

**HNTB CORPORATION**  
**2000 PROJECT STATUS REPORT**  
**TRB FREEWAY OPERATIONS COMMITTEE**

**Grand Rapids ATMS**

Under contract to the Michigan Department of Transportation, HNTB recently completed the design of an advanced traffic management system for US Route 131 in the City of Grand Rapids, and is currently providing construction engineering services. The project includes NTCIP compliant variable message signs, variable speed limit signs, closed-circuit television surveillance, and a fiber optic communications system. A temporary control center was also designed, and is co-housed with the area s 911 dispatch facility.

**Dallas/Fort Worth ITS Plan**

Under contract to the Dallas Area Rapid Transit Authority (DART), HNTB recently prepared a conceptual design of a wide area network for sharing traffic information in the Dallas/Fort Worth area. This work entailed establishing the communication requirements to support the existing regional ITS architecture of both metropolitan areas, and developing an operational plan to define how agencies will share data, physical resources, and information among one another. Conceptual design included core center-to-center information exchange requirements using data element standards defined by the Traffic Management Data Dictionary (TMDD) and the Message Set for External Traffic Center Communications (MSETMCC). Will also use the emerging NTCIP standard DATEX-ASN for center to center communications. Approximately 50 jurisdictions in the region are actively involved in guiding the effort, adding significantly to the complexity of the project.

**Borman Expressway ATMS — Northwest Indiana**

HNTB is serving as system manager for the design and implementation of the Borman Expressway ATMS, one of the first in the country to utilize an all wireless design, and to employ the Virtual TMC concept, placing system control and surveillance monitoring in the hands of mobile response operators called Hoosier Helpers . The system includes CCTV, VMS, detection, and HAR, all using microwave or radio frequency communications to a new Traffic Management Center, where information is processed and relayed back to mobile operators on the roadway. Hoosier Helper vehicles will contain video monitors and a touch screen display to allow system monitoring and control. HNTB recently completed the design of the system, and is currently providing construction and software development services with subconsultant Iron Mountain Systems.

**Akamai Highway Information (AHI) - Honolulu, Hawaii**

HNTB is a subconsultant to Austin, Tsutsumi & Associates for the concept, design and implementation of a freeway traffic management system for over 40 miles of freeway on the island of Oahu. The system is being designed to cover Interstates H-1, H-2, Moanalua Freeway and the approaches to the Pali and Likelike trans-Koolau highways. The contract with the Hawaii Department of Transportation covers preliminary and final design of the system, plus system implementation, integration, and an operational support period.

A unique aspect of this project has been the heavy emphasis on public involvement and participation in the design process. Due to a very high sensitivity of the citizenry to the impacts of deploying field devices in the field of view of the island's natural features and vistas, a special project advisory committee has been established to address these concerns. During the preliminary engineering phase an advisory committee met on a monthly basis to provide technical direction to the project and included numerous non-agency participants such as the Outdoor Circle, Sierra Club, Life of the Land and Hawaii's Thousand Friends. The advisory committee will continue to meet during the detailed design phase of the project so that continued input from the public can be obtained and incorporated into the design.

A separate subcommittee of traffic and emergency response personnel was established to discuss incident management issues and how the proposed system would benefit and support the emergency responders. Plans are underway to initiate a freeway service patrol sometime within the next year.

#### **I-95/I-395/I-495 Interchange TMS Design - Washington DC/Northern Virginia**

As part of a \$350 million reconstruction of the I-95/I-395/I-495 interchange, HNTB is designing a traffic management system for a 4 mile segment of I-95 in the Washington, DC area, and modifying the existing system currently in place. Now in phase 4 of 6 total phases, the design focuses on maintaining communications to the existing reversible roadway access system and other TMS components while the roadway construction takes place, as well as providing additional instrumentation to supplement the existing system. The project includes a combination of spread spectrum radio, microwave, leased telephone, and rerouted fiber optic communications to variable message signs, CCTV cameras, access gates, and video detection stations. A critical part of this effort is a carefully choreographed sequencing of construction activities that resulted in no system down-time.

#### **CARAT Independent Evaluator - Charlotte, North Carolina**

HNTB is serving as the independent evaluator of the design-build-warrant (D-B-W) process being used for the procurement and implementation of the Congestion Avoidance and Reduction for Automobiles and Trucks (CARAT) freeway surveillance and control system. The North Carolina Department of Transportation (NCDOT) received Federal Highway Association (FHWA) approval to use the innovative procurement method of D-B-W to acquire and implement an Intelligent Transportation System (ITS) for Interstate 77 in Charlotte.

HNTB has been responsible for documenting and evaluating this unique approach to procuring a traffic management system. HNTB will produce a decision making document detailing the major decisions and actions taken throughout the process. The four major steps in the process are being evaluated. These include: development of the D-B-W documents, procurement, implementation and warranty period. The evaluation reports will compare the D-B-W process to other more traditional methods of system procurement and implementation.

### **Florida Turnpike ITS General Consultant**

HNTB Corporation, in association with TransCore, is under contract to the Turnpike District of the Florida Department of Transportation as a general consultant for Intelligent Transportation Systems (ITS) and traffic operations assignments. Services are being performed under a five year contract.

HNTB is working with Turnpike personnel in Tallahassee, Ft. Lauderdale, Orlando and other locations as required. Services being provided include the design and implementation of two traffic operations centers in Pompano Beach and Orlando. The Turnpike is the lead agency for the development of the Florida Fiber Network (FFN) and the TransCore/HNTB team was responsible for developing the technical requirements of the FFN as well as the overall preparation of the request for proposals. The FFN is one of the largest public-private ITS ventures in the country and involves the installation of fiber optic cables and outside plant infrastructure along approximately 2,000 miles of the Florida Interstate System and other major corridors. The team is also tasked with the development, design, and implementation of various ITS infrastructure such as detection strategies, surveillance, VMS, and HAR.

### **Traffic Incident Management Program (TIME) - Milwaukee, WI**

HNTB has been involved in developing a comprehensive freeway incident management program in the seven county Southeastern Wisconsin region. HNTB has made various recommendations for strategies ranging from enhanced interagency coordination to implementing various ITS elements to alleviate freeway traffic congestion caused by incidents. The project included the establishment of a regional Steering Committee to provide direction and support for the permanent and on-going development, implementation, and administration of the regional incident management program. Implementation of ITS elements has included: Freeway Patrols, Crash Investigation Sites, Incident Clearance Legislation, Enhanced Location Markings, and Educational and Outreach Efforts.

### **Dane County Incident Management Program - Madison, WI**

HNTB is working with the Wisconsin Department of Transportation to study incident management operational and infrastructure elements and facilitate the development of a comprehensive incident management program for Dane County. The project assessed the potential applicability and benefits of ITS User Services to the Dane County region and recommended an implementation strategy for ITS activities and technologies in a Strategic Deployment Plan.

### **Miller Park Freeway Traffic Management System - Milwaukee, WI**

HNTB completed the design, and is currently providing construction inspection services for the Miller Park Freeway Management System in Milwaukee, Wisconsin. The system includes ramp meters, system detector stations, variable message signs, communications infrastructure, traveler advisory radio, closed circuit television and overhead lane control signals. The system ties into the MONITOR Freeway Management System in place

throughout the Milwaukee area. The construction cost for this project will total over \$5 million. The project will be completed in early August 1999.

#### **Route1/I-95 Interchange - Washington DC/Northern Virginia**

As part of this interchange reconstruction project, HNTB was selected to design a modification to the existing traffic management system on I-95 in the Washington, DC area. The design will include temporary communications for existing system components during the roadway construction, the addition of new CCTV cameras, vehicle detectors, and classification stations.

#### **Advanced Traffic Management System (TRIMARC) - Louisville, KY**

HNTB is currently providing construction engineering and inspection services for the TRIMARC advanced traffic management system in the Louisville, Kentucky/Southern Indiana area. The system includes VMS, HAR, CCTV, and vehicle detection covering approximately 20 freeway miles. As subconsultant to TRW, HNTB designed the system, and also provided architectural services for the design of the traffic management center.

#### **Cross Westchester ITS Design — Westchester, New York**

HNTB is currently serving as the General Consultant for roadway and ITS designs on the Cross Westchester Expressway, preparing detailed designs for some sections of the roadway, and overseeing the work of other consultants on others. The current design includes CCTV, VMS, loop detectors, acoustic detectors, and HAR communicating using CDPD, ISDN, fractional T1, and microwave. The ultimate system will use fiber optic communications.

#### **Central Indiana ATMS — Indianapolis, Indiana**

HNTB is currently serving as the system manager responsible for system design, software development, system integration, and operational support for the Central Indiana Advanced Traffic Management System. The system will include surveillance, traveler information, mobile response vehicles, and a new Traffic Management Center. Operational concepts and software will potentially be based on the Borman Expressway ATMS, currently being deployed under HNTB's contract with InDOT.

#### **Grandview Triangle ITS Design - Kansas City, Missouri**

HNTB is under contract to analyze and design ITS equipment to aide in the maintenance and management of traffic during the construction of the Grandview Triangle Interchange. The design will deal with maintaining communications and power service to any temporary ITS equipment installed to support current and subsequent interchange construction contracts. Design efforts will address the need for equipment to facilitate the maintenance and management of traffic during construction, or to relocate or remove equipment previously installed. HNTB will design ITS equipment to monitor traffic conditions on the freeway segments within the Grandview Triangle and convey traveler information to motorists on the major routes within, and in close proximity to, the Grandview Triangle Interchange area.

### **Harrisburg Early Deployment Plan, ATMS Design — Harrisburg Pennsylvania**

HNTB recently completed an ITS Early Deployment Plan (EDP) for Harrisburg Pennsylvania under contract to the Pennsylvania Department of Transportation, as is now providing design services for some of the initial recommendations of the plan. En-route motorist information in key areas of the Harrisburg region was identified as a major near term need in the EDP. In response to this need, design is now proceeding for a variable message sign system with dial-up communications.

### **Maumee River Bridge ITS — Toledo Ohio**

As part of the program management services contract with Ohio Department of Transportation (ODOT) for the design and construction of a new high level bridge crossing of I-280 over the Maumee River, HNTB is providing ITS design services to provide conduit layouts for the installation of a future ITS system along I-280. This work is a follow up to the recommendations outlined in the Strategic Deployment Plan HNTB prepared for the Toledo Metropolitan Area Council of Government (TMACOG) and ODOT in July of 1999. Services include preparation of a schematic conduit layout plan for the entire corridor and coordination with individual design consultants for inclusion into final construction plans.

### **Traffic Management Center — Allentown Pennsylvania**

Under contract to the Pennsylvania Department of Transportation, HNTB is providing preliminary design services for a 10,000 square foot traffic management center that will serve current and future freeway management systems in Allentown, Bethlehem, and Easton. This project includes the development of alternate floorplan arrangements and an analysis of the TMC operations staff.