Both Courts recognized that contractors and design professionals owe the public a duty to use due care on public construction projects, but explained that independent contractors may fulfill that duty by informing the government about any hidden flaws or dangerous elements in the design or construction alternatives being considered (or actually chosen) by the government. Under these circumstances, where the public owner is properly warned, it would be fundamentally unfair to hold a contractor or design professional liable for a decision over which it had no control.

Every state has its own governmental immunity statute and its own case law interpreting that statute; therefore, an independent contractor's right to immunity may vary from state to state. Nevertheless, the Courts' decisions in Board of Education and Lyons create some general rules which should be followed in all situations in order to preserve the potential immunity defense. Both Courts, in deciding whether immunity was appropriate, focused on the contractor's ability (or inability) to deviate from the government's plans and specifications, and on whether the independent contractor properly advised the government of the risks associated with implementing the defective plans and specifications. Given this focus, any time an independent contractor is asked to prepare or implement a design which deviates, in any way, from accepted industry standards or the contractor's professional judgment, two things must occur to create immunity. First, the government owner must be advised, in writing, about the deviation, including a detailed explanation of all of the risks and dangers associated with the requested design. Second, the public owner, not the independent contractor, must make the final decision regarding which design will be implemented. In order to prove this point, after advising the public owner of the risks associated with the design choice, the independent contractor should obtain a written directive from the public owner mandating use of the selected plan. In this way, the independent contractor will be able to demonstrate that the government made the ultimate design or construction decision with full knowledge of the risks.

In sum, the courts have extended governmental immunity to some contractors and design professionals, but only where the independent contractor has carefully advised the public owner about the risks associated with its design choice and the government, nevertheless, mandated that the contractor implement the "defective" design alternative.

Travis L. Kreiser is an attorney associated with the law firm of Korn & Cohn, P.C., which focuses its practice in the areas of construction law and litigation. Questions or comments concerning this article may be directed to Mr. Kreiser at 620 West Germantown Pike, Suite 450, Plymouth Meeting, PA 19462 (610-825-7070).

The Brewster Road Bridge in Geauga County Glulaminated Timber Bridge

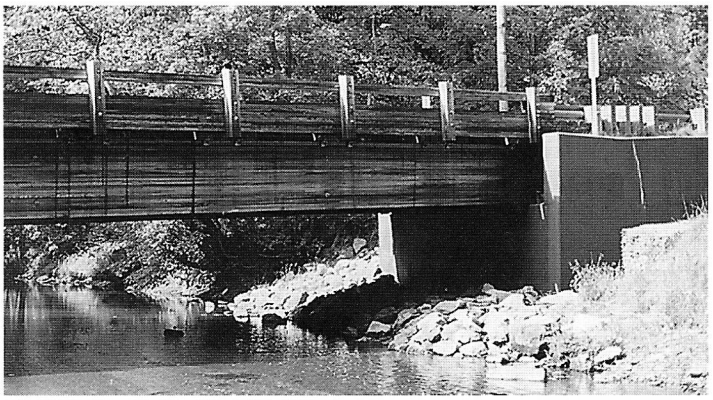
By Michael S. Cleary, P.E. Principal
McCoy Associates, Inc., Consulting Engineers, Akron, Ohio

The Brewster Road Bridge over the Aurora Branch of the Chagrin River is located in Bainbridge Township, Geauga County, Ohio within one mile of Geauga Lake Park. Brewster Road (T.R. 184) is a two-lane roadway serving local residential subdivisions. The existing bridge, built in the early 1900's, was a 65- foot simple span Warrer Truss that carried one lane of traffic. The bridge was posted for a 60% reduction of the Ohio legal load limit.

Due to severe grade breaks in the profile and two sharp horizontal curves located near the bridge, both the horizontal and vertical alignments of the roadway were in need of improvement. The existing structure was both functionally obsolete and structurally deficient. The Geauga County Engineer, Mr. Robert L. Phillips, P.E., P.S. selected the consulting firm of McCoy Associates, Inc. to provide the engineering services required to realign the roadway and replace the bridge.

This branch of the Chagrin River is classified as a scenic river by the Ohio Department of Natural Resources (ODNR). Due to this classification, special provisions were required during construction of the bridge so as not to disturb the river or it's banks. The contractor had to restrict and limit his demolition procedures and methods to those which eliminated debris from entering the river. Construction rubble could not be disposed of in any area closer than 1000 feet of the bridge site. Storage of construction materials and supplies were restricted to within 120 feet of the riverbanks. Also, all in-stream work was prohibited and construction equipment had to be hauled via the detour route to the opposite side of the river.

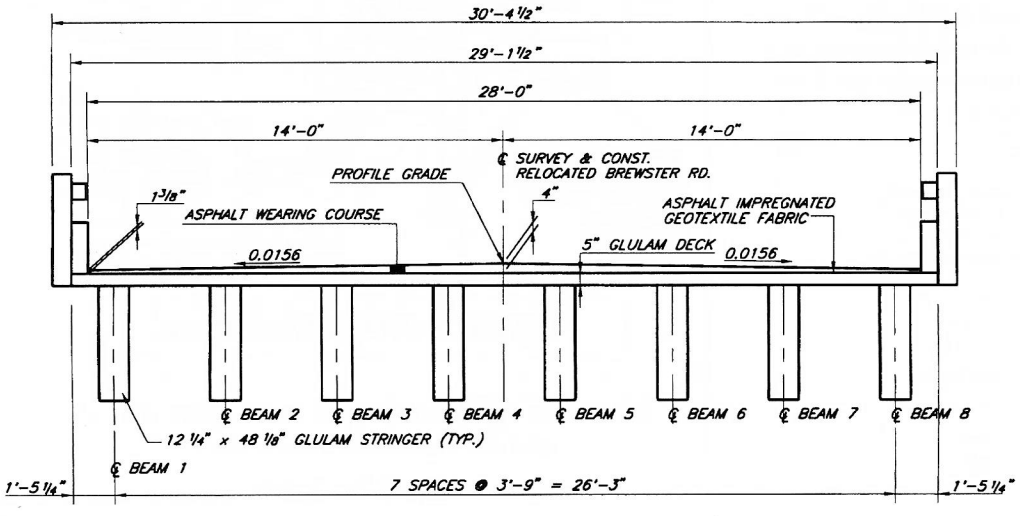
The environmental sensitivity of the site was also a key element of consideration that went into the decision of the type of replacement structure. At the early planning stages of the project, Mr. Phillips suggested that the site might be well suited for a timber bridge. The Ohio Department of Transportation and ODNR agreed that a 2-lane timber superstructure supported on concrete foundations would provide both a natural setting and aesthetic appearance for traveling motorists and pedestrians.



A glulaminated timber beam and deck panel design with an asphalt wearing surface was chosen to satisfy the design constraints posed by the project site conditions. The span length was set at 75 feet center-to-center of bearings. The timber deck was attached to the beams using a series of aluminum deck brackets and dome headed bolts. Timber diaphragms were bolted between the 48" stringers to provide bracing.

In order to insure a strong bond between the timber deck and the asphalt wearing course, two construction requirements were provided in the general notes. First, a surface blotter had to be applied for seven days and then removed before paving. The purpose of the blotter was to remove excess pressure treatment preservative. Prior to shipping the timber members, the timber had to also receive an expansion bath or steaming to help remove surface preservative. The second requirement was to place an asphalt impregnated geotextile fabric on the unplaned deck surface before the asphalt wearing course was applied.

The bridge was constructed and opened in late 1996 and now serves the County as a local crossing. While many of the timber design features of the bridge may not be visible to those who drive over the structure, the project has clearly changed Brewster road for the traveling public by providing both safety improvements and an aesthetically pleasing bridge. ■



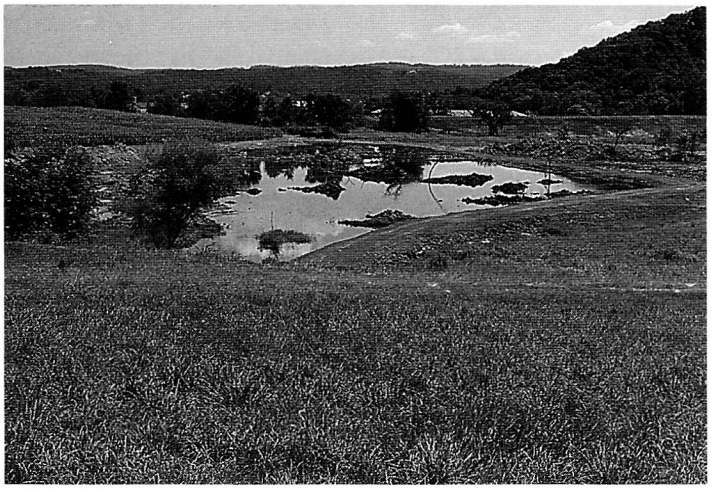
TRANSVERSE SECTION

Building a Wetlands Nest Egg

by Thomas S. Morisi
Bridge/Roadway Supervisor, Keller Engineers, Inc.

The Pennsylvania Department of Transportation, District 9-0 at Hollidaysburg, is leading the way in Pennsylvania with a new wetland banking program referred to as "Advanced Wetland Compensation". It is designed to create wetland areas for use as future mitigation sites on small highway and bridge projects. District officials at 9-0 are the first in this state to initiate the program in cooperation with the Pennsylvania Department of Environmental Protection, Game Commission, Fish Commission, U.S. Army Corps and the Federal Highway Administration. This effort models one currently used by the U.S. Fish and Wildlife Service.

District 9-0, consisting of Blair, Bedford, Cambria, Fulton, Huntingdon and Somerset Counties, is broken into six watershed subbasins. The aim of this program is to create a wetlands site in each of these subbasins with two sites proposed for the largest of the six. A goal of ten acres per site is set for wetlands development.



The program works this way: If the Department constructs a project which impacts existing wetlands, then instead of mitigating the wetlands at the project site, the Department may withdraw from its "wetland bank" an amount equal to the disturbed area. The wetlands impacted and the wetlands utilized must both be located within the same subbasin, and are typically limited to amounts of one tenth of an acre or less. Larger projects still have to mitigate wetlands at the project site.

The smaller bridge and roadway projects using this banking program realize a savings in time and money. Construction costs associated with mitigation on these projects have now dropped from an average of $35,000.00 per acre to between $2,000.00 and $4,000.00 per acre. All efforts are made to avoid wetlands impact, however, if avoidance is not possible, approval is sought for use of one of the Advanced Wetland Compensation sites within that subbasin.

The Department begins the Advanced Wetland Compensation process by purchasing land in a given subbasin. This is done either by advertising for land in the local papers or utilizing a list of sites already offered to the Fish and Wildlife Service for this purpose. Most often the sites used are those previously containing wetlands such as farm fields drained by subsurface systems. The Department, using its own forces, then destroys the subsurface drainage system, constructs a typical wetland habitat and allows water to naturally infiltrate the area. Typically, the site must be established for one year prior to being utilized for the wetlands banking program.

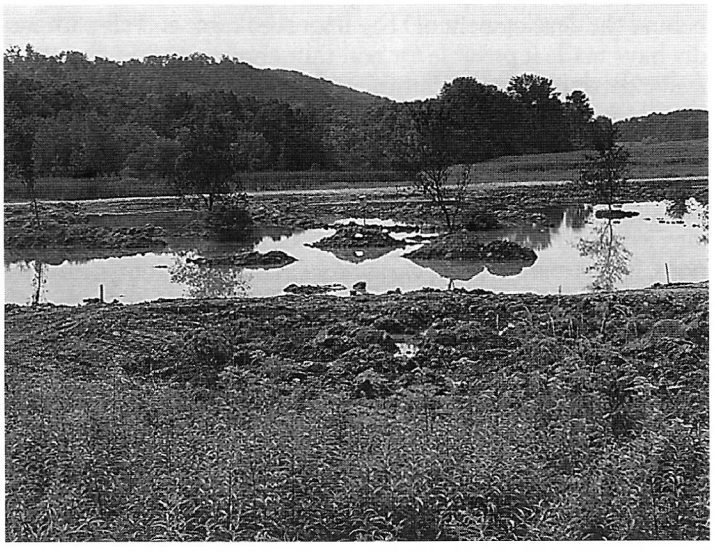
Dain Davis, District 9-0 Environmental Manager, explains that two sites have already been constructed in two separate subbasins as part of this program. One site is located in Cambria County on gamelands associated with Prince Gallitizin State Park. The other is located in Huntingdon County near the intersection of Routes 22 and 36.

The Cambria County site contains approximately eight acres and carries a construction cost of $20,000.00, Mr. Davis said, and the Huntingdon County site contains approximately eight acres and costs $29,000.00 to construct. Both sites have been constructed this year as part of the program and both are progressing as expected even with drought conditions in this area over the summer months.

"The Huntingdon project turned out better than we could have expected" Mr. Davis noted. "As a matter of fact the project is developing so well that the Department plans to build an access road so area school children will be able to observe the wetlands."

Mr. Davis and the District began to develop this concept, with the cooperation of the previously mentioned agencies, in 1994. Since then many discussions have been held and plans reviewed before reaching an agreement acceptable to all agencies involved. This agreement has paved the way for a timely and cost-effective solution to at least one environmental concern associated with construction improvement projects.

"Advanced Wetland Compensation is a project created in Central Pennsylvania which may be used as a model for the State and other regions," Mr. Davis concludes. "We are now talking to the other Districts in the State, explaining how to plan and develop the program. It is a benefit, a real plus for everyone". ■



Intelligent Transportation Systems
They've Been Here All Along

Wayne Droesser, E.I.T. & Matt Malozi, E.I.T.
Traffic Planning and Design, Inc. ~ East Penn Section - ASHE

With the realization that it is not feasible to "build" our way out of roadway congestion problems due to economic, environmental and social constraints, the focus of roadway improvement programs has shifted. Government programs and legislation such as the Intermodal Surface Transportation Efficiency Act (ISTEA) promotes optimization of the existing roadway system over programs aimed at adding capacity. One of the most promising areas to emerge as part of this campaign involves the development of Intelligent Transportation Systems (ITS). Ironically, the components which comprise these systems have, to a great extent, been in operation for many years. Only recently have engineers attempted to integrate these components to provide real-time, traffic responsive (i.e. intelligent) transportation systems. These systems can best be understood by defining the components, examining their interaction, and discussing potential developments and future applications.

What Is ITS?

ITS is the integration of traffic management and informational services. However, many "ITS classified" field devices and technologies which provide these services have been in existence for quite some time. For example, variable message signs (VMS) and highway advisory radio (HAR) inform motorists of roadway surface conditions, weather conditions, and operating conditions of alternate routes, thus avoiding construction or incidents. Closed loop traffic signal systems consist of physically (hard wire) connected or dial-up (cellular) connected traffic signal controllers which feed data to a primary station computer in order to provide real-time adjustments to the traffic control system. Video and electronic surveillance systems provide real-time reporting of traffic incidents and control of incident response functions such as rerouting traffic, dispatching emergency equipment, and identifying alternate routes to drivers. Ramp metering maintains maximum flow rates by controlling the number of vehicles that enter the freeway at each ramp entrance.

How Does ITS Work?

Improvements to communication networks are the driving force behind the development of ITS. Improved cable and air-path media have made it possible for real-time communication between traffic detectors, signal controllers, message displays, and central control stations. Traffic detectors, with their ability to detect presence or passage of vehicles, and pavement sensors which are able to measure air temperature, relative humidity, precipitation, wind speed and direction can inform the central computer that an incident may exist and provide information about roadway surface conditions. In this manner, ITS, via improved communication networks, provides congestion management and real-time information such as weather and road surface conditions. These systems also detect incidents and alert motorists while assuring appropriate incident response.

Where is ITS Heading?

An integrated system of ITS devices must allow its components to communicate with each other on the same channel since networks are typically the most expensive component of a transportation management system. A common "language" among ITS components must exist in order to enable the use of many different devices on the same communication channel without interference and in order for devices from different vendors to communicate with one another. The National Transportation Control for ITS Communications Protocol Standard (NTCIP), a joint initiative of the American Association of State Highway Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), and the National Electrical Manufacturers Association (NEMA), recognizes the need for a common language within the communications industry. The NTCIP is now developing an industry-wide set of communication standards in order to accommodate future technological growth and possibly non-transportation related applications such as air quality monitors for the Environmental Protection Agency or weather stations for the National Weather Service.

The emergence of ITS and its potential for future development provide a promising alternative to expensive capacity-adding projects. The fact that these systems are comprised of existing components and technology, which have operated individually for many years, is itself promising. This implies that there is much we can do to optimize roadway networks by simply examining the transportation system as a whole and focusing attention on more efficiently integrating its many diverse parts. In this way, we can optimize the overall performance of the system. ■

TO WIM OR NOT TO WIM

Introduction

As our industry is plagued with more and more acronyms (as evidenced in contracts in New Jersey) we thought it might be interesting to write a few notes on some of the latest in the industry. WIM and AVC are related to the collection of information on traffic loading and are defined as follows:

WIM - Weigh-in-Motion
AVC - Automatic Vehicle Classification

These two devices are used on highways to classify and weigh all vehicles. Their introduction enables a more accurate definition of axle loading over the highway network.

WIM Devices

The use of WIM sites is considered an essential part of traffic data collection to determine loads and number of vehicles. These devices have been developed during the last twenty years to measure the instantaneous dynamic force generated by axle loads. The dynamic force can vary significantly to a static axle which would be measured on a conventional weigh bridge (typically +/-20% to +/-50%). Thus the use of WIM systems are vital if accurate information on traffic loading is required.

AVC

In addition to vehicle weights, it is also important to monitor the types of vehicles using different highway routes. While less important from a structural aspect this factor governs the planning aspects of most highways.

WIM+AVC Sites

In New Jersey WIM+AVC are installed at the same location using well developed technologies. A typical site comprises two components: 1) inductive loop detectors to classify vehicles and, 2) piezoelectric cables to measure axles loads. The site also includes data logging and storage devices enabling remote collection of data.

As our need to design and build better highways and pavements becomes more important (with the increasingly heavier loads and higher traffic volumes), engineers involved with highway design will make use of WIM and AVC data in their work.

Recent Research

Research is progressing in the US on WIM. Currently, a pooled fund study is being planned which is to be coordinated by the Colorado DOT. Other recent work has included two SHRP-IDEA research projects:

- Fiber-Optic Weigh-In-Motion Sensor (Virginia Polytechnic Institute and State University)
- Load Measuring Mat (University of Cambridge and University of Michigan Transportation Institute)

Information on these projects can be found in the SHRP publication - "SHRP-ID/UWP-91-511 SHRP-IDEA Research Products and Technical Progress".

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Harrisburg Section of the American Society of Highway Engineers
Invites you to attend the

ASHE

Conference '98

May 14-17, 1998
Lancaster, PA

Conference Highlights to Include:

Technical Sessions	Tours
Boston's Central Artery Project	Route 30 Construction Utilizing Texas Loop System
Woodrow Wilson Bridge Project	High Steel Fabrication Plant
Lackawanna Valley Industrial Highway	Harley Davidson Plant
Lancaster Route 30 Project	Amish Farms
EPA Air Quality Standards	Strasburg Railroad
Horseshoe Damage to Highway Pavements	Covered Bridges

Other Items of Fun:

- ASHE 40th Anniversary Celebration
- Become eligible for a Lancaster County Quilt at our Ice Breaker Reception
- Murder-Mystery Dinner
- Golf Tournament
- Shopping

For further information contact Mike Bougher at (717) 787-9512 or P.O. Box 61648, Harrisburg, PA 17106-1648.

BUGGIES TO BELTWAYS U.S. 30

LIFELONG ASHE MEMBER RECOGNIZED

Willis A. Bryan

submitted by James R. Barnicle, P.E., Past National President 1968

One of the most valuable, and often least heralded benefits of belonging to, and attending functions of ASHE is the opportunity to associate with colleagues who possess a vast reservoir of professional and personal experience. One who possesses such individual attributes is Bill Bryan of the Franklin Section who is undoubtedly the oldest active member in our cosmopolitan society at the age of 93. Bill is exceptionally spry for his age, (he was an active golfer until last year), very friendly, loquacious and very willing to discuss his construction career, travels and variety of employment. His memory for details such as names, dates, contractors and projects, is indeed phenomenal.

Willis A. Bryan, P.E. (right) recognized at his retirement in 1968.

Bill and his wife, Martha, reside in a comfortable red brick home shaded by huge oak trees in the village of Prospect just off US Rt. 422 in Butler County, PA. The place of Bill's birth on December 31, 1903. His early years through high school were spent in Prospect. As a sign of affection for his home territory, he and several others are currently engaged in a genealogy project of compiling a chronology of happenings in the Prospect area (The home of the baseball immortal, "Shoeless" Joe Jackson). Bill is proud to count Daniel Boon in his ancestry; so as he says tongue in cheek, "I come from good stock."

He began his construction career in 1924 as a chairman for a survey crew for the Pennsylvania Department of Highways at $65.00 per month. Since they lived away from home, the Corps members received expenses not to exceed $40/month. He rose through the ranks and received his Professional Engineers status in 1947. He has the low number of 9579.

Prior to and following his registration he was employed in a variety of projects, in all three of ASHE's general classifications, as follows:

- 1928-29 As Party Chief on the Trans-Isthmian Highway, Panama Canal Zone (one of ten men on loan to the U.S. Government from the PDH to make an 80 mile survey through the lush jungles of Panama).
- 1929-35 Party Chief, Pittsburgh District of PDH.
- 1935- 42 Transferred to Construction Division of PDH on early 3-lane and 4-lane projects on U.S. Rt. 8 and U.S. 19 in Butler County
- 1942-43 Switched sides, so to speak, to work as a field engineer for a large contractor George M. Brewster on airfields in N.Y. and Maryland.
- 1943-45 Worked for U.S. Navy at Neville Island as inspector on construction of landing craft.
- 1945-47 Was engineer in charge of new 10 million dollar construction and remodeling of Pullman Plant in Butler, PA.

Following is his professional registration:

- 1947 - 53 He returned to the contracting ranks as engineer and superintendent of highway and airport construction for County Construction Co. of Carnegie, PA. During this engagement, Bill directed highway projects, coal processing and restoration, airports, and a 6 1/2 mile extension of the history making Pennsylvania Turnpike in Eastern Pennsylvania.
- 1953-55 Project engineer for the consulting firm of Richardson, Gordon, Ramsey & Fisher on first 15 mile section of the Ohio Turnpike.
- 1955-57 Moving west, Bill was the project engineer for the same consult ing firm on the Indiana Toll Road in the Gary-Chicago area.
- 1957-60 Below the Mason-Dixon Line, Mr. Bryan was project engineer for the same firm on a location study for I-64 through Richmond, VA.
- 1960-62 Bill was with the same consultant as project engineer clearing R/W through the heart of downtown Pittsburgh for the cross-town boulevard near the Civic Arena.
- 1962-68 Mr. Bryan returned to PDH (now PennDOT) as an Assistant District Engineer in Franklin, Clearfield and Scranton.
- 1968 Retired from PennDOT as Deputy District Engineer in Franklin, May 1969 at age 65.

1968- Present Summer in Prospect, Butler Co. Winter in Lakeland, Florida (Spring training ground of Detroit Tigers).

After a 44 year career in all types of construction, is it any wonder that he is conversant in so many civil engineering fields? The real wonder is his interest in and enthusiasm for the many phases of our highway industry, represented by ASHE. ■

"Digging" Gettysburg's Secrets

by Dr. Diane Landers, Cultural Resources Manager, GAI Consultants, Inc.

On March 19, 1996, a park visitor discovered bones at Gettysburg National Military Park, located in Adams County, PA. It was the first time in more than 60 years that human remains had been unearthed on the battlefield. They were found in an eroding bank along the railroad where intense fighting took place on July 1, 1863, the first day of one of the most important battles in our Nation's history.

Erosion was threatening the remains, and the National Park Service needed to take immediate action. After evaluating all options, the Park Service chose GAI Consultants' Cultural Resources Division to conduct the excavation.

Recognizing this as a "once in a lifetime opportunity," GAI assembled its archaeological team to react quickly for the Park Service. GAI staff had five days to solve the mystery surrounding the identity of this individual. The goals were to:

- recover all traces of human remains eroding from the railroad bank,
- identify the context of the burial and determine if the remains were battle-related,
- assess the need to stabilize the railroad bank to avoid other erosional problems.

Television stations and newspapers reported the historic event. Public interest in the project was intense. The Internet was busy with Civil War buffs speculating as to what types of military items the archaeologists would find. Every day, more than 150 tourists visited the excavation.

GAI's archaeologists recovered more than 60 percent of the eroded skeleton. Analysis of the bones by Dr. Susan Frankenberg of the University of Tennessee and Dr. Douglas Owsley of the Smithsonian Institution indicated that this individual was a young male of Euro-American descent. The size of the arm and leg bones indicated that he was strong and physically active, and probably right handed. The soldier was between 20-25 years old. Fracture patterns on recovered skull fragments and X-ray evidence of metallic particles embedded in the bone are consistent with a gunshot wound to the back of the head, the probable cause of death.

The team also found:

- A small white glass button near his wrist. In the 1800's, this type of button was commonly used to fasten undergarments.
- A toe portion of a circa 1862 leather sole several feet below the soldier. Although the origin of the artifact is unknown, it is probably associated with the Civil War soldier's shoe or boot.
- A cast, unfired, 69 caliber round ball and .31-caliber buckshot "buck and ball" was found nearby.

The placement of the partially intact body suggested that this individual was hastily buried in a crevice in the shallow, underlying bedrock. During the hot July days, most soldiers were buried in the battlefield in this manner. A few weeks after the battle, most of the Union soldiers were removed from their battlefield graves and buried in the newly created National Cemetery - the same place, several months after the battle, Abraham Lincoln delivered his famous "Gettysburg Address." Finally 134 years to the day after his death, this soldier was honored in a military ceremony granting him the full military honor he deserves and laid to rest in the Soldiers National Cemetery.

After excavation, the National Park Service awarded GAI the analysis and report contract, including the preparation of a technical and popular (public) report. After analysis, the artifacts will be added to the Gettysburg National Military Park's extensive Civil War collection.

Expressing his gratitude, Park Superintendent Dr. John Latschar wrote, "Your work has opened a window into the last moments of one of the soldiers who fought in the battle. We now have a rare opportunity of offering a respectful and ceremonial burial to this man, one befitting the service he gave to his country-either Union or Confederate. Because of GAI Consultants' commitment to battlefield preservation at Gettysburg, we have inched even closer to the goal of preserving the battlefield at Gettysburg National Military Park for this and all future generations." ■

Mont Clare Bridge

Phoenixville Borough, Chester County
Upper Providence Township, Montgomery County

by Richard Prentice

The Mont Clare Bridge Project was composed of the replacement of a five span stone arch structure crossing the Schuylkill River, a single span concrete arch structure crossing the Schuylkill Canal, and the reconstruction of 1/2 mile of State Route 29. The diverse elements of the project required the close cooperation of the Pennsylvania Department of Transportation with two local municipalities, two counties, and two state agencies as well as the contractor. This close cooperation resulted in completing the project ahead of schedule and within budget.

These bridges have faithfully served as the main connector between Phoenixville and Mont Clare for the past 80 years. When the Pennsylvania Department of Transportation began to develop plans for their replacement, many concerns needed to be addressed before closing this major artery.

Emergency Medical Services could not be interrupted for residents of the Mont Clare community. Upper Providence Township worked out an agreement with the Oaks Fire Company to temporarily house the Phoenixville Hospitals' Advanced Life Support Unit to ensure continuous emergency medical service during the construction. The A.L.S. Unit responded to approximately five calls per week throughout the construction period.

A second concern was the impact of the bridge closures to the area businesses. Merchants on both sides of the Schuylkill river would feel the crunch. The Pennsylvania Department of Transportation had many meetings with the local Chamber of Commerce and agreed to have the bridges closed for the shortest possible time. Working closely with the design teams of Richardson Gordon, Inc. (bridges) and Czop/Specter, Inc. (highway) the Department reduced the closure time from two years to only six months.

The last concern was that continuous access to over one-hundred homes adjacent to Route 29 had to be provided. While keeping all of this access, the major utilities (gas, water, sewer, etc.) needed to be replaced. The existing utility services were maintained to the homes while the new utilities were installed.

The contractor, Alan A. Myers, Inc. was awarded the project with a low bid of $6,020,089. The final bid package included an incentive/disincentive clause. During the construction, cars and trucks were detoured from Phoenixville to Mont Clare. A "special" detour for trucks making deliveries to the businesses adjacent to the bridge was also posted. Pedestrians wanting to cross the river were shuttled to the other side on a free mini bus. This service was part of the construction contract.

On February 17, 1997, the bridges were closed to all traffic so the contractor could prepare the river structure for demolition. Eight days later it was demolished using 700 pounds of explosives. The contractor knew the project was most vulnerable to weather delays in March and early April so removal of the rubble began immediately. If the Schuylkill River swelled, work on the piers could be impossible. Fortunately the river stayed low and the work proceeded forward without delays. The contractor was committed to the project and with a lot of hard work and long hours, the new five span steel beam bridge rose from the river as new piers and abutments were built on the old footings. The single span canal bridge was demolished using standard construction methods because the northern abutment was immediately adjacent to the exterior wall of one of the businesses. The demolition was accomplished without any damage to the adjoining building. A prestressed concrete box beam bridge was installed shortly thereafter.

While all of this bridge work was going on, Alan A. Myers, Inc. was also removing and replacing 1/2 mile of the approaching roadway. After they were awarded the project, the contractor suggested an alternate method to do the road work. They felt that it could be done quicker and safer if they were allowed to mill out the entire roadway and use the millings as a temporary riding surface. This allowed the contractor to easily install the new utilities and then remove the old services. The millings would simply be redistributed over a utility trench after it was properly backfilled. The temporary riding surface was easily maintained and it would not have the drop offs that half-width construction had. Once all of the utility work was done, the temporary roadway would be removed and a new bituminous road installed. With the Department's approval, the contractor proceeded with the alternate method of construction.

Alan A. Myers, Inc. never lost sight of the contract's September 28th deadline. They regularly worked 12 hour days, six days a week. As incentive, the contractor would earn $12,000 a day for each day the Mont Clare Bridge Project opened before September 28. They would also be charged $12,000 for each day the detour remained beyond September 28. The good weather and long hours paid off because the bridge was opened to traffic seven weeks ahead of schedule, on August 10, 1997.

The early opening was a good omen for everyone. It signals a change for the many businesses. The merchants all seem optimistic at this poin; they survived the bridge closure and now they are moving forward. Dust and the noise of construction equipment are now only a memory for all of the home owners living along the reconstructed Route 29. New curbs and sidewalks separate their properties from the newly rebuilt road. Routine activities are beginning to return as the traffic again flows by, but it's quieter because the roadway is smooth and safer because there's a sidewalk. The motorists do not have to take the long and winding Route 113 detour. Now they can drive over a new bridge that is wider and well lit at night thanks to the new decorative street lights. Backups are almost non existent due to the new traffic signal systems. The free mini bus ride is no longer available, but the pedestrians seem to enjoy walking across the new bridges. The early opening also means a $360,000 bonus for the contractor. The project meant a lot of things to a lot of people, but we cannot forget that the Mont Clare Bridge isn't just a concrete structure that spans the Schuylkill river, but a vital link between two communities. This project was successful because the cooperative effort between the many approving agencies allowed the original, aggressive schedule for the Mont Clare Bridge Project to proceed without interruption. The Department of Transportation , Richardson Gordon, Inc., Czop/Specter, Inc., Alan A. Myers, Inc., and all of the other players were always willing to listen to each other. We applaud the patience and the hard work by all! ■

AS THE WHEEL TURNS. . .

Thomas Stockhausen has been appointed Deputy Director of the Transportation Engineering Division for Maguire Group, Inc. Stockhausen currently serves as Vice President Location Officer in charge of Maguire's Pittsburgh and Harrisburg, Pennsylvania offices and as Manager of Transportation Operations in Pennsylvania and will continue these positions as well.

William P. Miller, P.E., has recently joined the firm of Greenhorne & O'Mara, Inc. He will serve as the Manager of Pennsylvania Operations.

Brad D. Brosius, P.E., has been promoted to the position of Branch Manager of the Johnson, Mirmiran & Thompson Pennsylvania Office. Brosius will oversee the technical operations and the administration of the office in York, Pennsylvania.

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