



ITS STRATEGIC PLAN SUMMARY AND UPDATE

Published on September 4, 2004, the objective of the ITS Strategic Plan is to provide both high-level visionary guidance and practical proactive direction for the Michigan Department of Transportation as it plans, develops and implements Intelligent Transportation Systems. The final goal is for MDOT, by working with collaborative partners to identify and deploy appropriate ITS applications and strategies, to become a nationally-recognized leader in leveraging ITS technologies that maximize the safety and efficiency of the transportation system for the ultimate benefit of all stakeholders.

The plan includes MDOT's ITS Mission, Vision, Values, and the goals and strategies for fulfilling them. Both long and short term recommendations were made toward positioning the state as an ITS leader by leveraging the exciting new possibilities stimulated by advanced technological developments already occurring in the ITS arena. The seven MDOT ITS strategic goals are:

1. Develop a performance measure process for ITS programs, projects and processes.
2. Establish a consistent relationship with external and internal ITS partners by July 2004
3. Implement VII testbed by July 2005
4. Educate and increase awareness and understanding of ITS consistently throughout MDOT
5. Provide a consistent ITS framework/foundation statewide (i.e. freeway to non-freeway, highway to multi-modal, urban to rural, MDOT to non-MDOT
6. Establish a statewide ITS Office by October 4, 2004.
7. Fully integrate ITS Program into the approval process.

Since the publication of the ITS Strategic Plan, some activities

have been completed, others have changed and new ones are find their way into the overall ITS strategy as technology continuously improves and customer needs change. As a result, goals, needs, and measures of success have changed. MDOT ITS Steering Committee will be updating the ITS Strategic Plan to reflect the current state-of-the-art technology and to take a look ahead into the next five years to anticipate how the landscape of ITS in Michigan will progress. While our main focus to achieve our ITS mission will remain the same, customer needs, goals, and activities may look different. Achieving the conditions set forth by the Mission Statement and supported by activities cannot be done in a single effort, but will require a series of smaller, incremental steps. Goals will be refined and supporting activities along with measures of success will be identified to determine fit and alignment with both goals and customer needs.

In the end, the MDOT's ITS Strategic Plan will continue to capture the vision, mission, needs, goals, activities, and measures of success that will guide a coordinated, efficient, safe, and integrated vehicle-infrastructure system throughout the state for the next five years. The updated plan will initiate a course of action toward establishing the required public- and private-sector partnership that will ensure leadership, innovation, and progress across Michigan. The plan will include partnering with key organizations and providing leadership, statewide and nationally, to research, develop, and deploy ITS.

To view the complete MDOT ITS Strategic Plan and to learn more about ITS activities in Michigan, go to http://www.michigan.gov/documents/MDOT_ITS_Strategic_Plan_145436_7.pdf For more information contact Steven J. Cook, P.E., MDOT, Operations Engineer, 517-322-5709, cooksj@michigan.gov.

MDOT's ITS Mission:

"To develop and sustain a program at MDOT to improve transportation system safety and operational performance using existing and innovative Intelligent Transportation System technologies for economic benefit and improved quality of life."

MDOT ITS TEST LAB UNDER CONSTRUCTION IN LANSING



Close-up of the work area.

reliability, and interoperability will be beneficial when deciding what make and model of equipment to purchase. Testing will also provide the knowledge needed to utilize equipment to its greatest potential once deployed.

The initial task of the lab is to build the infrastructure and information base needed to perform adequate testing of ITS products. This includes renovation of lab space, and purchasing equipment needed for testing and deployment of field infrastructure for



Collin Castle and Rick Kramer from MDIT in the main testing area. Soon more equipment will arrive that will enable TMC's in the state to send information to the lab.

testing. Key information includes the knowledge of MDOT, MDIT and consultants, and researching and developing the proper layout of lab equipment infrastructure and testing procedures. Education and training opportunities for the lab staff will also be needed to support the application of test procedures.

ITS equipment tested in the laboratory will include equipment purchased by MDOT and equipment loaned to the department in a unique partnership. A Request for Information (RFI), advertised on the MDOT website, gives vendors the opportunity to supply the lab with their choice of ITS-related equipment for a specified length of time. During this time frame, the loaned equipment will be tested and evaluated. Upon completion of the testing, the equipment will be returned to the vendor and results will be published. This process will not only allow MDOT to gather hands-on experience with equipment functionality, but also provides an opportunity for vendors to showcase their products to the ITS community.



Additional computer work-space and camera controls with recording capabilities.

Lab equipment testing processes will be performed with the goal of providing guidelines when purchasing equipment for MDOT ITS projects. Tests will include evaluation of the interoperability of MPEG-4 video compression devices, technologies for wireless data and video transmission, and non-intrusive traffic detectors for accuracy in speed, volume and occupancy as well as the integration CCTV cameras. The lab will also serve as a space for vendors to demonstrate new ITS technologies. Ultimately, a list of qualified or approved products will be compiled to specify what products have met MDOT requirements after testing.

For more information, contact Collin Castle, MDOT ITS Staff Engineer, castlec@michigan.gov.

A MESSAGE FROM THE PROGRAM MANAGER

Thank you for taking a look at the first issue of the ITS News from the MDOT ITS Program Office. This newsletter will be used to keep ITS professionals across the state and country updated with news and events related to Intelligent Transportation Systems in the state of Michigan. Questions, comments and suggestions can be directed to Greg Krueger at KruegerG@michigan.gov.

ITS NEWS BY REGION

Bay Region ITS Projects

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In design or study:

- To date all of the Bay Region's ITS development has been focused in the Flint area. HNTB is currently under contract with the Davison TSC to develop an implementation plan for Genesee County ITS and prepare the associated design.
- The Bay Region ITS Architecture (for all 13 counties in the region) is being currently being developed by Kimley-Horn and Associates, Inc. On August 3, 2007, there is a scheduled Deployment Plan Workshop to review the status of the architecture development; provide an overview of the ITS projects identified in the architecture; review the cost/benefit of the projects; and develop a deployment timeframe (5, 10, or 20 years) for each project.

Future ITS Projects:

- In 2008, the Bay Region intends to hire a consultant for Region-wide ITS design of the implementation of region-wide Architecture's project deployment plan. As part of this design, some particular locations have been identified for future ITS projects (traffic surveillance, permanent DMS boards).
- Another area of proposed additional study and design includes region-wide Road Weather Information System (RWIS) Study to identify optimal locations and communication protocols for RWIS in Bay Region; and design.

Grand Region ITS Projects

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In design or study:

- Microwave vehicle detection system for Grand Rapids metro area. This project will install a freeway vehicle detection system on US-131 from 36th St. to West River Drive, on I-196 from Market Ave. to I-96, and on I-96 from I-196 to M-21. Real-time vehicle speed, volume, and classification information will be transmitted to the West Michigan TMC for control room use. The system will allow travel times to be generated for posting on existing dynamic message signs. The field infrastructure project is scheduled for a September 2007 letting. A separate contract will be bid for the software and integration work for the system.
- Region ITS communications study. This project will develop a system communications plan for ITS in the Grand Region. The purpose is to review the existing infrastructure within

the Region and, taking into account the regional architecture, provide a framework plan for communication paths for future ITS infrastructure deployment. Project is scheduled for a March 2008 completion.

- ITS device repair and enhancement project. Project work will include needed repairs on existing dynamic message signs (DMS) on US-131, and the addition of 1-2 DMS and 6-8 traffic cameras within the Grand Rapids area ITS system. Project is scheduled for an April 2008 letting.

Upcoming ITS projects:

- Grand Rapids area system expansion project. Funded by an ITS earmark in SAFETEA-LU, granted to the Grand Valley Metro Council (GVMC) area, this multi-jurisdictional project will provide for a major expansion of the ITS network within the greater Grand Rapids metropolitan area. Work will include fiber optic communications infrastructure, dynamic message boards, traffic cameras, and vehicle detection on state and local routes, continuing the implementation of the Grand Rapids Metropolitan Area ITS Strategic Deployment Plan. Design is scheduled to start this fall for a project letting in early 2009.
- Traffic management improvements for the US-31 bascule bridge in Grand Haven. This project will provide traffic incident management tools for detection, traveler information, and alternate routing for the Grand Haven bridge on US-31. Project is scheduled for a fall 2008 letting.
- Statewide RWIS and TMC study. The Grand Region portion of this statewide study involves developing a deployment strategy and plan for future RWIS stations for the region.

Metro Region ITS Projects

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Under construction:

- I-94 ITS Expansion between I-96 and Beech-Daly. The expansion of ITS field infrastructure for 12.5 miles along I-94 will provide MDOT with expanded capabilities to detect and view traffic congestion, and provide communications infrastructure capacity long into the future. This includes 96 strands of fiber-optic cable for length of project, 15 new or replaced CCTV cameras, 6 replaced DMS, Microwave detectors and Ethernet communications system and associated hub modification.

- I-696 VII testbed. The testbed will provide mobile broadband connectivity between equipped vehicles and the internet as well as data connectivity between traffic control signals. A Dedicated Short Range Communications (DSRC) environment will also be established. This project is part of an ongoing effort to deploy a fully functional and continuous Vehicle Infrastructure Integration (VII) test bed envisioned in the region.

- Metro Region ITS Design and System Management. The design for this project includes a wireless ITS system for I-96, I-94, and I-69 in Oakland, Macomb, and Wayne Counties and the city of Port Huron. The project will include closed circuit television (CCTV) cameras, changeable message signs, vehicle detectors, towers, and wireless links to extend coverage over 75 miles of interstate freeway including the approaches to the Bluewater Bridge in Port Huron. Also planned is a VII test bed at 9 Mile Road.

In design or study:

- Digital Microwave Communications Design. The upgrade to digital microwave equipment will improve the bandwidth and reliability of some of the most critical links in the MITSC communications infrastructure. This includes communications bandwidth analysis, based on future needs, line-of-sight field review of communications path microwave tower structural calculations and digital microwave back-haul communications design at 6 locations.

- I-96 Michigan ITS Infrastructure Upgrade. Construction will be underway this fall for an equipment infrastructure upgrade that will allow MDOT to monitor a 30-mile stretch of interstate. This project begins near the Ambassador Bridge in Detroit and runs west to I-96/I-275 and north along I-96/I-275 to the I-96/I-275/I-696/M-5 interchange. Along this corridor the upgrades include a wireless network of Closed Circuit Television (CCTV) cameras, Dynamic Message Signs (DMS), and vehicle detectors.

Future ITS Projects:

- MDOT has released an RFP for design services for I-94 from Moross (near Detroit) to the Wayne/Washtenaw County line. This will be an upgrade of ITS equipment along the corridor, including CCTV, vehicle detection, and DMS.

North Region ITS Projects

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In construction:

- Freeway Dynamic Message Signs are currently under construction on both Northbound and Southbound I-75 south of the City of Grayling, in Crawford County, under JN 86806A.



DMS foundation being installed on southbound I-75 in Crawford County. photograph by Steve Zaglaniczny, July 12, 2007

In design or study:

- Kimley-Horn has been working on both the ITS Architecture and ITS Deployment Plan for the North Region under EPE JN 87106. The Deployment Plan Workshop is scheduled for Wednesday, July 18, and a Comment Resolution Workshop is planned for this fall. Both documents will be complete in the spring of 2008.

- Kimley-Horn has been selected to develop a Concept of Operations for a North Region Traffic Management Center, a Grand Traverse County Traffic Management Center, and to perform an EPE location study for a North Region RWIS network under JN 88065.

- Parsons Brinkerhoff has been selected to design 20 RWIS and 5 DMS for North and Superior regions under JN 89876. Consultant will prepare 3 separate packages to be let. The three packages have tentative completion dates of May 1, 2008, December 8, 2008, and March 8, 2009. Design work under this contract is to conclude by July 1, 2009. DMS foundation being installed on southbound I-75 in Crawford County.

Southwest Region ITS Projects

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In design or study:

- ITS Architecture and Deployment Study. This project will provide a framework for ITS deployment in the Southwest Region and in Jackson and Shiawassee County. The project will focus on I-94 due to commercial traffic and international trade including overnight truck parking along I-94. Completion is scheduled for December 2007.

Superior Region ITS Projects

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Recently completed:

- URS has completed the RWIS-ESS Concept of Operations and Special Provision under JN 87648.

In design or study:

- Field test location was placed on M-28 near Deerton during the winter of 2007. Field test location will be relocated to US-2/US-41/M-35 north of Escanaba. Data was not available to analyze from the Deerton site.
- Kimley-Horn has been working on the ITS Architecture deployment strategy under JN 82654.
- Kimley-Horn has been selected to develop the "Concept of Operations" for a Traffic Management Center under JN 88065.

Upcoming ITS projects:

- Let construction contract by June 2008 for installation of 6 RWIS stations and 5 DMS signs.
- Install a bridge anti-icing system on the Escanaba River Bridge reconstruction in 2009.

University Region ITS Projects

Stephanie Aldighieri

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In design or study:

- A contract has recently been awarded to HNTB to study the I-96 corridor from the Livingston/Oakland County line through Lansing. Conceptual planning of ITS along corridor will focus on the coordination with construction activities from the County line to Brighton, including the monitoring of workzones.

ITS DESIGN IN GENESEE COUNTY

Genesee County is excited to launch its first ITS project, which is underway in the Bay Region. The project includes installation of ITS devices along 28 miles of freeway. This will include DMS, CCTV cameras, vehicle detection, RWIS and ITS communications and network infrastructure.

The most notable feature of this work will be the remote ITS access and control. The ITS systems in this project will function without a physical TMC; all functions will be web-based, with the central server linked to a secure website. This will permit authorized personnel to log in and perform ITS functions from a remote location. It will also allow operators at other TMC's such as the MITS Center to receive information and operate the system as needed. The system will be semi-automated -- designed to trigger

alarms as an incident occurs, prompting the designated controller to log in, inspect the situation, and react accordingly. CCTV and sign controls will be accessed online, allowing the operator to view an incident, and then post appropriate messages to DMS in the area.

This use of a web-based control will be a first in Michigan, and will be a considerable cost saver to the region and the state, as the information can be accessed from any computer; eliminating the need to design and build a physical center to house the information. The selected design consultant, HNTB, will hold the kick off meeting July 26 at the Davison TSC. For more information, contact Jacqueline Pethers, Cost and Schedule Engineer, pethersj@michigan.gov



MDOT TO LAUNCH PROGRAM OFFICE WEBSITE

The MDOT ITS Program Office is preparing to launch its website. The Program Office staff will develop MDOT's ITS website. The site will inform MDOT, the Consultant pool, ITS product vendors and the public on all news and events related to ITS in Michigan, the nation and the world. The website will also serve as a dissemination port for review of draft Special Provisions for MDOT, Consultant pool and vendors. Project reports and updates will appear on the site as well. Check out the site at: www.michiganits.com.



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