

HOUSTON-AREA INITIATIVES

In the greater Houston region, the Texas A&M Transportation Institute (TTI) is helping meet the transportation challenges presented by population growth and limited resources. TTI's research-based solutions are directed toward helping the Houston area's transportation system move people and goods safely, efficiently and cost-effectively. TTI's 25 Houston Office employees include graduate and undergraduate students from area universities.



Public Transportation

The TTI Transit Mobility Program provides research, technology transfer and technical assistance in public transportation for sponsors throughout the United States. Within the Houston region, program staff members worked with the Metropolitan Transit Authority of Harris County (METRO) to analyze the implementation requirements and project the life-cycle costs of using compressed natural gas for transit vehicles. TTI is assisting the University of Houston with the concept for a multimodal transportation center by gathering information from peer universities and transit systems that have implemented similar facilities. TTI provided technical assistance to Fort Bend County to develop a cost and revenue allocation methodology for performance analysis of rural and urban transit services. Transit Mobility program staff work with the Houston-Galveston Area Council (H-GAC) to evaluate elements of the Commute Solutions Program by comparing services to similar programs in major metropolitan areas around the country. TTI staff also assist METRO in evaluating experimental traffic control devices along the Red Line to improve rail and passenger-car safety.



HOV and Managed Lanes

TTI assists the Texas Department of Transportation (TxDOT), METRO and H-GAC in the planning, development and evaluation of an integrated system of high-occupancy vehicle (HOV) and managed lanes in the Houston region. The 103-mile network has helped make Houston a national leader in carpooling growth. The Houston HOV system carries more than 51,000 vehicles and 140,000 passengers per day. It has 38 parking facilities, with about 19,200 parked vehicles per day. TTI research shows that HOV lane usage can save drivers about 20 minutes of travel time during morning peak-hour traffic.



Serving the Houston Area

TTI's Houston Office was established in 1963. Over the past 49 years, TTI has helped shape the region's transportation system through innovative research, testing, planning and implementation of effective transportation solutions. TTI provided the expertise that helped:

- plan and develop the world's largest barrier-separated HOV lane system,
- develop and operate Houston TranStar,
- provide transportation safety outreach, and
- prepare the region's emergency evacuation plans.

Houston TranStar

TTI plays a significant role in the design and development of the Houston TranStar website (www.houstontranstar.org), which is the central source for traffic information in the Houston region. TTI develops a wide array of software applications running 24 hours a day at the facility. These applications support the internal traffic management and external traveler information functions, interfacing with traffic sensors, cameras, message signs, highway radio advisories, and incident and lane-closure information. The website has been recognized by the Federal Highway Administration (FHWA) and other organizations as a national model. The website is viewed by about 470,000 unique users per month, with more than 300 million page accesses per year.

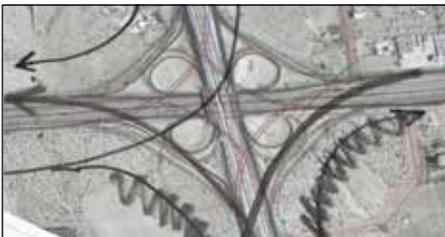
Traffic Safety

TTI is an active participant in the H-GAC Regional Transportation Safety Council, which promotes information sharing, establishes safety goals and performance measures, coordinates safety efforts across the region's jurisdictions, and identifies policy issues concerning safety. TTI's innovative Teens in the Driver Seat® (TDS), a peer-to-peer driver safety outreach program, is being launched in high schools throughout the Houston/Beaumont region. Early TDS program evaluations indicate that teen cell phone use and text messaging while driving are down 30 percent, and seat belt usage is up more than 14 percent at participating schools. TTI also conducts safety training for area officials.



Hurricane Evacuation Planning

TTI has worked with the private sector and multiple agencies, such as TxDOT, H-GAC, and the Texas Department of Public Safety, to help improve regional planning for hurricane evacuations. TTI plays a significant role in assisting these agencies to prepare for the annual hurricane season, including evacuation route planning and assistance in extending video and operational monitoring capabilities beyond urban areas. In addition to offering technical support during planning for evacuation events, TTI staff provide assistance during actual evacuations, assessment of operational conditions and technical decision support as requested.



Construction Project Analyses

TTI assists the Houston District of TxDOT in determining the economic impact of traveler delay due to major road construction projects and associated road user costs. These analyses assist TxDOT in evaluating motorist delays, developing contract incentives for construction companies and assessing related damages if contract deadlines are not met.

Traffic Sensor Deployment and Testing

TTI assists TxDOT and other local agencies in developing, testing and managing the traffic sensor systems infrastructure at Houston TranStar. TTI pioneered using automatic vehicle identification (AVI) toll tags as real-time freeway travel-time probes and has assisted in developing the largest such data collection and processing system in the world. The AVI system provides more than 20 years of historical data for traffic operations, planning and research, from which TTI provides analysis to measure Houston TranStar system performance and congestion on area roadways. TTI researchers are now investigating the application of other technologies, including those based on Bluetooth® technology, to enable travel-time monitoring on the region's arterial roadways. TTI has assisted local agencies in developing travel-time monitoring capabilities on more than 800 directional miles of freeways, including from Houston to Dallas, and on more than 600 directional miles of arterials.



Freeway Truck Operations and Safety

In 2000, TTI staff began working with TxDOT and

the City of Houston to determine the potential operational benefits derived from restricting trucks to a single freeway lane. An initial pilot project on I-10 (East Freeway) showed a 68 percent decrease in truck crashes, no negative impact on freeway operations and compliance rates exceeding 95 percent. This project resulted in recommended guidelines for implementation of lane restriction strategies for trucks statewide.



Center for Ports and Waterways

Through the Center for Ports and Waterways (CPW), TTI has developed historical and market information for short sea shipping activities in North America. TTI also has investigated the potential for developing container-on-barge services on inland waterways and the impact of mandated port security measures. In addition, TTI has documented air emission, capacity, congestion, safety, infrastructure, economic and fuel efficiency impacts attributed to rail, truck and barge transport.

TTI has documented and utilized methodologies for valuing the impacts of insufficient maintenance dredging of waterways and ship channels. Some of TTI's other research involves conducting rate studies for the Corps of Engineers for traffic on the Gulf Intracoastal Waterway and protecting waterways from encroachment.

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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