

ITS MIDWEST & GCM *Express Lanes*

ITS MIDWEST

The Intelligent Transportation Society of the Midwest
A regional chapter of ITS America including the states of
Illinois, Indiana, Wisconsin



January 2001 Volume 6.1

ITSMW 2001 Annual Meeting to be Held at Chicago Auto Show

Beginning this year and in the future, ITS Midwest will hold its annual meeting at the Chicago Auto Show in February. According to Adrian Tentner, ITSMW President, some other ITSMW meeting event will occur during the summer period that the annual meeting was traditionally scheduled. This event will rotate to different locations. According to Tentner, the ITSMW board decided that holding the annual meeting each year in Chicago and avoiding summer vacation periods held advantages. Also, the Chicago Auto Show has always been a popular draw.

The 2001 ITSMW Annual Meeting will be held at McCormick Place on Thursday, February 15th. The ITSMW meeting will feature updates on ITS projects in Illinois, Indiana, and Wisconsin, as well as the status of the national ITS program. Open discussions on future ITS Midwest activities and opportunities will also be held, including the 2002 ITS World Congress to be held in Chicago.

Dennis Foderberg from Minnesota DOT will speak at the luncheon. He will provide a status report on the planning underway for the 2002

Chicago World Congress.

As in the past, all registered attendees will receive a complimentary pass to visit the auto show following the meeting. This is the 100th anniversary presentation of the Chicago Auto Show. It is the longest-running auto show in North America, first presented in 1901. See the meeting registration information on page 5 for further details. □

Contact: Claire Jonak, IDOT, (847) 705-4800,
jonakcm@nt.dot.state.il.us.



Buick Bengal Roadster concept car for 2001.

EXPRESS LANES is the official newsletter of ITS Midwest and the GCM Priority Corridor. Your comments, suggestions, and contributions are welcome.

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ITS Forum 2000 Builds on Success

Forum focuses on cost-effective ways ITS has led to measurable benefits in transportation, including reductions in crashes and improvements in traffic flow.

Wisconsin State Senator Richard Grobschmidt kicked off the sixth annual regional ITS forum by challenging the 150 attendees to aggressively communicate the importance and benefits of Intelligent Transportation Systems to elected officials and the community. The meeting was held at Marquette University in Milwaukee, Wisconsin, on September 27, 2000.



Senator Richard Grobschmidt, Democrat of the Wisconsin 7th Senate District, addresses the ITS Forum.

Ruben Anthony, deputy director of WisDOT's southeast transportation district welcomed the broad cross section of public and private sector participants representing

transportation, law enforcement, public safety, education, and communications. Steve Lockwood of PB Farradyne gave the keynote presentation on "Transportation Operations and Lessons Learned from ITS."

The one-day forum, which focused on ITS success stories, heard morning presentations on ITS deployment and partnerships in Maricopa, Arizona, Harrisburg, Pennsylvania, Springfield, Missouri, and Oakland County, Michigan.

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An Interview with Kirk Brown, Illinois Department of Transportation Secretary

This is another in our series of interviews of leaders in government and industry who have a significant impact on the development and deployment of ITS in our region. Kirk Brown, Secretary of IDOT, began his career with IDOT in 1968. He has served as Secretary since 1991.

ITSMW: What kind of commitment is Illinois making to ITS and how does ITS fit into your vision for the future of transportation in Illinois?

KB: Illinois is committed to the use of computer, communications, and control technologies to enhance the performance and safety of our transportation system. Over thirty years ago, IDOT recognized the need to apply these technologies to transportation when it created the nation's first comprehensive expressway management system in northeastern Illinois.

Today IDOT's Traffic Systems Center in Oak Park, our Comm Center in Schaumburg, and our Emergency Traffic Patrol (ETP) in Chicago combine to provide state-of-the-art surveillance, communications, and response to routine and special traffic conditions on the interstate system throughout the Chicagoland area. With Governor Ryan's renewed emphasis on the application of technology across the state, I look forward to many more ITS projects at IDOT.

ITSMW: What are your expectations for how ITS will benefit the state?

KB: Illinois remains the hub of the nation's rail, aviation, and highway systems. In the future we need to use technology to build on our transportation advantages so that we can compete most effectively in the new global economy. ITS can help get the maximum performance out of our existing system and can also be used to enhance the performance of any new or reconstructed portions of our system.

IDOT has led the GCM Corridor Coalition with the Indiana DOT,

Wisconsin DOT, and many other partners, and we have made tremendous progress to develop and operate an integrated ITS system in the three-state, sixteen-county corridor which includes the six counties of northeastern Illinois. The centerpiece of this system is the

Gateway Traveler Information System. Gateway serves as a clearinghouse to collect and distribute critical transportation data to the participating agencies so that they can operate their systems most effectively.

We have only begun to see the potential offered through the GCM partnership. We are seeing the emerging private sector telematics market begin to offer products which will make the information available through the public ITS infrastructure more personal and relevant to our customers.

ITSMW:- Can you give some examples of how ITS is being used and how people in Illinois have benefited?

KB- ITS takes many forms in Illinois. Two of the most common are traffic management and traveler information. Over half the congestion that occurs on an expressway may be due to incidents - and the faster we can detect things and take an appropriate response - the faster we can return the highway to a safe and normal operation and reduce congestion. The Traffic Systems Center/Comm Center/ETP makes it possible for IDOT to manage operation of the Chicago expressway system using technologies like loops to monitor traffic and detect problems, ramp metering to control traffic flow, video cameras for surveillance and to safely operate the Kennedy reversible lanes, and the "Minutemen"

traffic patrols to assist motorists and respond to incidents.

At the same time, the ITS infrastructure can be used to gather information about traffic conditions and to relay this information to the media and public through changeable message signs, highway advisory radio, and commercial radio and television so that our customers can make better travel decisions based on real-time traffic conditions.

A similar system has been deployed in the metropolitan St. Louis area. The Gateway Guide system is used both to improve system management and operation and to provide real-time information to customers.

Another example is the extensive use of traffic signal coordination. These modern signal systems allow for improved traffic flow on our arterial network which continues to carry the majority of traffic.

On the transit side, we have worked with the RTA to evaluate transit signal priority and to deploy an automated itinerary planning system which allows transit agents or individual customers to plan transit trips from specific origins to specific destinations. Both the CTA and Pace are upgrading their bus fleets to collect real time location and condition information that they can use to more effectively operate their systems and give to their customers so they'll know when the next bus will arrive.

On the commercial side, the Department has recently completed the statewide deployment of the PrePass trucking credential check system and weigh-in-motion technology at all twenty of our interstate truck weigh stations. This ITS technology allows us to have better information and helps to assure that we don't have overweight vehicles on our interstates. It also saves the commercial vehicle industry time and money.

ITSMW: Any new ITS activities on the horizon?

KB: The largest downstate interstate reconstruction project ever undertaken by IDOT is just getting underway on I-



74 in Peoria. This will be a three year effort that will close the interstate through downtown Peoria for a short period. Here's a case where ITS - in terms of monitoring the system and the alternates, quickly identifying and responding to any problems, and providing accurate, real time information to users - will provide great benefits both during and after the reconstruction project.

And, similar to the system IDOT operates in the Chicago area, we have operated and are expanding an integrated ITS program in East St. Louis. The Gateway Guide program in the metropolitan St. Louis area includes surveillance, video, traffic patrols, and information services and is a partnership with the Missouri DOT and many other regional agencies.

All of these options are being evaluated as IDOT develops an ITS Strategic Business Plan as part of our Strategic Planning Initiative 2001. I see ITS as an important component of IDOT's scorecard which is focused on customer satisfaction and partnerships, learning and growth, best business practices, and the delivery of programs and services.

ITSMW - Will the new highway appropriation include some ITS activities?

KB: Funding is always a key issue for any program. Illinois has already expended significant dollars to develop and deploy ITS and we expect to continue to do so. In the past, we have been fortunate to request and receive federal support for some of these projects.

For example, the ADVANCE Project in northeastern Illinois was the largest federally supported operational field test. All together a total of \$31 million (\$21 federal, \$6 million state, and \$4 in private sector funds) was used to develop and test real-time, in-vehicle navigation systems that have become the forerunners of today's systems.

Over \$18 million in federal funding was available to support the three-state Gary-Chicago-Milwaukee ITS Priority Corridor - over \$9 million of this went to Illinois led projects with IDOT contributing just over \$2 million in state

funds to support corridor projects.

Just under \$2 million in federal ITS integration funds have been available in both FY 00 and FY01, matched equally by state and local government funds.

Of course, this does not match our projected needs. It is our hope that, given our demonstrated willingness to spend state dollars on ITS and to allocate a significant share of our federal transportation dollars to ITS, we will continue to get federal support for ITS projects in Illinois.

ITSMW- What are some of the barriers to deploying ITS more fully and how do you think these barriers can be overcome?

KB: First, let me say that we recognize that ITS is a tool. ITS is not a goal in itself, but ITS can be used to address real problems of congestion, safety, efficiency, cost, and productivity in the transportation sector. Of course, barriers exist - there are technical, financial, and institutional issues that need to be addressed.

From the technical side, ITS needs to go through the same type of planning and design process that we use whenever we make improvements to our transportation infrastructure. The ITS industry clearly recognized this when it called for mainstreaming ITS into the planning process, when it adopted systems engineering, and when it developed national, statewide, regional, and project architectures. IDOT is committed to these procedures to evaluate ITS so that ITS projects are deployed where they make sense.

On the financial side, you never have all the resources you need. That's true for ITS as well. But, ITS projects can often provide higher benefit/cost numbers than many other types of projects. ITS can also often be used to make other infrastructure investments work better. IDOT is committed to finding the funding for these types of ITS projects.

And on the institutional side, we need to work every day with the full range of stakeholders to make sure that they understand ITS, have the opportunity to contribute to developing effective ITS solutions, and remain open to the use of ITS to address transportation needs.

ITSMW - What roles can ITS Midwest and the GCM Corridor play to facilitate ITS deployment?

KB: Both ITS Midwest and the GCM Corridor must play pivotal roles in helping to facilitate ITS deployment. ITS Midwest needs to continue to serve as an important link between the public and private sectors.

For ITS to be successful, it must be based on public-private partnerships. This has historically been true in northeastern Illinois, for example, where the public sector has provided basic infrastructure and information about traffic conditions and has worked closely with our media partners who have the most effective means to get this information to our customers. In the future, as more and more sophisticated ITS products and services are developed, such partnerships will become even more critical. ITS Midwest needs to take its role in facilitating these partnerships even more seriously. In addition to that, ITS Midwest can play an important role in increasing awareness and understanding among all sectors about ITS - through training, forums, and information exchange.

One goal of ITS is to make travel seamless to the user. The GCM Corridor provides a means for the states of Illinois, Indiana, and Wisconsin to coordinate deployment of ITS so that intercity and regional travelers get consistent, high quality information. This is particularly important at our borders where, for example, it is desirable for IDOT and the Illinois Tollway to share information on traffic conditions on I-80, or the Bishop Ford, or the TriState with InDOT to benefit Borman travelers or vice versa. But it is also important in a more general sense to the transportation and economic health of the entire region.

The GCM Corridor coalition also makes it possible for the three states to learn from each other and to share experiences with the use of ITS. The strength of the GCM Corridor coalition is its ability to recognize the differences between the states while at the same time providing the opportunity to develop and support an integrated intelligent transportation system. □

INDOT Finds Solution to ITS Device Incompatibility

The goal to integrate ITS devices from diverse manufacturers into a cohesive application that is simple to operate and can be used from anywhere, including a mobile environment, leads INDOT to develop an integration solution with a commercial partner.

In the mid 1990s, the Indiana Department of Transportation (INDOT) aggressively began deploying a wide range of ITS devices throughout the state. Indiana's open and competitive procurement process led to the purchase of products from diverse manufacturers. As a consequence, INDOT was faced with the problem of integrating numerous components, such as changeable message signs, weather stations, detectors, and closed-circuit television cameras, each requiring different, incompatible software and communications systems.

Since the national standard (NTCIP) was still in its infancy, a solution to the problem of compatibility was not readily available. Working with Iron Mountain Systems Inc, the "ARIES™ Field Processor" was developed, which enables INDOT to control proprietary ITS resources from anywhere in the state. The ARIES™ Field Processor is comprised of standard off-the-shelf computer components: an embedded controller, solid-state hard drive, power supply, and modem. To meet Indiana's demanding weather extremes, all components are designed and tested for -40° to +85° C operation.

The ARIES™ software architecture enables vendor specific or industry standard interfaces to be integrated as they become available. This includes the implementation of NTCIP software modules as compatible devices become available. This will ensure that future devices that INDOT acquires, as well as legacy devices, can be supported using the same *operator applications*.

The ARIES™ Field Processor obtains its unique interface and processing capability through the use of discrete software

modules called "Asynchronous Processing Units", or APUs. Each APU is written to accommodate vendor specific interfaces. When required, preprocessing, scheduling, and diagnostics may be implemented with the addition of the appropriate APUs. Since the APU is the determining factor, the *operator application* is common among all types of devices. This reduces operator training, having to perform vendor specific software upgrades, and most importantly, it enables INDOT to disseminate real-time information to the public in a matter of minutes.

The field processor has been tested on devices throughout the state of Indiana. It is being used to integrate all devices used in the Borman Traffic Management System, which will be the GCM Corridor's operations center for Northwest Indiana. It is also being used in the development and deployment of components for the Indianapolis Traffic Management System. □

For more information about INDOT's field processor for component integration, please contact Troy Boyd, INDOT, (219) 939-3650, tboyd@indot.state.in.us.



NEWS & ANNOUNCEMENTS

IDOT Installs a Prototype System

IDOT installed a prototype system with Raytheon Company to test an in-vehicle warning device for railroad crossings. Advanced in-vehicle receivers were placed in approximately 300 participating vehicles (commercial, delivery, transit, municipal and school buses). These receivers provided audible and visual warnings to the driver that a train was approaching the grade crossing. The nine-month system deployment phase was completed in early December 2000. The University of Illinois at Urbana-Champaign evaluation for this project will be completed in late 2001.

ITS Architecture Developments in NW Indiana

An initial draft of an ITS architecture for the northwest portions of Indiana is nearing completion. The effort has been spearheaded by the Northwestern Indiana Regional Planning Commission (NIRPC) and has included input from public and private sector interests. Commercial vehicle operators, transit interests, municipalities, counties, and the Indiana Department of Transportation provided input through survey responses and participation in six working

sessions held at NIRPC's offices. The draft has been developed using the TURBO architecture development tool which will allow for ease in maintenance and updates as necessary. The effort paid special notice to the information dissemination planned for the GCM Corridor Gateway initiative, as well as the statewide traffic management efforts of the Indiana Department of Transportation. For further information contact Bill Brown at NIRPC.

Traffic Incident Management Workshops

Two National Highway Institute Traffic Incident Management Workshops were recently held in Will County. The November workshop was sponsored by the Will County Sheriff's Police and emphasized arterial traffic incident management. The December workshop was sponsored the Illinois State Police District 15 and focused on freeway traffic incident management. Both classes were funded by the Federal Highway Administration and supported by the GCM Corridor South West Regional Incident Management Work Group. These workshops were attended by law enforcement agency personnel, tow truck operators, and federal, state, county and local transportation officials. □

Forum

Continued from page 1

Afternoon panel discussions covered transportation operations in several jurisdictions, and telecommunications and emergency services in Wisconsin. The sessions covered a wide range of programs, from modest efforts to those costing millions of dollars.

"These important forums ensure that state and local partners continue to be a viable part of the national dialog on ITS," said Anthony. "We must continue to educate transportation system decision makers that ITS is not just a bolt-on addition to highways but an integral part of well managed and safe transportation operations. □

For more information, contact Donald Rhodes, WisDOT, (262) 548-8835, donald.rhodes@dot.stat.wi.us.

ITS MIDWEST Annual Meeting

Thursday, February 15, 2001

McCormick Place, South Building Level One, Room S104-D
Chicago, Illinois

REGISTRATION INFORMATION

Beginning this year, the ITSMW Annual Meeting will be held in February during the Chicago Auto Show.

The registration fee is \$55 for ITSMW members (\$65 if paid after 2/4/00) and \$75 for non-members (\$85 after 2/4/00). Please call Helen Echols if you need to verify membership (630-252-1617). For program information, call Claire Jonak, IDOT, (847) 705-4800, jonakcm@nt.dot.state.il.us. For registration information or to have a registration form FAXed, call Judy Benigno, 630-252-5586, jbenigno@anl.gov.

Registration fee includes continental breakfast, coffee break, lunch, and admission to the Chicago Auto Show.

No hotel arrangements have been made for this meeting. The Hyatt Regency McCormick Place Hotel (312-567-1234) is adjacent and connected to the McCormick Place Convention Center.

Corridor Program Plan Update

Development of the 2001 GCM Corridor Program Plan Update has begun. During the past several months activities have included: developing and distributing stakeholder surveys, interviewing key agency personnel, performing an inventory of ITS activities and architectures within the corridor, and developing a regional ITS architecture.

One objective of the update is to refine the scope of future GCM corridor activities. GCM Corridor working groups and committees have determined that the future efforts of the GCM Corridor Coalition should be focused upon corridor-wide and multi-state initiatives.

With this focus in mind, surveys have been developed and distributed to selected agencies throughout the corridor. The survey solicits input on program direction, challenges, new project/program ideas, funding ideas, and project priorities. In addition, more in depth interviews have been conducted in Wisconsin, Illinois and Indiana with selected key agencies. When completed, the survey and interviews will provide a thorough assessment of ITS initiatives within the corridor.

An inventory of ITS architecture efforts within the GCM Corridor is being conducted concurrently with the agency surveys and interviews. Based on the

information gathered through the inventory and the agency interviews, a regional architecture will be developed. This architecture will identify and illustrate the interfaces among sub-regional architectures within each state. The strategy for architecture development calls for mapping the existing systems using the National Architecture Framework. □

For more information, contact Jeff Benson, URS/BRW, at (612) 373-6444 or jeff_benson@urscorp.com.



Calendar of Events

ITS Midwest Annual Meeting, February 15, 2001, Chicago Auto Show, McCormick Place, Chicago. Contact: Judy Benigno, (630) 252-5586, jbenigno@anl.gov.

ITS America 11th Annual Meeting, June 4-7, 2001, Miami, Florida. Contact Rachel Romine, 202-484-2907, www.itsa.org.

8th World Congress on ITS, September 30 through October 4, 2001, Sydney, Australia. Contact: Kip Stacy-Protts, 202-484-4542, kstacy@itsa.org, www.itsa.org/worldcongress.

9th World Congress on ITS, October 14 - 18, 2002, McCormick Place, Chicago. For info: www.itsa.org/worldcongress

Membership

Membership in ITS Midwest is open to corporations, companies, government agencies, universities, and other organizations with an interest in ITS development and deployment. Members of ITS America are entitled to up to three free chapter memberships, based on their ITS America dues.

Members paying \$15,000 in dues to ITS America get three chapter memberships, those paying \$5,000 to \$10,000 get two memberships, and those paying between \$500 and \$3,000 receive one membership. A qualifying organization which is not a member of ITS America may join the ITS Midwest chapter for \$245. Organizations belonging to ITS America which have used up their complimentary chapter memberships may also join for \$245.

Chapters like ITS Midwest play a key role of outreach, education, and support for ITS technical and planning activities. ITS Midwest also provides a forum for planning and support of the GCM Priority Corridor. **Join ITS Midwest today and play a role in shaping our future transportation systems!**

ITS Midwest Members:

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Wisconsin DOT

For further information about joining and the benefits of membership in ITS Midwest, please contact Philip DeCabooter, membership chair, at (608) 267-0452. □

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How to reach us...

Please address all publication inquiries, comments, suggestions, and contributions to: *Express Lanes* Editor, ITS Midwest, c/o Argonne National Laboratory, 9700 S. Cass Avenue, ITS/208, Argonne, IL 60439. *Express Lanes* may also be reached at:

- u Telephone: 630-252-1617
- u FAX: 630-252-4500
- u email: ITSnews@anl.gov

Express Lanes is the newsletter of the Intelligent Transportation Society of the Midwest and the GCM Corridor Coalition.

Contributions of general interest to our readers are encouraged, including news from members, upcoming events, articles on technology/research and

deployment projects, and other ITS-related information.

For further information on GCM corridor activities, contact your local DOT representative or the BRW consulting team.

GCM Corridor C-TIC Home Page:
<http://www.gcm.travelinfo.org>

Illinois DOT

David Zavattero 847/705-4800
Chuck Sikaras 847/705-4800

Indiana DOT

Mark Newland 317/232-5523

Wisconsin DOT

Phil DeCabooter 608/267-0452

URS/BRW

Jeff Benson 612/373-6444
Daryl Taavola 612/373-6529

ITS MIDWEST

c/o Argonne National Laboratory
9700 S. Cass Ave., B208
Argonne, IL 60439

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