

THE OFFICE OF OPERATIONS RESEARCH & DEVELOPMENT, AND TECHNOLOGY SERVICE MENT OF THE MOBILITY AND SAFETY GOALS

DEVELOPMENT WITHIN FHWA'S RESEARCH, BUSINESS UNIT (SBU) FOCUSES ON ACHIEVE-OF FHWA'S NATIONAL STRATEGIC PLAN.

We Develop

...advanced signal control systems that will reduce travel time and delay and increase reliability of travel time by adapting signalization to changing traffic conditions more effectively in an intelligent infrastructure. We develop advanced simulation models for planning, project development, and project analysis and weather-related models and decision support systems.

**We Support** 

...advanced technologies affecting the four vehicle platforms of the Intelligent Vehicle Initiative (IVI)—passenger cars, trucks, buses, and specialty vehicles as well as studying crosscutting issues among the platforms. Our efforts focus on driver assistance and crash avoidance concepts for snowplows and infrastructure-based intersection collision avoidance.

We Enhance

as the Nationwide Differential Global Positioning System (NDGPS) and Dedicated Short-Range Communications (DSRC). The deployment of NDGPS is improving GPS accuracy, and the development of standards and roadside applications for DSRC will enable future Intelligent Transportation Systems (ITS) services through infrastructure-vehicle cooperative systems.

OPERATIONS R&D

MULTIMEDIA PRODUCTS & SERVICES



THE OFFICE OF OPERATIONS R&D IS COMPRISED OF TWO TEAMS—THE TRAVEL MANAGEMENT TEAM AND THE ENABLING TECHNOLOGIES TEAM. THE TRAVEL MANAGEMENT RESEARCH PROGRAM IS FOCUSED ON APPLIED RESEARCH TO DEVELOP THE NEXT GENERATION OF TRAFFIC MANAGEMENT SYSTEMS AND MODELS.



**ADUANCED TRAFFIC MANAGEMENT SYSTEM RESEARCH ANALYSIS DATABASE SYSTEM (ARADS)** is a tool for data exchange among a variety of analytical traffic models. The final version of the Traffic Software Data Dictionary and Object Model developed under the ARADS effort is available as a free download at www.tfhrc.gov.

Contact: Gene McHale, (202) 493-3275, gene.mchale@fhwa.dot.gov

**ADAPTIVE CONTROL SOFTWARE (ACS)** will adjust signal timing to accommodate changing traffic patterns. These decentralized prototypes operate at the local intersection level. A report is available on CD-ROM.







**ADUANCED TRANSPORTATION CONTROLLER AND CABINET** is the next generation of hardware that will support multiple advanced transportation applications. Specifications for advanced transportation controllers, cabinets, and application program interfaces have been developed to assure interchangeability and interoperability between application programs and hardware. More information on the Advanced Transportation Controller and Cabinet can be found at <a href="https://www.ite.org/standards/atc/index.htm">www.ite.org/standards/atc/index.htm</a>.

Contact: Raj Ghaman, (202) 493-3270 raj.ghaman@fhwa.dot.gov **DYNAMIC TRAFFIC ASSIGNMENT (DTA)**: The Traffic Estimation and Prediction System for Planning (TrEPS-P) supports transportation network planning and operations analyses in ITS and non-ITS environments. Two prototypes—DYNA-SMART-P and DynaMIT-P—have been developed; however, only DYNAS-MART-P is currently being field tested. For further information, visit the DTA website at www.dynamictrafficassignment.org.

Contact: Henry Lieu, (202) 493-3273, henry.lieu@fhwa.dot.gov



### TRAVEL MANAGEMENT TEAM Continued



ITS DEPLOYMENT ANALYSIS SYSTEM (IDAS) is a software tool designed for transportation planners to estimate the costs and benefits of ITS deployment concepts and strategies. IDAS is available from McTrans and PC-TRANS.

Contact: Gene McHale, (202) 493-3275, gene.mchale@fhwa.dot.gov TRAFFIC RESEARCH LAB (TReL) contains sophisticated computers and traffic signal control hardware that operate in a controlled environment to allow researchers to fully assess the efficiency, safety, and mobility benefits (or disadvantages) of strategies before they are deployed in the field. Group tours are available.

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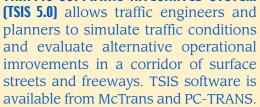




#### STRATEGIC WORK ZONE ANALYSIS TOOLS (SWAT)

provide a suite of user-friendly computer software that will accurately analyze and reliably predict work zone impacts during pre-planning, planning, design, and operation of construction or maintenance phases. For further information, visit www.tfhrc. gov/its/swat.htm.

Contact: Deborah Curtis, (202) 493-3267, deborah.curtis@fhwa.dot.gov TRAFFIC SOFTWARE INTEGRATED SYSTEM



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**QUICKZONE** is a user-friendly SWAT tool to estimate delay in work zones. It is an open-source, Microsoft Excel-based application suitable for both urban and inter-urban corridor analysis. Ouick-Zone Beta is available as a free download at www.tfhrc.gov/its/quickzon.htm.

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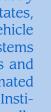


THE ENABLING TECHNOLOGIES TEAM RESEARCHES SPECIFIC TECH-**NOLOGIES THAT CAN IMPROVE THE** PERFORMANCE OF ITS SERVICES AND SUPPORT TO IVI.



DEDICATED SHORT-RANGE COMMUNICATION **(DSRC)** standards will provide a reliable and flexible communications system between vehicles and the infrastructure to support current travel management applications, as well as the next generation of vehicle infrastructure cooperative systems.

Contact: James Arnold, (202) 493-3265, james.a.arnold@fhwa.dot.gov INTELLIGENT UEHICLE INITIATIVE (IVI), which is a cooperative program with industry and includes partnerships with States, will accelerate deployment of in-vehicle and infrastructure cooperative systems that reduce motor vehicle crashes and incidents. Reports on the Automated Highway System, IVI Societal and Institutional Issues, and Sensor-Friendly Vehicles and Roadways are available from the ITS Electronic Document Library at www.its.dot.gov/welcome.htm.



Contact: Robert Ferlis, (202) 493-3268, robert.ferlis@fhwa.dot.gov



**HIGHWAY CAPACITY MANUAL (HCM) 2000** has been released by the Transportation Research Board (TRB). FHWA's Office of Operations R&D participated in this activity by conducting research on freeway systems analysis and developing the multi-platform highway capacity analysis software known as HiCAP 2000™. HCM 2000 is available from TRB. HiCAP 2000™ is available from Catalina Engineering, Inc. on the web at www.hicap2000.com.



**IUI SPECIALTY UEHICLES** program is evaluating the use of advanced technologies to assist drivers of snowplows and other specialty vehicles, such as ambulances and police vehicles. These IVI technologies will provide drivers with roadway guidance during harsh weather conditions. For more information on snowplow technologies, see the recent Public Roads article at www.tfhrc.gov/ pubrds/janfeb01/safeplow.htm.







## **TEAM** Continued

# **SOURCES**



**INATIONWIDE DIFFERENTIAL GLOBAL POSITIONING SYSTEM (INDEPS)** will provide accurate positioning and location information to travelers with 1- to 2-meter accuracy (and possibly better in the future). This will enable improved collision notification systems, cooperative vehicle-highway collision avoidance systems, and more accurate in-vehicle route guidance systems. A virtual workshop GPS/NDGPS CD-ROM is currently available.

Contact: James Arnold, (202) 493-3265, james.a.arnold@fhwa.dot.gov



**RURAL ITS AND WEATHER** are demanding increased research attention. We are working to enhance weather information systems for traveler information and to develop a Maintenance Decision Support System for improved winter weather system operation.

Contact: Rudy Persaud, (202) 493-3391, rudy.persaud@fhwa.dot.gov

We are involved in many exciting areas of operations and intelligent vehicle research and development. We work cooperatively with both our internal and external customers to deliver products and services that are driving the future of surface transportation technology.

#### The IDAS and TSIS 5.0 software are available from:

**McTrans** 

P.O. Box 116585

Gainesville. FL 32611-6585

Tel: (352) 392-0378 • Fax: (352) 392-3224

E-mail: *mctrans@ce.ufl.edu* 

Website: http://mctrans.ce.ufl.edu

#### **PC-TRANS**

Kansas University Transportation Center 2011 Leaned Hall Lawrence, KS 66045

Tel: (785) 864-5655 • Fax: (785) 864-3199 E-mail: pctrans@kuhub.cc.ukans.edu Website: http://www.kutc.ku.edu/pctrans/

## Orders for the NDGPS and the ACS CD-ROMs should be made to:

Office of Operations R&D, HRDO Federal Highway Administration Turner-Fairbank Highway Research Center 6300 Georgetown Pike, Room T-204 McLean, VA 22101-2296

Tel: (202) 493-3302 • Fax: (202) 493-3419 E-mail: operationsr&d@fhwa.dot.gov

#### Orders for the HCM 2000 should be made to:

Transportation Research Board Lockbox 289

Washington, DC 20055

Tel: (202) 334-3213 • Fax: (202) 334-2519

Website: http://nationalacademies.

org/trb/bookstore/

#### For additional Operations R&D, information go to:

www.tfhrc.gov/its/pubs.htm or www.tfhrc.gov/its/its.htm

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