

UTC Spotlight

University Transportation Centers Program

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A Research Test Bed, a Teaching Laboratory, and a Deployment Project

A major transportation research, educational, and deployment initiative at the University of Massachusetts Transportation Center (UMTC) has led to the creation of the Regional Traveler Information Center (RTIC), a collaborative venture between the UMass Transit Services, the U.S. Department of Transportation's Federal Highway Administration, and the Massachusetts Highway Department.

The overall goal of this project is to develop and put into operation a fully integrated, sustainable, traveler information system for a 2,500 square mile area of Western Massachusetts, including Franklin, Hampshire, and Berkshire Counties, the North Quabbin portion of Worcester County, and the Springfield area of Hampden County.

Although the overarching aim of the UMTC RTIC project is to assist regional stakeholders in establishing an effective traveler information system to serve MassHighway's Statewide 511 system,

the RTIC project has also served as an excellent research test bed for UMTC faculty and students for the purpose of examining new information technology applications, including: multi-band traffic characteristic sensors; in-vehicle; transponders and road side readers; and video-based automated license plate recognition applications. In addition, the RTIC project has provided faculty a teaching laboratory to demonstrate field applications of new technologies and has supplied faculty with an extensive database for the conduct of class term projects in graduate courses on intelligent transportation systems and traffic flow and simulation modeling.

Dozens of students over the past 10 years have benefited from the existence of the RTIC project as well as other UMTC research activities involving hands-on experience and field application. Much of this research activity has centered on the challenges involved in estimating current and near-future arterial travel times from a combination of real-time point based traffic flow measurements coupled with direct, contemporaneous measurements of actual route travel times. The research has embraced field and laboratory studies using both portable and installed video and electronic devices, population discrimination (filtering) techniques, and travel-time modeling. Many graduates

This monthly report from the University Transportation Centers Program highlights some of the recent accomplishments and products from one of the University Transportation Centers (UTCs) managed by the U.S. Department of Transportation's Research and Innovative Technology Administration.

The views presented in the *UTC Spotlight* are those of the authors and not necessarily the views of the Research and Innovative Technology Administration or the U.S. Department of Transportation.



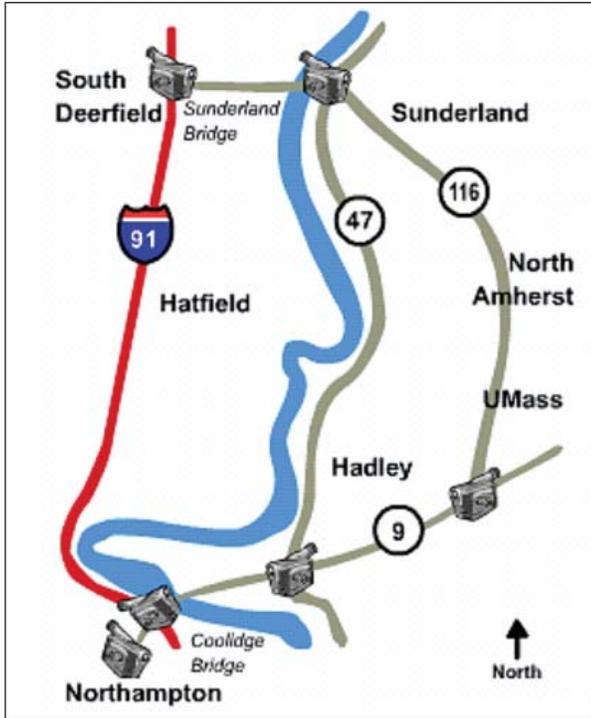
Dr. Daiheng Ni

RTIC staff students in the field.



have entered the transportation labor pool and accepted challenging jobs in the transportation workforce with Federal, State, and local transportation agencies; engineering and management consultants and defense contractors; and universities. It should be noted that the results of RTIC research have been published and presented at annual meetings of the Transportation Research Board and ITS America.

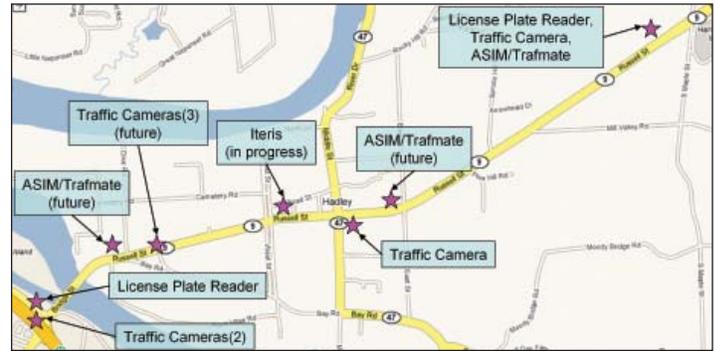
RTIC Test Bed



Location of web cameras.

The initial focus in the RTIC project was to provide travel times and congestion information in the Coolidge Bridge area along State Route 9, serving a major commuter corridor and ambulance route in Western Massachusetts. Travel time estimates were derived initially using automated video license plate recognition technologies. Currently, travel time estimates are obtained for a five-mile section

RTIC Sensor Locations



Current and future sensor locations.

of State Route 116 using Massachusetts Turnpike Authority toll transponders; this technology will be extended in the near future to include a section of Route 9 along which video, infra-red, sonic and radar detectors are currently in operation. RTIC travel time estimates are available to the public on www.MassTraveler.com along with live images of traffic at various locations along Routes 9 and 116 and elsewhere in the region. Future plans include providing public transportation and tourism information for use by state and local agencies, private entities, and the general public. Included, for example, will be link travel times based on AVL data provided by UMass Transit Services and the Pioneer Valley Transit Authority as well as real time bus route, bus schedule, and parking availability information. RTIC operations will move early next year from space in the UMass bus driver’s lounge to its own new building in the UMass Transit Services complex. The new RTIC Center will house an operations and training facility as well as garage space for several transit vehicles. 🌀

About This Project

The RTIC project began in the late 1990s with the support of a National Science Foundation (NSF) grant secured by Drs. John Collura and Paul Shuldiner. Today, the project continues under the direction of Dr. Shuldiner with the assistance of Ms. Kris Stetson, Mr. Jamie Schleicher, and other UMTC faculty, staff, and students. Multiple research funding sources have been used to support the continuing RTIC efforts, including funds from the U.S. DOT University Transportation Centers Program along with other monies, staff, and equipment provided by the UMTC, the UMass Transit System, MassHighway, and the Federal Highway Administration. Arrangements are currently underway to coordinate RTIC activities with related emergency management activities being organized by the University and local communities.

For further information on the RTIC project contact Ms. Kris Stetson at kstetson@ecs.umass.edu.