With growing populations and limited resources, our state’s urban areas face unprecedented transportation challenges. In North Texas, the Texas A&M Transportation Institute (TTI) is helping meet those challenges through technology transfer and the implementation of practical, problem-solving research. TTI’s efforts, led by its 22 area employees, are focused on improving the safety, efficiency and cost-effectiveness of the area’s transportation system.

I-35 Construction Traveler Information System
TTI is working collaboratively with the Waco District and TxDOT Traffic Operations Division to deploy a construction traveler information system along I-35 through Central Texas. A number of system elements are currently deployed: travel time sensors, traffic monitoring cameras, traffic volume collection sites and a lane closure clearinghouse. TTI is planning additional services to broaden the availability of traveler information and increase safety efforts.

Traveler Information Website
TTI continues to refine the DFW Traffic website, www.daltrans.org, providing travelers with information about area freeways. Users obtain information on incidents, lane closures, speeds, and dynamic message sign data automatically updated to reflect current conditions without reloading the page. A mobile version of the site is also available. The website averages 600,000 page views per day.

Intelligent Transportation Systems (ITS)
TTI continues to develop innovative software solutions for the Dallas Traffic Management Center, DalTrans. Collecting data from an expanding variety of sources, the DalTrans software enables TxDOT personnel to efficiently manage more than 235 miles of freeway. Data produced by DalTrans are disseminated to numerous media outlets, traffic reporting services and governments.

Work Zone Crash Analysis
Researchers at TTI recently completed a review of vehicle crashes in the DFW Connector work zone. This first review of an active work zone’s crashes showed an increase in crashes in areas where active construction work also increased. Overall, injury and fatality crashes increased from baseline conditions to levels that were two times higher than expectations based on national research. Separately, TTI measured handheld cell phone use in the work zone, finding 1-in-8 drivers using a handheld cell phone. TTI also identified low compliance with the work zone speed limits.

Incident Management
Researchers at TTI have developed a freeway incident management program to support an area-wide freeway management system. Incident management strategies will combine with ITS applications to enable local agencies to operate the transportation network at its highest levels of efficiency. These strategies offer a benefit-to-cost ratio of 36:1 and have reduced average incident clearance times to less than 20 minutes.
Garland Train Monitoring System
Researchers at TTI designed and deployed a 3.5-mile long train monitoring system in 2011 along the Kansas City Southern railroad line parallel to a major arterial road in Garland. The system consists of six stations equipped with radar sensors to detect train movement. A map-based display was designed to allow users to monitor in real-time the train’s location, speed, direction, length, blocked crossings, and estimated time of arrival to the next at-grade crossing. This information can be shared with emergency management services and the public to help make better travel decisions.

Improving Safety for Teen Drivers
North Texas-area schools continue to represent one of the strongest concentrations of the Teens in the Driver Seat® (TDS) initiative activity in the state. TDS is different from other teen driver safety initiatives in two ways. First, it focuses on the most common dangers for young drivers: driving at night; distractions such as cell phones, texting and other teen passengers; and speeding. Second, the program relies on the teen audience to develop and deliver safety messages to their peers. To date, over 50 high schools and middle schools in the North Texas region actively participate in the program.

DART Transit Signal Priority
The opening of the DART Green Line in 2009 created a 33 percent increase in train traffic in downtown Dallas. To handle this increase without impacting vehicular or pedestrian traffic, TTI assisted DART and the City of Dallas, in developing and deploying a new transit signal priority system. TTI provided technical assistance, conducted extensive testing of different detection technologies, and simulated the downtown network to measure the impact on vehicular and train networks.

School Traffic Safety and Operations
TTI research supported the development of guidelines to help traffic professionals, school district staff, school architects and other stakeholders plan, design and operate safely around K-12 school campuses. The Traffic Around Schools workshop was delivered in Austin, El Paso, Houston, Pharr, San Antonio and Dallas, reaching over 150 participants representing 36 agencies. The workshops helped highlight and emphasize the importance of multi-agency/multi-disciplinary cooperation in the planning, design and operation of school sites to provide safe and efficient transportation access.

HOV Lanes, Managed Lanes, and Express Lanes
TTI is assisting TxDOT, Dallas Area Rapid Transit (DART) and the North Central Texas Council of Governments in the planning, development and evaluation of an integrated system of high-occupancy vehicle (HOV), managed lanes, and future express lanes in the Dallas-Fort Worth region. The 69-mile regional HOV lane network has experienced the nation’s largest growth in carpooling. The network offers motorists an average time savings of one minute per mile, saved DART more than $6 million in bus operating costs, and significantly improved regional air quality.

Construction Project Community Liaison
TTI served as a liaison during the construction of high profile projects such as the North Central Expressway, the Dallas High Five Interchange and IH-30 in Arlington in advance of Super Bowl XLV. In this role, TTI helps facilitate prompt and effective communication. TTI is assisting both the Dallas and Fort Worth TxDOT Districts with projects along IH-35, IH-635 LBJ Freeway, North Tarrant Expressway, IH-35E, interchange of Chisholm Trail Parkway/IH-20/SH-183 and Ft. Worth’s West 7th Street bridge projects.

US-75 Integrated Corridor Management
Through this project, the US-75 corridor will operate in a multimodal and integrated manner, reducing travel times and improving safety and incident response. Local transportation agencies and the public will have access to real-time comparative travel times for various transportation modes and routes, resulting in more accurate travel time predictions, joint incident response plans, traffic signal control improvements and increased use of the light-rail system.

TTI’s Mission
To solve transportation problems through research, to transfer technology and to develop diverse human resources to meet the transportation challenges of tomorrow.

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