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MICHIGAN
DEPARTMENT OF
TRANSPORTATION



INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Program and Projects

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INTERNET INFORMATION

MDOT Homepage	http://www.mdot.state.mi.us
Detroit Real Time Traffic Information .	 http://campus.merit.net/mdot

FOREWORD

This is a brief outline of the current projects and programs related to the Intelligent Transportation Systems (ITS) initiatives, formerly known as Intelligent Vehicle Highway Systems (IVHS), being planned, developed, or implemented by the Michigan Department of Transportation (MDOT).

Several of these projects are funded by the Federal Highway Administration, MDOT, private industry partners such as General Motors, Ford, Chrysler, GE/Ericsson, AAA of Michigan, and Ameritech, and academic partners such as the ITS Research Center of Excellence, University of Michigan at Ann Arbor.

Further information can be obtained by contacting the Transportation Systems Section, at (517) 373-2247.

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I. FIELD OPERATIONAL TESTS

The Michigan Department of Transportation (MDOT) is the program administration agency for DIRECT and an active participant in Advantage CVO, U.S./Canada International Border Crossing, FAST-TRAC, and Intelligent Cruise Control Operational Field Tests.

A. DIRECT (Driver Information Radio using Experimental Communication Technologies)

The DIRECT (Driver Information Radio using Experimental Communication Technologies) Project is a federally sponsored operational field test of innovative means to deliver voice traffic congestion advisories to motorists. The basic thrust of DIRECT, as opposed to the many other operational field tests, is to implement and test pinpoint message delivery methods that are of modest incremental cost to the motorist. Many projects are looking at high-cost, high-technology solutions, to what may be a rather low-cost, low-technology problem. The four communication methods deployed in this project are:

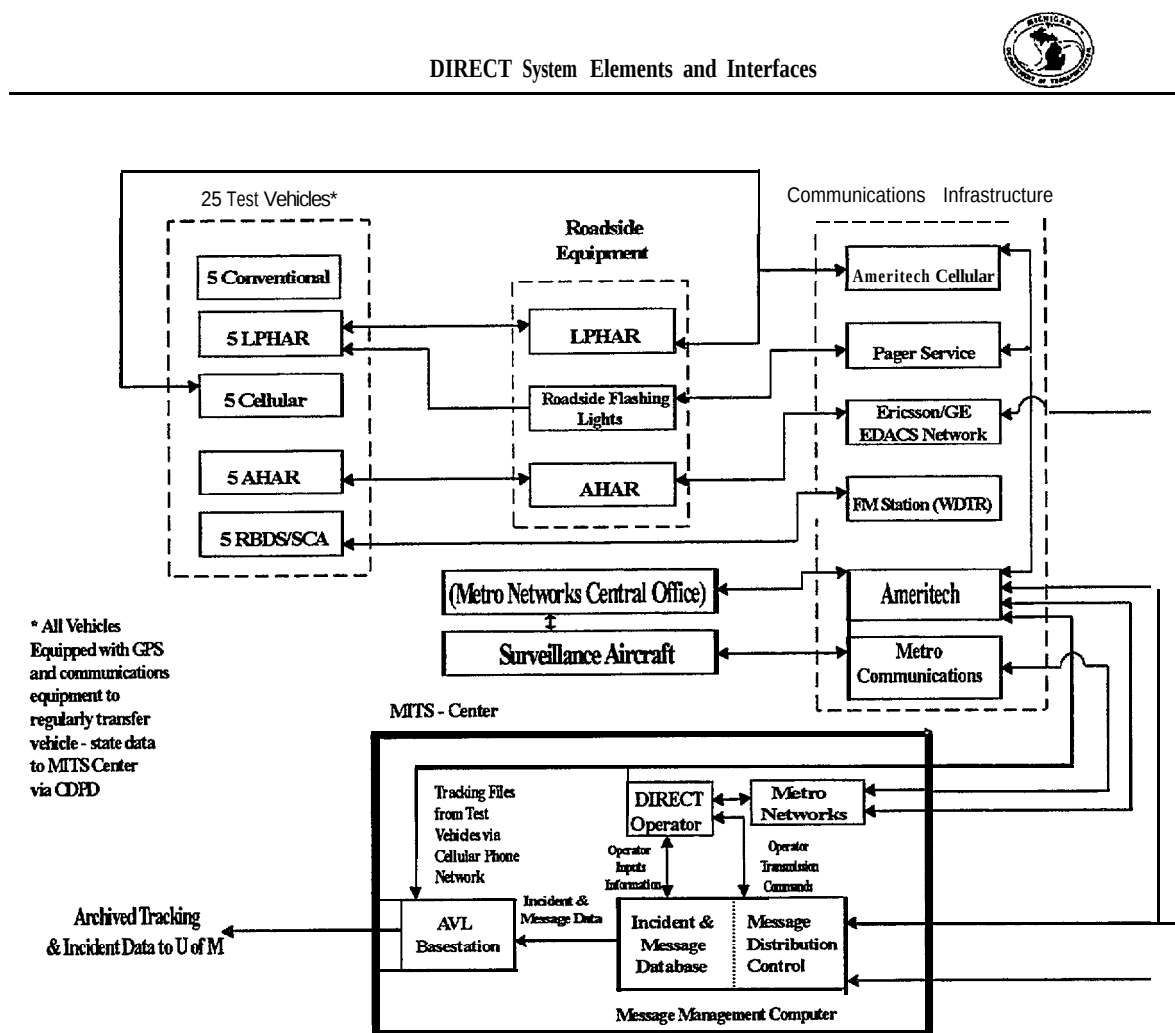
- 1) Low Power Highway Advisory Radio (LP HAR): This is a low power, under 10 Watts, standard AM broadcast band transmitter with a planned reception range of 1.5 to 2.0 miles (2.5 to 3.2 kilometers).
- 2) Automatic Highway Advisory Radio (AHAR): This method is similar to LP HAR in the location and range of transmitters, but differs in that reception of the messages is handled automatically by a special radio receiver located in the vehicle.
- 3) Radio Broadcast Data Service/Subsidiary Communication Authorization (RBDS/SCA): This system uses two sub-carriers on the WDTR-FM radio signal. The RBDS digital subcarrier controls the automatic pass through of the audio on the SCA subcarrier. This method is similar to AHAR, except the messages are for the entire region, not just the immediate vicinity of a transmitter.
- 4) Cellular Call Server (CCS): This is an electronic message distribution center where traffic advisory messages are stored for retrieval by motorists equipped with cellular telephones. This method, unlike the others, provides a message indicating "there are no known incidents at this time" if there are no known incidents. The others only transmit if there is an incident. The goal is to minimize disruption of the motorists entertainment listening by messages of little or no interest to the motorist.

The actual operational field test began in April 1996 after the department installed seven LP HAR transmitters, seven AHAR transmitters, the RBDS/SCA encoders at WDTR-FM, a cellular call server, and vehicle tracking units in the 27 test vehicles. A contract with ERIM of Ann Arbor provides for central message distribution and control computer program. This program, believed to be unique in the ITS world, provides the ability to record voice messages and an accompanying text message, designates which transmitter or method to send the message, and enters the proper control codes and message for each method. When a message is no longer pertinent, the system will remove the message upon command.

Information from the vehicle tracking units provides the latitude and longitude of each vehicle every five seconds during the morning and evening commute periods. The University of Michigan is conducting the

evaluation of this project. The main evaluation tool is the vehicle tracking data combined with the message database from the central message distribution and control computer. This provides the ability to follow motorists before and after they receive a traffic advisory message. This is a more accurate and less intrusive method of collecting this data than requiring manually maintained travel logs. Along with this geographical information, the equipment also sends back the current radio station to which the motorist is listening. This provides the ability to ascertain whether they are receiving getting information from other sources.

The experiment is scheduled to continue through December 1997. The results of the U of M evaluation should be available in early 1998.



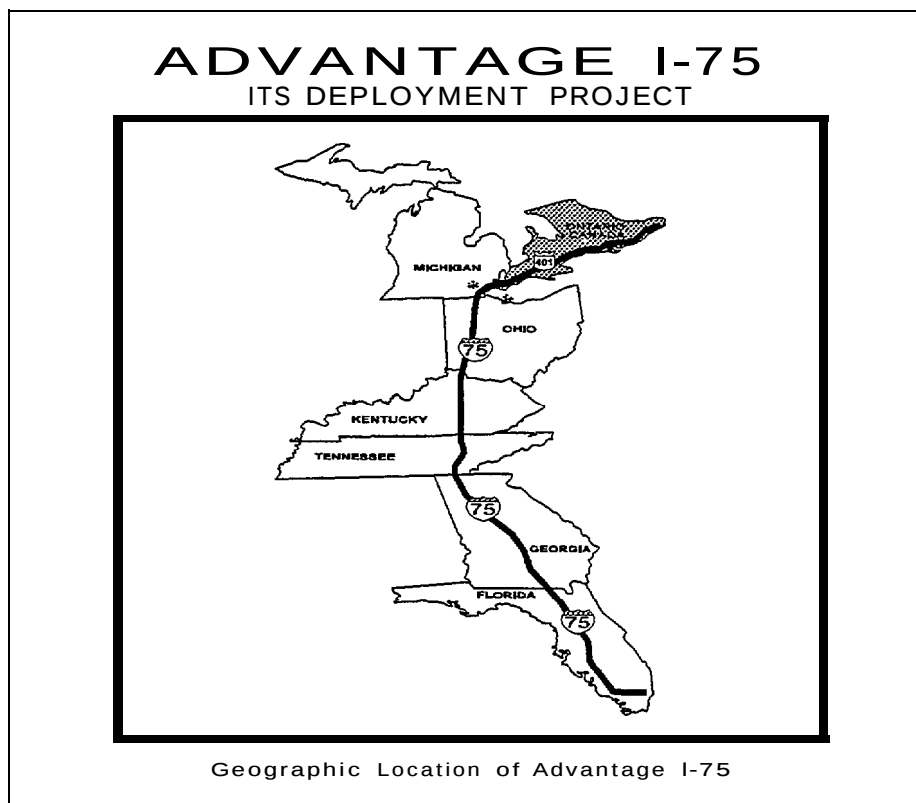
B. ADVANTAGE CVO

Advantage CVO, formerly Advantage I-75, is a commercial vehicle operation (CVO) project that uses ITS technology to expedite clearance and movement of commercial vehicles across state lines between Ontario, Michigan Ohio, Kentucky, Tennessee, Georgia, and Florida. This project improves the efficiency of motor-carrier operations by allowing properly documented, transponder-equipped trucks to travel any segment of I-75 and Highway 401 in Canada, with minimal stopping at weigh stations. The in-vehicle transponders communicate to the driver the results of the compliance check, which may allow for authorized by-pass of the weigh station.

In-vehicle transponders have been designed and are being allocated to participating major carriers. Mainline weigh-in-motion (WIM) has been installed in several states including Michigan at the Erie weigh station on I-75 south of Detroit where fiber optic communications have been used. For the overall project SAIC is the system integrator and Hughes Aircraft Company is the vendor for the transponders.

Installation and testing was completed at the Erie weigh station in December 1995. Currently, there are 103 companies participating nationwide, with over 4300 transponders equipped in trucks. At the Erie weigh station, from February through March of this year, 33 11 vehicles were processed with 2245 receiving green lights (68 percent). This percentage is higher than the total system average. Evaluation of the operational test is being conducted by the University of Iowa and is estimated for completion in two years.

*Michigan
locations
NBD and SBD



C. U.S. - CANADA INTERNATIONAL BORDER CROSSINGS

This is a joint project between the United States and Canada to provide a transparent, seamless border for expeditious crossing of people and goods by application of ITS technologies. A state/province team including Michigan, Ontario and New York was established to conduct the functional requirements for the three Detroit area and four Niagara River area international border crossings. Demonstrating automated non-stop border crossings requires the use of in-vehicle units communicating via radio frequency with strategically located antennas placed near toll, customs, immigration, and transportation safety facilities. This project will promote the basis for additional ITS initiatives to be integrated at future sites for international border crossings.

The institutional issues study and the preliminary engineering and design has been completed. The deployment phase is currently in progress with an accepted test scheduled for June 1997. Sites for deployment are at the Ambassador Bridge in Detroit and the Peace Bridge at the Niagara River crossing. The Custom's NAFTA Prototype (NATAP) is being integrated at both sites by separate contractors. Evaluation of the operational field test will include NATAP evaluation for the Ambassador Bridge site. A Request for Proposal for evaluation at the Ambassador Bridge site is currently in progress with completion anticipated in early summer 1997.

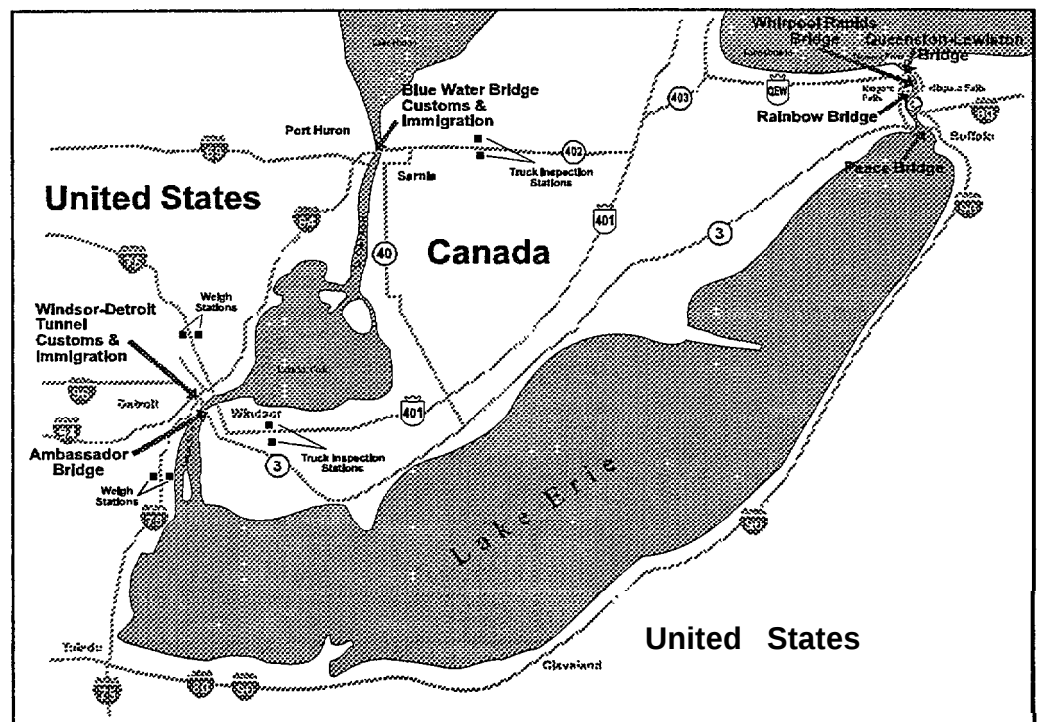
Project participants include MDOT, the Ministry of Transportation of Ontario, New York Department of Transportation, FHWA, the Ambassador Bridge and Detroit-Windsor Tunnel in Detroit, the Blue Water Bridge in Port Huron-Sarnia, U.S. Immigration and Naturalization Service, customs officials from both countries, the Peace Bridge and New York Thruway Authority, customs brokers, and trucking organizations.

MICHIGAN

- Blue Water Bridge
- Ambassador Bridge
- Detroit-Windsor Tunnel

NEW YORK

- Rainbow Bridge
- Whirlpool Rapids Bridge
- Peace Bridge
- Queenston-Lewiston



D. FAST-TRAC

FAST-TRAC (Faster And Safer Travel through Traffic Routing & Advanced Controls) is administered by the Road Commission for Oakland County. It has completed its first phase of implementation and is well along into the second phase. Approximately three hundred intersections are equipped with SCATS (a system that monitors traffic flow and adjusts signal timing in response to the changes in traffic), and Autoscope, machine-vision vehicle detectors. Work has begun on the design and installation of SCATS at 50 new intersections. Ali-Scout roadside beacons were also installed at 100 locations throughout Southeast Oakland County. The beacons communicated with 400 vehicles equipped with the Ah-Scout dynamic route guidance system. The field testing of the Ah-Scout system has been completed and the results are being compiled.

The FAST-TRAC transportation information management system will include interfaces with Ah-Scout, SCATS, Autoscope, SMART, and MDOT. Both video and traffic data will be shared by the new FAST-TRAC Traffic and Operations Center in Waterford and MDOT's MITS Center in Detroit, thereby facilitating integrated corridor traffic management in metropolitan Detroit.

E. INTELLIGENT CRUISE CONTROL

Intelligent Cruise Control (ICC) is being conducted through a Cooperative Agreement between the National Highway Traffic Safety Administration and the University of Michigan (U of M). In addition to U of M, partners include Leica AG, the Michigan Department of Transportation, and Haugen Associates. The Volpe National Transportation Systems Center will serve as the independent evaluator of the results.

The ICC system automatically controls the headway between an equipped vehicle and the vehicle ahead, whenever the preset cruise speed causes overtaking to occur. When the headway constraint no longer exists, the equipped vehicle accelerates again back up to its set speed. The tested system will provide for driver selection of the desired minimum headway time and will automatically control headway by means of a throttle control.

Each of the ten Chrysler Concorde passenger cars equipped with ICC (based upon the Leica infrared sensor) is placed in the hands of lay persons for use as their personal vehicle for a period of 2 to 5 weeks. Approximately 180 participants are expected. The test period is from July 1996 to September 1997.

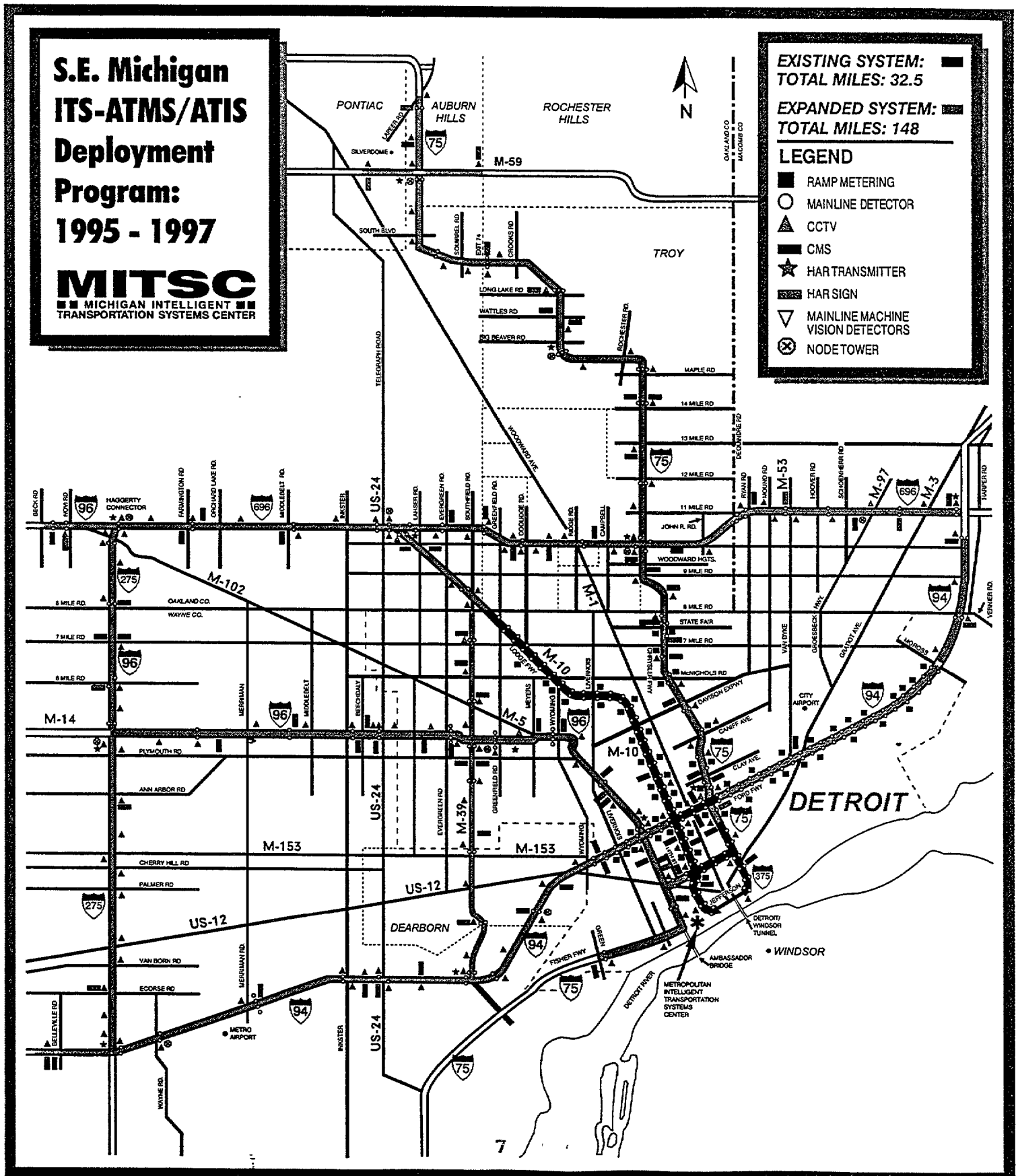
2. *ATMS/ATIS DEPLOYMENT IN METROPOLITAN DETROIT*

The current system of traffic surveillance in the city of Detroit consists of 32 miles of freeways involving segments of I-94, M-10, I-75, and I-375. The current system includes 24 CCTV cameras, 14 changeable message signs, 49 ramp meters, and 1,240 inductive vehicle detectors. An expansion is underway of the advanced traffic management systems/advanced traveler information systems (ATMS/ATIS) to cover an additional 148 miles of the freeway system in metropolitan Detroit. The plan includes installation of 145 CCTV cameras, 43 changeable message signs (CMS), 10 ramp meters, 12 highway advisory radio (HAR) transmitters, machine vision detection on I-75 in Troy, and approximately 1100 loop sensors.

Rockwell International is designing and building the deployment which includes freeway corridors in the City of Detroit, and Wayne, Oakland, and Macomb Counties, including portions of I-75, I-696, I-94, I-96, I-275, M-39, M-10 and M-59. Integration of Oakland County's FAST-TRAC traffic operations center in Troy with the MITS Center in Detroit is also included in this phase of expansion, thus making it one of the only areas in the country to link urban and suburban traffic monitoring systems. The Michigan State Police 911 dispatch unit relocated to the MITS center in April 1997.

The Detroit ATMS/ATIS project is estimated to cost \$33 million and is expected to be completed by Fall 1997. Construction work and software integration is in progress at this time.

Deployment of Intelligent Transportation Infrastructure in Michigan



3. *ATMS/ATIS EARLY DEPLOYMENT STUDY FOR METROPOLITAN GRAND RAPIDS*

Grand Rapids, the second largest metropolitan area in Michigan, has a freeway system with locations that experience recurring as well as nonrecurring congestion throughout the downtown area. In an effort to effectuate a solution, ITS applications are being considered for incorporation into the Grand Rapids Strategic Deployment Plan. HNTB Corporation in association with TRW, Inc. and Ed Swanson & Associates completed an ATMS/ATIS early deployment study for metropolitan Grand Rapids. The study focused on the freeway, the arterial, and transit systems.

The study was administered by the Michigan Department of Transportation. A project advisory committee, which included representatives from MDOT, FHWA, the Grand Rapids and Environs Transportation Study, Michigan State Police, City of Grand Rapids, area county representatives, and the Grand Rapids Area Transportation Authority, have provided critical input throughout the study. The study has been completed and funding alternatives are being considered for possible implementation.

4. *GRAPHIC DISPLAY SYSTEM FOR REAL TIME TRAFFIC INFORMATION*

This project applies ITS technology to communicate real-time traffic information by a graphic display of the congestion levels on freeways in Southeast Michigan through the use of a World Wide Web page. The display is color coded: green for normal traffic flow, red for heavy congestion, etc. The project also provides the graphic display system at the dispatch centers of five public transit agencies and fleet owners.

The Graphic Display System is accessible on the Internet at: <http://campus.merit.net/mdot>

5. *APTS (ADVANCED PUBLIC TRANSPORTATION SYSTEMS): ANN ARBOR SMART BUS*

This project will support the Ann Arbor Transportation Authority's operational test of the "smart bus" concept. Included are an on-board bus communications and navigation system, a central control system and a cashless paymentsystem. The on-board system will monitor actual performance in regard to route, schedule and location. It will allow control of on-board electrical equipment such as destination signs, electronic engine controls, enunciators and fare collection systems. The on-board system will also enable the buses to interact with traffic signal controllers and to communicate with the central control system. The central control system will integrate the data from the bus fleet for coordinated supervision and will also provide real-time transit information to the public. The cashless payment system will test radio frequency proximity cards as an inter-modal payment method.

The project is funded by a \$1.5 million Federal Transit Administration (FTA) capital grant. The operational test will be evaluated by the University of Michigan and the Volpe National Transportation Systems Center. Rockwell has begun work as the prime contractor. Portions of the system have been installed and are operational.

6. *APTS: SUBURBAN MOBILITY AUTHORITY FOR REGIONAL TRANSPORTATION (SMART)*

The Federal Highway Administration and the Federal Transit Administration have approved a expenditures of \$16 million to set up APTS programs and purchase computer hardware and software in order to coordinate

services using ITS and automated dispatch. The programs are administered by the Suburban Mobility Authority for Regional Transportation (SMART) for several counties including Macomb, Oakland, and Wayne.

Dispatch Systems - Automate functions of reservation, scheduling, etc.

AVL System - Place hardware and software aboard SMART buses to track the fleet.

Dispatch/AVL - Budget funds for affiliated agencies.

Regional 800 Number - 800 number to refer potential customers and interface into the SMART dispatch.

Data Collection Systems - Development activities to collect and report on available data

Traveler Information Systems - Timely information available to SMART travelers. The system is proposed to cover Oakland, Macomb, and Wayne counties. Any further information can be obtained from Beth Gibbons, (810) 335-0768.

7. APTS: HIGH SPEED POSITIVE TRAIN CONTROL SYSTEM

The high speed passenger rail initiative focuses on implementing a control system that upgrades the safety rail traffic operations. The safety system termed “High Speed Positive Train Control” System is currently being integrated into the AMTRAK passenger trains along the Detroit-to-Chicago high speed rail corridor. Initial implementation will begin with 70 miles of track from Kalamazoo to Niles, Michigan. The HSPTC system, through state-of-the-art train-to-wayside communication, will automatically control headway between trains traveling on the same track. This allows trains to operate at speeds up to 125 mph. This effort demonstrates Michigan’s commitment to enhancing intermodal travel and developing public transportation in its entirety.

The funding partners for this project are the Federal Rail Administrations (FRA), MDOT, AMTRAK, and Harmon Industries. This demonstration project for the 70 mile section has a total budget of \$22 million (of which \$6 million was awarded on an FRA grant to Michigan) and has a scheduled completion by late 1998.

8. STATEWIDE INCIDENT MANAGEMENT EFFORTS

The Metropolitan Detroit Incident Management Coordinating Committee, with representatives from MDOT, FHWA, Wayne, Oakland and Macomb County Road Commissions, City of Detroit, AAA of Michigan, Michigan State Police, and others meet at the MITS Center once a month to discuss incident management issues. Several task forces developed an incident management plan for Detroit entitled, “Blueprint for Action,” published in October 1993. An updated version of the report was prepared in 1995. The Education and Data subcommittee are working to generate information to assist with the incident management efforts.

The relocation of the Michigan State Police Second Regional Dispatch Center to the MITSC in April 1997 will assist in incident management by providing 24 hour, seven days per week staffing of the traffic control room with fourteen officers present on each shift. There is also a 48 hour policy being proposed by the legislature which would allow for the removal of vehicles abandoned on the highway for over 48 hours.

9. MICHIGAN ITS STRATEGIC PLAN

KCI (Kan Chen, Inc.) has been under contract to assist MDOT in the development of an ITS strategic plan for the State of Michigan. The plan develops a vision and lays out a strategy for implementation of the goals and objectives to deploy ITS technologies and services in Michigan. This action-orientated plan facilitates the forming

of alliances among academic, private, public, and private sectors of ITS research, operational tests, deployment, and implementation. The plan was completed in April 1997.

10. AUTOMATED HIGHWAY SYSTEM (AHS) AND CVO CASE STUDY

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 requires the U.S. Department of Transportation to develop an automated highway and vehicle system, and establishes a goal of having a prototype demonstration which will take place in San Diego in August 1997.

MDOT is an associate of the General Motors Consortium for AHS which has been awarded the sole contract by the US DOT. Recently Michigan was selected as a case study site for AHS. Due to the high percentage of commercial vehicle use on the I-94 corridor, the Michigan case study will be CVO based. The first phase of the case study will involve evaluation of the economic feasibility of implementing an AHS in Michigan. The study will be completed by May 1999.

11. THE UNIVERSITY OF MICHIGAN ITS RESEARCH CENTER OF EXCELLENCE

The University of Michigan was selected in 1993 by the U.S. Department of Transportation as one of three ITS research centers of excellence in the nation.

MDOT is committed to an annual funding level of \$250,000 from the State Planning and Research funds to this Center. This commitment will not only benefit MDOT by research conducted in an environment of excellence, but will also stimulate the private sector in developing ITS initiatives in Michigan.

12. INTER-REGIONAL INSTITUTIONAL ISSUES STUDY FOR COMMERCIAL VEHICLE OPERATIONS

Twelve states, including Michigan, are evaluating the institutional impediments to efficient and cost-effective movement of commercial traffic at the interstate level. Institutional issues are being identified in several alternatives. Recommendations include implementation of uniform data requirements, "one-stop shopping," and roadside enforcement. A Michigan working group including MDOT, the Departments of State Police, Treasury, Secretary of State, and Public Service Commission, and the American Trucking Association has been established to review the progress.

13. ENTERPRISE

The Enterprise program represents an international forum for collaborative research, development, and deployment ventures comprising the interest of governmental entities and industrial groups. It emphasizes rural Advanced Traveler Information Systems (ATIS).

14. RURAL ITS

Rural development of ITS technology will extend from systems providing ATIS to enhancing safety of train crossings by the inclusion of ITS warning systems. Efforts are underway to develop an ITS prototype grade crossing warning system to be deployed along the Detroit-Chicago high speed rail corridor.

Other rural applications such as traveler information and emergency management are also being examined to

determine their suitability in Michigan. Traveler information includes the possible installation of information kiosks which would allow travelers to access on-line information on subjects such as weather and construction related travel conditions and sight seeing attractions.

15. *INTELLIGENT TRANSPORTATION SOCIETY OF MICHIGAN (ITS MICHIGAN)*

On March 9, 1995 the creation of ITS Michigan was announced at a press conference held at the MITS Center in Detroit. It is a state chapter of the national organization, ITS America, a non-profit educational and scientific society which began operations in 1991 to coordinate and accelerate the development, deployment, and acceptance of advanced transportation technologies in the U. S.

The purpose of the society includes:

- To promote professional development of those interested in Intelligent Transportation Systems.
- To advocate the development and deployment of ITS for benefit to Michigan, and to serve as a voice for Michigan's ITS concerns at all levels.
- To build coalitions for the furtherance of ITS that take advantage of Michigan's unique blend of resources including, but not limited to, the ITS transportation system, the domestic auto industry, the international border with Canada, and a strong university system.
- To educate the people of Michigan on the benefits ITS holds for all citizens.

The headquarters for ITS Michigan is located at the MITS Center in Detroit. The Second Annual Conference and Business Meeting was held on May 5, 1997 at the Eaton Proving Grounds in Marshall, Michigan. Exhibits were present from both public agencies and private industry as well as academia.

16. *COMMERCIAL VEHICLE INFORMATION SYSTEMS AND NETWORKS' (CVISN)*

Michigan is the recipient of an FHWA grant awarded to demonstrate model deployment of Commercial Vehicle Information Systems and Networks (CVISN). The program goal is to establish an automated safety compliance system for CVO and the development of a "paperless commercial vehicle" through the application of ITS technologies and the "one stop" shop concept.

The scope of the CVISN Model Deployment Program includes distribution of safety information to computers, electronic collection of inspection data from the road side, electronic application for credentials by carriers, interfacing of state systems to the International Registration Plan Clearinghouse, interfacing of state systems to the International Fuel Tax Agreement Clearinghouse, and performing electronic clearance.

A kickoff meeting was held October 1996 to mark the beginning of the Michigan CVISN Model Deployment Program. The project plan is currently being written with an anticipated completion by June 1997. The scope of work and the contracting development details for Project Manager/System Architect are currently under development by MDOT.

Participants include FHWA, public agencies from MDOT, Michigan State Police, Department of State, and the Public Service Commission, the private industry sector comprised of information service providers,

representatives from the American Trucking Association and the Michigan Trucking Association, as well as shippers and carriers.

I 7. ITS/CVO STRATEGIC BUSINESS PLAN

Maximizing the safety and productivity benefits of ITS/CVO services, deployment and reengineering activities are essential. To establish this vision, an ITSKVO strategic business plan covering a 3-year period is under development. The business plan will address the scope of deployment activities, project costs, implementation schedule, and anticipated accomplishments.

The goal of the business plan is to institutionalize the process and projects, develop private partnerships, and provide justification for state budget requests for ITSKVO deployment funding. Coordination is required with the development of a regional ITSKVO business plan which together will provide a thorough understanding of the issues at hand. The state business plan will also serve as a framework to integrate ITSKVO technologies with existing state regulatory programs.

The time frame for development of the business plan is 15 months with an anticipated completion of December 1997.

GLOSSARY OF TERM-S

ATIS (Advanced Traveler Information Systems)

ATIS provides a variety of information that assists travelers in reaching a desired destination via private vehicle and/or public transportation. On-board navigation systems are a building block of ATIS. Information includes location of traffic accidents, weather and road conditions, optimal routes, and recommended speeds. Applicable also to this functional area is pre-trip planning through television, personal computers and kiosks.

ATMS (Advanced Traveler Management Systems)

ATMS is the building block of ITS. All other functional areas will use the information provided by ATMS. ATMS integrates management of various roadway functions, including freeway ramp metering and arterial signal control. In more sophisticated implementations, ATMS predicts traffic congestion and provides alternative routing instructions to vehicles over wide areas in order to maximize the efficiency of the freeway network. ATMS collects, utilizes, and disseminates real-time data for congestion on arterial streets and expressways, and alerts transit operators of alternative routes. Also included are dynamic traffic control systems which respond to changing traffic conditions by routing drivers around delays. Rapid detection and response to traffic incidents is especially effective in reducing congestion.

APTS (Advanced Public Transportation Systems)

APTS uses constituent technologies of ATMS, ATIS, CVO, and AVCS to improve operations of lanes dedicated for vehicles with a large number of passengers. Real-time ride matching, electronic payment through smart cards, automated dispatch systems, as well as automated collision avoidance technology are utilized.

AVCS (Automated Vehicle Control Systems)

AVCS enhances the driver's control of the vehicle. AVCS includes concepts that will become operational on different time scales. Safety being the key factor in AVCS, collision avoidance systems would alert the driver of imminent collision conditions with other vehicles, hazardous objects, or when the vehicle leaves the road. In more advanced systems the vehicle will respond to the conditions. Such systems usually require communications within the vehicles and thus involve, to a larger extent, the automobile manufacturers.

CVO (Commercial Vehicle Operations)

CVO is applicable to trucks, busses, commercial vans, taxis, and emergency vehicles and is broadly defined as the movement of goods and services in an expeditious manner. Automatic vehicle identification systems and locating systems are the basis of CVO. CVO benefits the transportation industry by the improved efficiency of the movement of goods through such technologies as weigh-in-motion and the advanced communication devices that link drivers with weigh stations and their dispatch centers.

ITS (Intelligent Transportation Systems)

ITS is the application of new and emerging technologies in the field of transportation. It involves a wide array of technologies, including electronics, computer hardware, software, control, and communications. It consists of five functional areas with which these technologies are applied. All five areas are overlapping and can be applied to rural areas as well as urban.

MICHIGAN INTELLIGENT TRANSPORTATION SYSTEMS CENTER

The Michigan Intelligent Transportation Systems Center, known as the “MITS Center,” is the hub of ITS technology applications at the Michigan Department of Transportation. It is a world-class traffic management center where staff oversee a traffic monitoring system for 32 miles of Detroit freeway.

Traffic flow data is communicated from road sensors to the MITS Center where it is analyzed. This traffic information is then conveyed to the motorist in the form of advisory message signs strategically located along the freeway. The system includes 24 television monitors, 11 television cameras, 14 changeable message signs, 49 ramp meters, 1,240 inductive vehicle detectors. The center utilizes 16,000 square feet of space with administrative offices, and conference rooms, to assist in the effort of freeway operations and development of ITS.

An expansion of the current monitoring system to cover an additional 148 miles of freeways in metropolitan Detroit is underway. It will include integration with Oakland County’s FAST-TRAC traffic operations center in Troy. The recent relocation of Michigan State Police Second Regional Dispatch Center into the MITS Center will also significantly improve incident management efforts in southeast Michigan by providing 24 hour, seven days per week monitoring of the traffic control center with fourteen officers on each shift..

A SHORT HISTORY

The traffic surveillance concept was first conceptualized in 1955 through experimentation involving closed circuit television. Results prompted an agreement in 1959 for the project known as the Freeway Traffic Surveillance and Control Research Project. At this time specifications had to be determined for the television cameras, monitors, transmission system and associated equipment. Installation of the camera equipment and communications progressed rapidly.

By October of 1960 it was possible to transmit a live picture of freeway traffic to the Automobile Show at Cobo Hall in downtown Detroit. The nation’s first experimental traffic control system utilizing closed circuit television coordinated with illuminated signs began experimental operation on May 7, 1962. In 1965 the phase-in of digital computer control was being utilized. The first use was to provide up-to-date information to operators controlling field signals.

Proposed in 1970 with actual development beginning in 1976 was the Surveillance Control and Driver Information Operation (SCANDI). It included 4 and eventually 10 remote controlled television cameras viewing the freeway’s highest volume sections, nine changeable freeway message signs, 70 motorist aid telephones along 14 miles of freeway, and the SCANDI computer which continually monitored traffic flow information from 1,300 sensor loops imbedded in the pavement.

In 1987 the SCANDI project covered both directions on parts of four freeways. All of the Ford (I-94) Freeway within the City of Detroit (14.2 miles), all of the Lodge (U.S -10) Freeway within the City of Detroit (12.2 miles), part of I-75, (23 miles of the Fisher Freeway east of Jeffries), and 3.4 miles of the Chrysler Freeway (I - 75) south of the Ford Freeway.

In 1991 SCANDI was relocated and renamed to the Michigan Intelligent Transportation Systems (MITS) Center. Along with its new name there was an update and expansion of the computer capability and the addition of remote control capability.

Michigan Intelligent Transportation Systems Center (MITSC)



(MITSC)

Michigan Department of
Transportation
1050 Sixth Street
Detroit, Michigan 48226
(313)256-9800

DIRECTIONS FROM METRO AIRPORT:
TAKE I-94 TO SB LODGE FWY. (M-10)
TO "COBO ROOF/ HOWARD ST." EXIT

DIRECTIONS FROM LANSING:
TAKE I-96 TO 696 TO
SOUTHBOUND LODGE FWY. (M-10)
TO COBO ROOF/HOWARD ST." EXIT

TO ENTER MITS PARKING LOT:
PRESS BUZZER OR
ENTER CODE (IF PROVIDED)

TO ENTER MITS CENTER:
PRESS BUZZER NEXT TO DOOR
OR ENTER CODE (IF PROVIDED)

