

# ILLINOIS INTERCHANGE

TECHNOLOGY TRANSFER TODAY

FOR TOMORROW



BUREAU OF LOCAL ROADS AND STREETS

L.T.A.P. QUARTERLY

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## Illinois is Extending the Life of its Pavements

by Scott Lackey, Illinois Department of Transportation, District 5

On October 24, 2002, the Illinois Department of Transportation's District 5 office announced the reopening of a ten-mile portion of Federal-Aid Interstate 70 completing one of Illinois' largest downstate interstate reconstruction projects. In addition to being one of the largest it also included one of the toughest completion time lines and required the use of several new materials and construction specifications.

The completion date for the project along with a late season award essentially required the major items of work to be completed in 8 months. The contract was awarded on November 9, 2001 to Walsh Construction of Chicago, Illinois and completed on October 24, 2002.

This project consisted of the reconstruction of 33 year old continuously reinforced concrete pavement (CRCP) on Interstate Route 70, from west of Illinois Route 1 at Marshall to the Indiana State Line. Included in the project was the construction of 4 lanes

of Extended Life 30-year Design continuously reinforced concrete pavement with concrete shoulders, the reconstruction of the Illinois Route 1 and US Route 40 interchanges, the ramps and parking areas of the Cumberland Road rest area, raising five overhead structures and reconstructing ten mainline and one overhead structures, weigh station improvements with weigh in motion detection, retaining wall construction, signing, lighting and drainage improvements.

The average daily traffic for this project varied from 21,000 to 24,000, with truck traffic varying from 10,900 to 11,100. Maintaining traffic and furnishing access to emergency vehicles was crucial to the successful completion of this project. The contract required the closure of the eastbound and westbound lanes during their reconstruction. Traffic was maintained by shifting traffic to the open lanes and providing for one lane traffic in each direction. To assist with the manage-

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Please pass this on to other interested parties in your office.

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Illinois Department of Transportation



## From the Desk of . . .

### Improving Communication Via the IDOT Website

Are you using the correct BLR form or special provision? Have new policies/procedures been issued? What videos or publications are available? The answers to these and other questions may be found on the IDOT website ([www.dot.state.il.us](http://www.dot.state.il.us)).

The best place to start is in the Public Partners section of the website ([www.dot.state.il.us/ppartners.html](http://www.dot.state.il.us/ppartners.html)). Under this section, web browsers will find a section entitled Resources for Local Agencies with links to every page the Bureau of Local Roads and Streets (BLRS) administers; as well as, other bureaus' pages that are frequently used by local agencies. Whether you are a first time user or regular user, BLRS recommends you to bookmark (press ctrl+D) this page as a starting point. As new pages are added to the web site, BLRS will evaluate these pages and add a link to appropriate pages.

BLRS has also developed a subscription service for local agencies. The subscription service allows information to be disseminated to all local agencies in a timely and efficient manner. BLRS issues electronic versions of the circular letters, alerts subscribers of updates to IDOT web pages, distributes the Illinois Interchange and provides general information through the subscription service.

This service is opened to all local agency and consultant employees. In the future BLRS hopes this service will become the primary source of information for local agencies; therefore, BLRS encourages all local agency highway department employees to subscribe to the service.

In order to subscribe, a valid e-mail address and internet access are required. The Public Partners web page contains a link to the subscription service ([www1.dot.state.il.us/LocalRds/menu.asp](http://www1.dot.state.il.us/LocalRds/menu.asp)). To subscribe follow these steps:

1. Press the Subscribe button
2. Fill out the required fields noted by a red asterisk
3. Press the Subscribe button
4. You should receive a confirmation e-mail within a few minutes
5. Reply to the confirmation e-mail by typing "OK" (no quote marks) in the body
6. You should then receive a final confirmation e-mail.

To reduce the number of non-pertinent e-mails, make sure you only subscribe once and select the appropri-

ate type of agency. If you no longer wish to be a member of this service select the unsubscribe button on the above web page.

Please visit and explore the website. There are numerous other sections that you will discover and find invaluable. On every web page administered by BLRS, we try to provide you a contact name, number, and e-mail address. This contact will be able to answer or find the answer for most of your questions regarding that particular web page. Otherwise, if you are unable to find certain information or have a general question, select the "Contact Us" link located at the bottom of every page. Your e-mail will then be passed along to the appropriate IDOT bureau to answer your question.

As always, do not hesitate to contact us. Thank You.

Kevin Burke  
T<sup>2</sup> Program Manager

## Training Survey Reminder For Local Agencies

For those local agencies who haven't completed the training survey, found on page 7, please do so before the June 20, 2003 deadline. This survey is used to determine the classes and locations for next year's training program. Every effort will be made to locate specific classes in the areas showing the most interest.

## SAFETY CORNER

# Why Use a Respirator?

by Donna Ley, Illinois Department of Transportation, Bureau of Employee Services

Your health depends on breathing clean air, but in an industrial environment, breathing hazards may be present. These hazards are often invisible and can cause health problems if you're exposed to them without personal protection in the form of a respirator. Respirators are designed to help protect your health and keep you breathing safely on the job.

Respiratory hazards come in many forms. Dusts, fumes and mists are tiny particles that float in the air. They are generated in processes like spray painting, spraying herbicides, grinding, mowing and sweeping. Gases and vapors are invisible contaminants that mix in the air. Vapors can be found where solvent cleaning, painting or refining takes place. Gases are substances that become airborne at room temperature and have the capability of traveling far and fast. Once the hazard has been

identified, the proper respirator can be selected and should be worn.

The human body has a wonderfully designed respiratory system to carry air and oxygen into the lungs and

can penetrate and damage the respiratory system and other internal organs.

To prevent this damage, respirators are often worn.

Maintenance-free, half mask respirators are the most common form.

These half mask respirators are air-filtering devices that cover your nose and mouth to trap particles or gases and vapors in the air before you can inhale them.

The Occupational Safety and Health Administration (OSHA) has recognized the need for respiratory protection. They revised the respirator standard (CFR1910.134) in recent years to better accommodate both

employers and employees.

Breathing is an essential function of our every day life. If that function is jeopardized, our quality of life will be jeopardized. Why take that chance, look into using respirators and make the choice to protect yourself.



carry waste products out. Even in normal fresh air, the body's natural defenses constantly work to cleanse and purify the air. The body's natural defenses may work fine under normal conditions, but when you're exposed to breathing hazards, you need extra protection. When unprotected, hazards

# Context Sensitive Design and Beyond

by Kathy Ames, Illinois Department of Transportation, Bureau of Design and Environment

Context Sensitive Design (CSD) is an approach in designing a transportation project that considers the total context of its surroundings. It integrates engineering, environment, economics, community values, and aesthetic concerns into project development.

Historically, the nation's transportation system was designed to move people and goods quickly and safely to their destination. As early as the 1960s people became aware of the social and natural resources impacts in the construction of transportation projects. Through the 1980s people began to design transportation projects with an awareness of the project's surroundings.

Several laws were passed which emphasized the importance of transportation project design to its surroundings in the 1990s. The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 emphasized the preservation of historic and scenic resources. The National Highway Designation Act (NHS) of 1995 strengthened the emphasis on designing a highway sensitive to its surroundings. The Transportation Efficiency Act for the 21st Century (TEA 21) of 1998 provided additional funding and flexibility for community aspects of highway projects.

In May 1998 a workshop was held by the Maryland Department of Transportation State Highway Administration, AASHTO, and FHWA entitled, "Thinking Beyond the Pave-

ment: A National Workshop on Integrating Highway Development With Communities and the Environment." At that workshop the following principles of Context Sensitive Design were developed:

## Qualities of Excellence in Transportation Design

- The project satisfies the purpose and needs as agreed to by a full

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**Context Sensitive Design (CSD) is an approach in designing a transportation project that considers the total context of its surroundings.**

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range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted as the project develops.

- The project is a safe facility for both the user and the community.
- The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic, and natural resource values of the area, i.e., exhibits context sensitive design.
- The project exceeds the expecta-

tions of both designers and stakeholders and achieves a level of excellence in people's minds.

- The project involves efficient and effective use of the resources (time, budget, community) of all involved parties.
- The project is built with minimal disruption to the community.
- The project is seen as having added lasting value to the community.

## Characteristics of the Process Contributing to Excellence

- Communication with all stakeholders is open, honest, early, and continuous.
- A multidisciplinary team is established early, with disciplines based on the needs of the specific project, with the inclusion of the public.
- A full range of stakeholders is involved with transportation officials in the scoping phase. The purposes of the project are clearly defined, and consensus on the scope is forged before proceeding.
- The highway development process is tailored to meet the circumstances. This process should examine multiple alternatives that will result in a consensus of approach methods.
- A commitment to the process from

*(continued on page 5)*

**Context Sensitive Design**

*(continued from page 4)*

top agency officials and local leaders is secured.

- The public involvement process, which includes informal meetings, is tailored to the project.
- The landscape, the community, and valued resources are understood before engineering design is started.
- A full range of tools for communication about project alternatives is used (e.g., visualization).

Five pilot states, Maryland, Connecticut, Kentucky, Minnesota, and Utah, as well as the FHWA Federal Lands Highway are implementing CSD/Thinking Beyond the Pavement programs through new policies on project development, staff training, conferences, research, and community outreach.

A new term, Context Sensitive Solutions (CSS), is emerging to guide development of transportation projects in all phases, planning, design, construction, and operations. It strives to balance environment, scenic, aesthetic, cultural, natural resources, community, and transportation service needs. Context Sensitive Solutions

projects recognize community goals, and are designed, built, and maintained to be sustainable while minimizing disruption to the community and the environment. The identification of community values by community interaction requires that public involvement is critical to the success of CSS.

In summary, Context Sensitive Design and beyond to Context Sensitive Solutions is an approach to transportation project development through construction and operations. It includes preservation of historic resources, scenic, natural environment, and community values in conjunction with mobility, safety, and economics.



The West Central Illinois Highway Commissioners Association is having its 11th Annual Summer Seminar on Tuesday, June 17 and Wednesday, June 18. The Tuesday session is an informational seminar that will address township highway related topics and will include lunch. The seminar will be held at the Macomb

American Legion Hall starting at 9:00 a.m. with registration beginning at 8:00. The day will end with an equipment show, entertainment and dinner at Lake Argyle State Park near Colchester, Illinois.

All of Wednesday's session will be held at Lake Argyle featuring breakfast, vendor booths, construction and maintenance

demonstrations (including hands-on), lunch and prize drawings.

This seminar is open to all Townships and Counties. Please check your Illinois County and Township Perspective magazine for the registration form and detailed agenda or call Mark Boyer at (309) 289-6365 for more information.

## Illinois is Extending the Life of its Pavement

(continued from page 1)

ment of traffic, an Automated Information Management System (AIMS) was used to provide continuous real time monitoring of traffic within a twenty mile radius of the project.

This project included several specifications that are new to Illinois and perhaps the nation. The specifications were all to improve the quality and service life of the new pavement and bridges. The specifications included 30 year Extended Life Pavement, increased pavement curing time, High Performance Concrete, including aggregate optimization, penetrating water-repellant concrete bridge deck sealers, pavement and bridge deck smoothness utilizing a "zero blanking band", variable spaced pavement timing to reduce surface noise, and five year warranties on both the pavement and bridge decks.

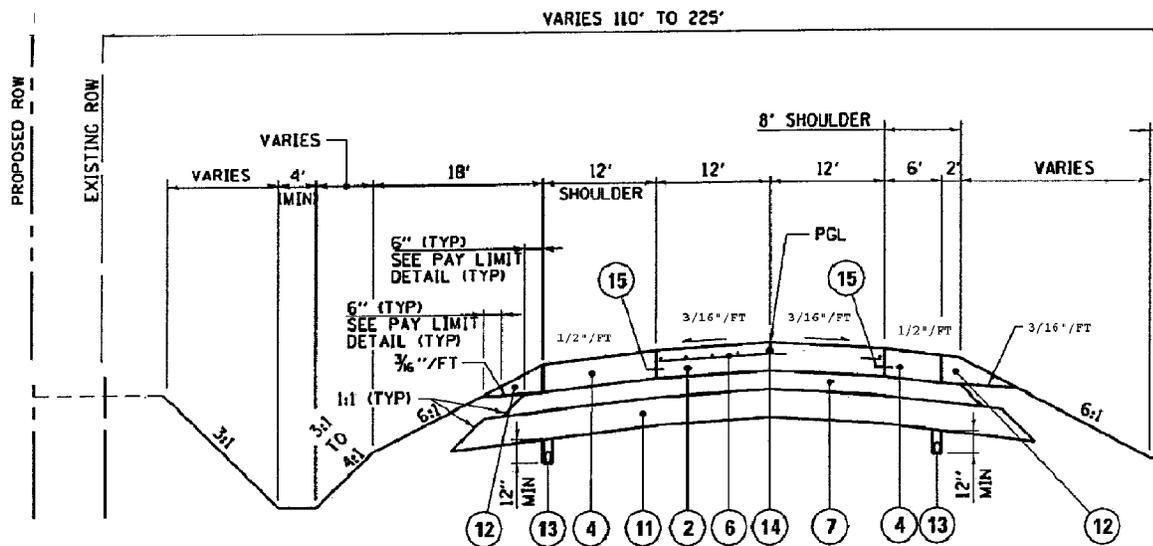
Should there be any questions you may contact Scott A. Lackey, District 5 Materials Engineer, at (217)-466-7263 or Scott W. Neihart, District 5 Program Development Project Engineer, at (217)-466-7219.

## Editors Note

The T<sup>2</sup> Center has available through the Video/Publication Catalog, Publication #P021-*Extended Life Continuously Reinforced Concrete Pavement*.

To obtain a copy, fill out the order form from the Video/Publication Catalog. The catalog can be found on the website at <http://www.dot.state.il.us/blr/library.html> or you may contact the center at 217/782-1682.

## Typical Section of 30 Year CRC Pavement



- ② Continuously Reinforced Portland Cement Concrete Pavement, 13"
- ④ Portland Cement Concrete Shoulders, 13"
- ⑥ Pavement Reinforcement, 13"
- ⑦ Bituminous Concrete Binder Course, Superpave, IL-19.OL (Low Esal) (672 lbs. per sq. yd.)
- ⑪ Aggregate Subbase, 12"
- ⑫ Aggregate Shoulders, Type B, Variable Depth
- ⑬ Pipe Underdrains, 4"
- ⑭ Sawed Longitudinal Joint-30" Long, "8 Epoxy coated bars at 24" Centers
- ⑮ Longitudinal Construction Joint-30" Long, "8 Epoxy coated bars at 24" Centers

# We Need Your Help . . . It's Time to Plan the 2003-2004 Training Program

The Bureau of Local Roads and Streets' Technology Transfer Center is soliciting **local agency** interest in classes for the October 2003 to April 2004 training program. Please look over the list and indicate those classes of interest to you or your personnel by filling in the blank with an approximate number of attendees your agency would send if the classes were available in your area. This solicitation will be used by the Center in scheduling the 2003-2004 training program. Every effort will be made to locate specific classes in areas showing the most interest. Classes lacking in interest will be dropped from this year's schedule.

Please complete this class interest survey and mail or fax it to the Center at (217) 785-7296 by **June 20, 2003**. If you have questions regarding class content, please call the Center at (217) 785-2350.

	Approximate Number		Approximate Number
Backhoe Safety (1/2 day)	_____	Pavement Maintenance (1 day)	_____
Bridge Construction Inspection (2 days)	_____	Power Line Awareness (1 day)	_____
Bridge Inventory Documentation (1 day)	_____	Retroreflectivity (TBA)	_____
Bridge Piling (1 day)	_____	Rehab of Streets & Highways Seminar (1 day)	_____
Bridge Repair (1 day)	_____	Small Drainage Structure Const. Insp. (2 days)	_____
Bridge Safety Inspection (1 day)	_____	Snow & Ice Control (1/2 day)	_____
Confined Space Awareness (1/2 day)	_____	Street Sweeping (1 day)	_____
*Culvert Hydraulics (1/2 day)	_____	Structure Info & Management Systems (SIMS) (1 day)	_____
Documentation (2 days)	_____	Surveying I-Beginning (3 days)	_____
Erosion Control (1 day)	_____	Surveying II-Intermediate (4 days)	_____
Flagger Training (1/2 day)	_____	Surveying III-Construction Staking (3 days)	_____
Hazardous Material-First Responder (1 day)	_____	Surveying IV-Map GPS & St. Pl. Coord.(2 days)	_____
*HEC-RAS (2 days)	_____	Team Building (1 day)	_____
Highway Jurisdiction/Transfers (1 day)	_____	Traffic Signal Maintenance (1 day)	_____
Highway Signing (1 day)	_____	Trenching & Shoring Safety (1/2 day)	_____
Highway Engineering Principles (1 day)	_____	Work Zone Safety (1 day)	_____
MFT Accounting and Auditing (1 day)	_____	Understanding Specifications (1 day)	_____
OSHA 10-Hour General Industry (1 1/2 days)	_____	Urban Storm Mitigation/Tree Damage (1 day)	_____
Pavement Construction Inspection	_____		

Other classes you would like to see offered and number of potential attendees from your agency.

\_\_\_\_\_

\*Culvert Hydraulics and HEC-RAS are computer programs offered only in Springfield.

Contact Person \_\_\_\_\_ Agency \_\_\_\_\_

Phone Number \_\_\_\_\_ Fax Number \_\_\_\_\_ Zip Code \_\_\_\_\_

# NOTICE FOR NHI COURSES

Below is a list of the National Highway Institute (NHI) courses available in 2004. The Illinois Department of Transportation sponsors these training courses whenever departmental demand is sufficient. In the past, local agencies, consultants, and contractors have been allowed to participate in these IDOT sponsored courses whenever openings are available.

If you are interested in any of these courses, complete the attached survey and return to Brad Risinger, Illinois Department of Transportation, 2300 South Dirksen Parkway, Room 313, Springfield, IL 62764. This survey, along with a survey of IDOT employees, will help determine demand for NHI courses in FY 2004. If you need additional information, you may go to the NHI website at [www.nhi.fhwa.dot.gov](http://www.nhi.fhwa.dot.gov), or contact Brad at (217) 782-3708 or [risingerbd@nt.dot.state.il.us](mailto:risingerbd@nt.dot.state.il.us). **This survey must be returned by July 15, 2003 to be considered for FY 2004.**

## Civil Engineering – Structures

- 130053 Bridge Inspection Refresher Course
- 130054 Engineering Concepts for Bridge Inspectors
- @ 130055 Safety Inspection of In-Service Bridges  
(see note at bottom of page)
- 130060 Vessel Collision Design for Highway Bridges
- # 130078 Fracture Critical Inspection Techniques for Steel Bridges
- 134056 Pontis Bridge Management

## Civil Engineering – Materials, Pavements, and Base Design

- 131019 Portland Cement Concrete Materials
- 131023 Highway Materials Engineering
- 131026 Pavement Subsurface Drainage Design
- 131029 AASHTO Pavement Overlay Design
- @ 131032 Hot-Mix Asphalt Construction
- 131033 Const. of Portland Cement Concrete Pavements
- @ 131044 Hot-Mix Asphalt Production Facilities
- @ 131045 Hot-Mix Asphalt Materials, Characteristics and Control
- @ 131050 Asphalt Pavement Recycling for State & Local Governments
- 131054 Pavement Preservation: The PMS Concept
- 131058 Pavement Preservation: Selecting Pavements for Preventative Maintenance
- 131060 Concrete Pavements Design Details & Construction Practices
- 131062 P.C.C. Pavement Evaluation & Rehabilitation
- 131063 Hot-Mix Asphalt Pavement Evaluation & Rehabilitation
- # 131064 Introduction to Mechanistic Design for New & Rehabilitated Pavements
- # 131100 Pavement Smoothness: User of Inertial Profiler Measurements for Construction Quality Control

- 131105 Analysis of PMS Data for Engineering Applications

## Civil Engineering - Geotechnical

- 132012 Soils & Foundations Workshop
- 132013 Geosynthetics Engineering Workshop
- 132014 Drilled Shafts
- 132016 Geotechnical & Foundation Engineering
- 132021 Driven Pile Foundations-Design & Construction
- 132022 Driven Pile Foundations-Construction Monitoring
- 132031 Geo./Found. Engr.:Mod. 1-Subsurface Investigation
- 132032 Geo./Found. Engr.: Mod. 2-Geotechnical Contracting and QA/QC
- 132033 Geo./Found. Engr.: Mod. 3-Soil Slopes & Embankment Design
- 132034 Geo./Found. Engr.: Mod. 4-Ground Improvement Techniques
- 132035 Geo./Found. Engr.: Mod. 5-Rock Slopes:
- 132036 Geo./Found. Engr.: Mod. 6-Earth Retaining Structures
- 132037 Geo./Found. Engr.: Mod. 7-Shallow Foundations
- 132038 Geo./Found. Engr.: Mod. 8-Deep Foundations
- 132039 Geo./Found. Engr.: Mod. 9- Geotechnical Earthquake Engineering

### NOTE

13055 - Safety Inspection of In-Service Bridges is commonly referred to as the **two-week Bridge Inspector Training Course** which is scheduled in Schaumburg on July 7-18, 2003.

- 132040 Geo./Found. Engr.: Mod. 10 - Geotechnical Aspects of Pavements  
 132041 Geo./Found. Engr.: Mod. 11 - Geotechnical Instrumentation  
 132042 Design of Mechanically Stabilized Earth Walls & Reinforced Soil Slopes  
 132043 Construction of Mechanically Stabilized Earth Walls & Reinforced Soil Slopes  
 # 132069 Driven Pile Foundation Inspection  
 # 132070 Driven Shaft Foundation Inspection

### Civil Engineering – Design & Traffic Operations

- 133005 Highway Capacity & Quality of Flow  
 133010 Computerized Traffic Signal Systems  
 133028 Traffic Control Software & Signalization  
 133048 Managing Traffic Incidents & Roadway Emergencies  
 133072 High Occupancy Vehicle (HOV) Facilities  
 133075 Freeway Traffic Operations  
 133077 Transient Protection Grounding & Shielding of Electronic Traffic Control Equipment  
 133078 Access Management, Location & Design  
 133098 Regional Planning for Operations

### Civil Engineering – Construction & Maintenance

- 134001 Principles of Writing Highway Construction Specs  
 134005 Value Engineering Workshop  
 134006 Highway/Utility Issues  
 134029 Bridge Maintenance Training  
 134042 Materials Control & Acceptance-Quality Assurance  
 134049 Use of Critical Path Method (CPM) for Estimating, Scheduling & Timely Completion  
 # 134054 Design and Implementation of Erosion and Sediment Control  
 134056 Pontis Bridge Management

### Civil Engineering - Hydraulics

- # 135010 Highways in the River Environment  
 135027 Urban Drainage Design  
 135028 Stormwater Pump Station Design  
 135041 HEC-RAS, River Analysis System  
 @ 135046 Stream Stability & Scour at Highway Bridges  
 135047 Stream Stability & Scour at Highway Bridges for Bridge Inspectors  
 # 135048 Countermeasure Design for Bridge Scour & Stream Instability  
 @ 135056 Culvert Design  
 135065 Introduction to Highway Hydraulics  
 @ 135067 Practical Highway Hydrology  
 135071 Surface Water Modeling with Flo2 DH & SMS  
 135080 Hydrologic Modeling with the Watershed

- Modeling System (WMS)  
 135081 Introduction to Highway Hydraulics Software

### Civil Engineering – Intelligent Transportation Systems (ITS)

- 137001 Intelligent Transportation Systems (ITS) Awareness Seminar  
 137002 Deploying Integrated ITS - Metropolitan  
 137003 ITS Public/Private Partnerships  
 # 137005 ITS Telecommunications Overview  
 137007 Rural ITS Toolbox  
 @137013 Using the National ITS Architecture for Deployment  
 137015 Introduction to the National ITS Architecture  
 @137019 ITS Software Acquisition  
 137020 ITS Procurement  
 # 137022 CORSIM Traffic Simulation Model Training  
 # 137024 Introduction to Systems Engineering  
 # 137025 Recommended Practices for Operations of Advanced Transportation Systems  
 # 137026 Project Management for Advanced Transportation Systems  
 # 137029 Turbo Architecture Software Training  
 137030 Fundamentals of Road Weather Management  
 137041 ITS Deployment Analysis System (IDAS)  
 137042 Configuration Management (CM) for Traffic Management Systems

### Real Estate

- 141029 Basic Relocation  
 141030 Advanced Relocation  
 141031 Business Relocation  
 141036 Eminent Domain Training for Attorneys & Appraisers  
 141045 Real Estate Acquisition Under the Uniform Act

### Environment

- @ 142005 NEPA & Transportation Decision Making  
 142007 Fundamentals & Abatement of Highway Traffic Noise  
 142018 Functional Assessment of Wetlands  
 142036 Public Involvement the Transportation Decision Making Process  
 142042 Fundamentals of Environmental Justice  
 # 142045 Pedestrian Facility Design  
 # 142046 Bicycle Facility Design

### Statewide Planning

- 151018 Application of the FHWA Traffic Monitoring Guide  
 151021 Administration of FHWA Planning Grant

- 151029 Application of Geographic Information Systems for Transportation
- 151034 Development and Implementation of Travel Surveys
- # 151039 Applying Spatial Data Technologies for Transportation Planning

**Metropolitan Planning**

- 152054 Intro. to Urban Travel Demand Forecasting
- 152060 Advanced Urban Travel Demand Forecasting for Large Urban Areas
- # 152068 ITS Deployment Analysis System (IDAS)
- # 152071 Estimating Regional Mobile Source Emissions

**Financial Management**

- 231013 Highway Program Financing

**Civil Rights**

- 361019 On the Road to Equality: Women in Highway Construction

- 361020 Partnering for Native American Employment in Highway Construction

**Highway Safety**

- @ 380003 Design & Operation of Work Zone Traffic Control
- 380005 Railroad-Highway Grade Crossing Improvement Program
- # 380032 AASHTO Roadside Design Guide
- @ 380034 Design Construction & Maintenance of Highway Safety Appurtenances & Features
- @ 380060 Work Zone Traffic Control for Maintenance & Operations on Rural Highways
- @ 380063 Construction Zone Safety Inspection
- # 380068 Tools for Integrating Highway Safety Into Design
- 380069 Road Safety Audits and Road Safety Audit Reviews
- 380070 Safety and Operational Effect of Geometric Design Features for 2-Lane Rural Highways

# = New or Revised Course Listing

@ = Updated Courses

# NHI COURSE SURVEY

**Please Return To:** Brad Risinger, Illinois Department of Transportation, Room 313, 2300 South Dirksen Parkway, Springfield, IL 62764 or by fax at 217/524-7260.

Course No.	Title	# of Participants
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**RETURNED BY:**

**Company** \_\_\_\_\_

**Address** \_\_\_\_\_

**Contact Person** \_\_\_\_\_

**Telephone** \_\_\_\_\_

# Numbering the Highway System

Often you can determine the proper road to take by the road number itself. Knowing your numbers helps you know which direction you are going on U.S. highways. Here's how the highway systems are numbered.

## Interstate Highways – 2 Digits

The interstate system totals 46,300 miles. All interstate highways are marked by blue signs with red tops.

The north-south highways have odd numbers with 1 or 2 digits, usually including a 5. The lowest numbers are on the West Coast and increase as they move east. For example, I-5 (California) is on the West Coast, I-97 (Maryland) on the East Coast.

The east-west highways have even numbers with 1 or 2 digits. The lowest numbers are in the South and increase as they go north. For example, I-4 runs through Florida; I-96 in Michigan is the northernmost route.

TIP: Since not all Interstates run due east-west or north-south, the closest cardinal direction that applies to most of the road is used. So, even if a stretch of a north-south Interstate shifts to the east for a while, it is still



considered a north-south highway. (Example: I-85 between Atlanta and Charlotte)

## Interstate Highways – 3 Digits

Seems pretty simple so far right? Well we then get to the exciting issue of the 3 digit Interstates. Most Interstates have children when they reach major cities. If the baby Interstate goes through the city or all the way around the city, then it will start with an even number. If it stops somewhere in the city, then it gets an odd number. For example, in Pittsburgh I-279 loops from I-79 into the city and then reconnects with it further north. In contrast, I-376 leaves I-76 to go into Pittsburgh and ends downtown. In principle this shouldn't be that big of a deal, but in practice it is frequently debatable as to whether the first number should be even or odd. Some highly questionable choices have been made, which annoys a lot of us road geeks (and don't even get us started on I-238).

## U.S. Routes

U.S. routes are posted in black letters on white signs.

The north-south routes have odd numbers, with 1 to 3 digits. These numbers increase from east to west (just the opposite of the interstate system). For example, U.S. 1 runs along the East Coast; U.S. 101 runs along the West Coast.

The east-west routes have even numbers, with 1 to 3 digits. The lowest numbers are in the North and increase moving south (just the opposite of the



interstates). For example, U.S. 2 runs along the Canadian border; U.S. 90 runs through Texas.

## Mile Markers

Have you noticed those small markers along the side of Interstate highways and some other roads? They are usually green or white and have the word MILE along with a number; some just have the number. These "mile markers" show the number of miles from where the Interstate route entered the state in which you are traveling. The counting always begins at the state line in the south (for north-south routes) and in the west (for east-west routes). So, mile marker numbers always get larger as you travel north or east.

For example, if you enter South Carolina from Georgia traveling on I-85, the mile markers will begin with "Mile 1" and get larger as you drive north through the state. When you cross the state line into North Carolina, you will see "Mile 1" again.

TIP: When a major highway or Interstate originates inside a state, the

*(continued on page 12)*

## Numbering the Highway System

*(Continued from page 11)*

numbering begins (south-to-north or west-to-east) from the junction where the road begins. (Example I-77 in Columbia)

Knowing how to read mile markers can help you:

- Know exactly where you are.
- Determine how far it is to your destination.
- Do your planning before a trip.
- Give an exact location if you have to call for roadside assistance.

Three highways run from coast to coast: I-10, I-80, and I-90. Seven highways run from border to border: I-5, I-15, I-35, I-55, I-65, I-75, and I-95.

## Interchanges and Mile Markers

Each state uses one of these

systems for numbering its Interstate interchanges:

Some states, like South Carolina, link Interstate interchange numbers to mile markers, so that the number on the mile marker is the same as the number of the Interstate exit or interchange. Exit 40 may be at or very close to Mile 40. This is a real aid to navigation and trip planning. For example, if your destination is Exit 50, you know it's only 10 miles away.

Some states, like Florida, number their Interstate interchanges consecutively, without linking them to mile markers. Exit 40 may be at Mile 140, and Exit 50 at Mile 240 - so don't make the mistake of thinking the next exits are only 10 miles apart.

Look at a map to figure out which system is being used. Also watch the exit and mile marker numbers to

see if they match. But, remember:

If you enter a state from the south or west, the mile markers will begin with Mile 1. If you enter a state from the east or north, the first numbers you see will be large and they will get smaller as you travel.

There may be an Exit 1 immediately at Mile 1, but check the numbers further along the highway to see if they continue to match.

You may also see mile markers on roads off the Interstate system, but the markers and the numbering systems may be different from state to state - or even county to county. Watching these numbers will still be useful if you have to call for assistance.

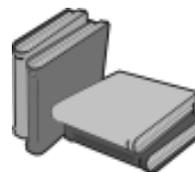
*(reprinted with permission from Indiana LTAP, The Pothole Gazette, Vol. 1, 2002.)*

# Illinois' Top Four and Top Five

## Top Four Videos



- V077-Snow & Ice Control 2002
- V058-Plow Power
- V033-Backhoe Operation & The Hazards of Hurry
- V508-Avoid Hot Mix Hazards: Working Safely With Hot Mix



## Top Five Publications

- L003-Repair of Potholes in Asphalt Surfaced Pavements
- L004-Concrete Pavement Repair Manuals of Practice
- P004-Illinois Highway Design Standards for Traffic Control
- P001-Work Area Protection Guide
- P003-Flaggers Handbook

# Asset Management: A Potential Tool to Assist in Homeland Security and Emergency Preparedness

The terrorist attacks of September 11, 2001 have laid an additional task at the doorstep of transportation and public works agencies. Not only do these agencies have to pick up the pieces and make major repairs to various infrastructure elements after natural disasters, now they are charged with addressing the threat and damage of terrorist attacks.

In addition to the principal task of constructing, maintaining, and preserving transportation systems and critical infrastructure elements, these agencies will most likely be charged with carrying out proposed homeland security measures. These duties will likely involve developing and maintaining improved security systems, designing and constructing infrastructure systems that are resistant to damage from terrorist attacks, and developing and carrying out improved emergency response plans.

The tool of asset management coupled with GPS & GIS technologies has the potential for enhancing emer-

gency preparedness and homeland security measures. The major elements of asset management as shown in the system diagram provide the opportunity for rapid identification of critical infrastructure elements and early response to both natural disasters and terrorist damage.

The inventory element provides detailed information (design, physical features, age, location, etc.) of each infrastructure element. The condition assessment element offers a defined procedure for evaluating current conditions. The performance objective element defines and sets forth the functional and structural capacity requirements. The asset evaluation element establishes the monetary and functional value of each infrastructure elements.

The analysis of alternate strategies provides a structured means of determining the most efficient and cost effective strategy of repair or replacement. The resource allocation element provides a means to optimize the use of

limited resources. The implementation element sets forth a defined plan of execution. The performance measurement element assesses the achievement

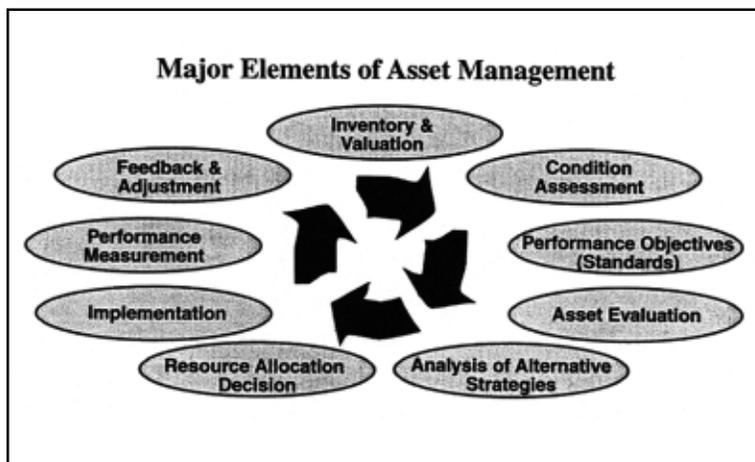
of performance objectives. The last element, feedback, enables continuous improvement and refinements to be made.

Many have forgotten that the Interstate Highway System was primarily built for the purpose of national defense. The recent actions taken to protect critical structures on this system has reminded us of this purpose.

Transportation is critical to our way of life; therefore, transportation system security must be given the highest priority. The Transportation Research Board (TRB) and The National Academies have generated extensive information on this issue in recent years.

The TRB Task Force on Critical Infrastructure Protection is sponsoring a Web site that contains discussions of issues, actions that can be taken, guidance and training opportunities. In addition, TR News 211 (Nov-Dec 2000), presents several articles dealing with transportation security. All modes of transportation security (aviation, all forms of surface transportation, and seaport/maritime) are addressed by TRB. More than 50 sources of information on transportation security are listed through TRB's Web site [[www4.nas.edu/trb/homepage.nsf/web/security](http://www4.nas.edu/trb/homepage.nsf/web/security)].

*(Adapted with permission from Doyt Y. Bolling, P.E., Director, Utah Technology Transfer Center, On the Move Newsletter, Winter 2002, Vol. 15, No. 1)*



# GASB 34 - Asset Management Program

The Government Standards Accounting Board (GASB) has established new standards requiring local governments to develop an asset management program. GASB Statement 34 is a policy statement that establishes reporting requirements for state and local governments. On June 15, 2003, all governmental agencies will be required to be in compliance with GASB 34.

GASB 34 could be considered the equivalent of the "Paperwork Enhancement Act" for small governments. However, before you decide it is not worth the effort, consider that this may just help your agency to document how it is expending tax payer dollars efficiently. More importantly, it will provide a basis for local governments to approach boards, councils, legislative bodies and the public to improve funding for infrastructure.

Be proactive when you start this process. First ask the question, "What is required and what does an agency have to do to be in compliance?" Unfortunately there is no right or wrong answer. It is up to the local agency, with consultation with its treasurer, management staff, and the assistance of its auditor, to determine what will be done to comply with the standard.

The key is to inventory and account for major assets which the local agency is responsible for maintaining. The program will require input from many departments and individuals who may have responsibilities for the purchase, construction and/or maintenance of the physical assets of the agency. Assets that need to be

considered may be dealt with on an individual basis or on a network basis. An example would be for a County to inventory and develop a replacement cost of a section of road or the County could analyze its whole network of roads. It is up to the agency to decide how to develop and analyze the costs associated with its assets.

GASB 34 provide a mechanism so major assets are inventoried and accounted for in the agency's financial statements. Items an agency need to include are fixed assets, equipment (both heavy equipment and light vehicles), buildings and grounds, furniture, art and historical collections and infrastructure. By far the most complex requirement GASB 34 encompasses is the inventory, cost and depreciation of an agency's infrastructure, including roads and bridges, water, sanitary and storm sewer systems and related assets.

This is where thorough planning is required. Commitments to the level

of staffing and the overall amount of information an agency selects to secure as their baseline will help establish what resources and time commitments are necessary. At this stage several policies need to be developed and approved by the governing body.

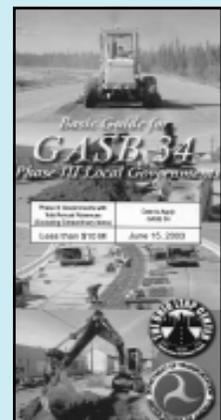
1. What is going to be included in the program? Identify major system, components and sub-systems to be included in the program. Include a complete inventory of assets, along with determination of useful lives and methods of developing costs and the depreciation methods for the assets.
2. Who is responsible for the program by phase, and final report compilation? At the end of each reporting period the local agency will be required to write and present for the auditors use a "Management Discussion and Analysis" for use in preparing the

*(continued on page 15)*

## Editor's Note

The T<sup>2</sup> Center has available through the Video/Publication Catalog, Publication #P020-*Pocket Guide: GASB 34 - Phase III Local Governments.*

To obtain a copy, fill out the order form from the Video/Publication Catalog. The catalog can be found on the website at <http://www.dot.state.il.us/blr/library.html> or you may contact the center at 217/782-1682.



## GASB 34-Asset Management

(continued from page 14)

annual audit report.

3. The program must be reproducible so changes over time can be accounted for and justified. If staff changes, the data used must be documented well enough so a new person or change in agency policy affecting the inventory can be accounted for without major disruption.
4. When determining the method of depreciation to be used, two choices exist—straight-line depreciation or the modified approach.

The modified approach requires an asset management program and a financial commitment by the governing

body in keeping assets at a specified improvement level. For example, a County would commit to allocate enough resources to resurface all roads every five years. If that policy were not met, then it would be reported as a negative issue in the audit report.

On the other hand, straight-line depreciation does not require a commitment to keep assets at a prescribed level. It simply depreciates an asset over the useful life of the asset. The policy an agency develops will need to define the useful lives of the assets and how they are determined.

The standards do not directly outline the consequences for non-compliance. However, if an agency does not comply, auditors will be required to provide a discussion about non-compliance in the audit report that,

at a minimum, will be reported to the public as a black mark against the agency. It may also have an affect if the agency finances or requires financing. A negative audit report could impact interest rates extended to the agency or even the agency's ability to obtain financing.

The bottom line is that all governmental agencies must implement the requirements of GASB 34. The best advice that can be given at this point is to start planning and developing a program to assist you and your agency to do a better job.

(reprinted with permission from Frank Page, WACERS and the Wyoming T2 Center Newsletter, Winter 2003.)

## Sign Change Deadline

The Millennium Edition of the Manual on Uniform Traffic Control Devices (MUTCD) has now been available for two years. This manual supercedes all requirements of the previous 1988 edition. There are several changes in requirements for traffic signs in the new MUTCD. In many cases, quite a few years are allowed before compliance is required with new rules.

However, one required change is less than a year away. At intersections where traffic is required to stop from all directions, the old

edition of the MUTCD stated that a supplemental plaque with the message "4-WAY," "3-WAY" or "ALL WAY" **MAY** be placed under the stop signs. The current MUTCD changes this. It states that the supplemental plaques just mentioned **SHALL** be placed at these locations and **the date for compliance with this requirement is January 17, 2004** - less than a year away. It would be prudent to begin installing these during routine sign maintenance.

Remember, this is required only at intersections where traffic from all directions is required to stop. At a

four-way intersection with stop control on only two legs, no advisory plates are used.



(reprinted with permission from Ken Skorseth, South Dakota LTAP Field Services Manager, The Connection, Spring 2003.)

## Illinois Interchange

The Technology Transfer (T<sup>2</sup>) Program is a nationwide effort financed jointly by the Federal Highway Administration and individual state departments of transportation. Its purpose is to interchange the latest state-of-the-art technology in the areas of roads and bridges by translating the technology into terms understood by local and state highway or transportation personnel.

The Illinois Interchange is published quarterly by the Illinois Technology Transfer Center at the Illinois Department of Transportation. Any opinions, findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect views of the Illinois Department of Transportation, or the Federal Highway Administration. Any product mentioned in the Illinois Interchange is for informational purposes only and should not be considered a product endorsement. Subscriptions are free and are available by writing to:

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