



TTI SAN ANTONIO OFFICE

Diversified, Multidisciplinary Research

Texas Transportation Institute (TTI) researchers in San Antonio conduct leading-edge research and technology transfer in a number of critical areas in transportation, including project development and delivery, operations, and asset management. For over 15 years, San Antonio researchers and staff have partnered with transportation agencies to conduct applied research and transfer research findings to actual practice.

Administratively, the San Antonio Office is located within the Research and Implementation Division. TTI San Antonio includes two office locations: at the One Castle Hills Building (1100 NW Loop 410, Suite 400) and at the TransGuide Traffic Management Center (3500 NW Loop 410, Suite 315).

- \$2.2 million in contract research
- \$1.4 million in FY11 expenditures

Expertise

Human talent provides a strong foundation for the program's research and technology transfer capabilities. Areas of expertise include the following:

Project Development and Delivery

- Optimization of the project development process
- Utility coordination and conflict management
- Utility inventory and permitting
- Utility construction specifications and cost analysis
- Right-of-way acquisition
- Alternative assessment and evaluation

Information Technology

- Development and implementation of web-based applications, including the Utility Installation Review (UIR) system, now implemented throughout Texas
- Data modeling
- Database design and optimization
- Business process modeling
- Application of geographic information system (GIS) technologies to transportation
- Automation of global positioning system (GPS) data collection and processing

System Management and Operations

- Electronic document management
- Applications of commercial real-time traffic data
- Multi-source data integration
- Outdoor advertising control
- Pedestrian asset management
- Impacts of energy development on the transportation infrastructure
- Traffic simulation and visualization
- Intelligent transportation systems (ITS)
- Hurricane and emergency evacuations
- Freeway and arterial corridor operational analysis
- Driver safety
- Freight analysis and operations
- System performance optimization and evaluation
- Commercial vehicle routing

Cooperative Relationships/ Sponsors

The TTI San Antonio Office has developed strong relationships with many agencies in Texas, throughout the United States and abroad, as well as with other groups and agencies within The Texas A&M University System. Examples of local, regional and national partnerships include the following:

- Bexar County Metropolitan Planning Organization
- City of San Antonio
- Alamo Regional Mobility Authority (RMA)
- Federal Highway Administration (FHWA)
- Texas A&M University – Corpus Christi
- Texas Department of Transportation (TxDOT)
- Texas State University
- Transportation Research Board (TRB)
- VIA Metropolitan Transit
- The University of Texas at San Antonio

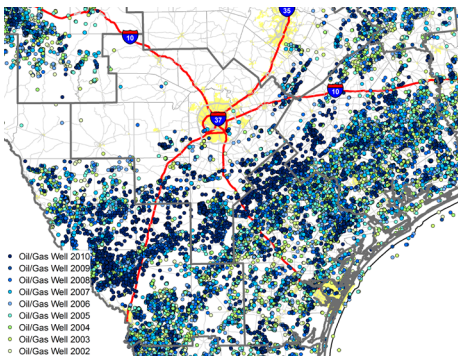
Recent Projects and Initiatives

At any given time, TTI San Antonio Office researchers are involved in some 20 research and technology transfer projects. Examples of recently completed or active projects include the following

Impact of Energy Developments on the Transportation Infrastructure

In recent years, Texas has experienced a boom in energy-related activities, particularly in wind power generation and extraction of oil and natural gas. While energy developments contribute to enhance the state's ability to produce energy reliably, many short-term and long-term impacts on the state's transportation infrastructure are not properly documented. To address this issue, TTI researchers:

- Developed file geodatabases of relevant energy- and transportation-related datasets.
- Conducted and documented field visits.
- Evaluated pavement impacts, roadside impacts, operational and safety impacts, and economic impacts.
- Prepared a set of strategies and recommendations for implementation.



Mobility Infrastructure Priorities Project

As a part of the General Appropriations Act, 82nd Texas Legislature, 2011 (HB 1, TxDOT Rider 42), TTI has been directed to provide assistance to metropolitan planning organizations (MPOs), TxDOT district offices and other project partners in the development of projects and programs to address mobility concerns. TTI San Antonio Office researchers are playing a critical role, serving as facilitators and coordinators for the identification and completion of studies that lead to projects that have the greatest impact considering factors such as congestion, economic benefits, user costs, safety and pavement quality.



Encouraging Earlier Participation of Utility Owners in the Development of Transportation Projects

Detection of utility conflicts as early as possible during the project development process can help to improve the timely adjustment of utilities and/or allow time to develop alternatives to avoid utility adjustments. Because of the nature of the relationship between transportation agencies and utility owners, it is frequently difficult to achieve acceptable levels of coordination with utility owners, increasing the risk of delays during the design and construction phases, disruption during construction, environmental damage, and cost overruns. The research is exploring strategies to encourage the early participation of utility owners, including the following: optimization of the utility process, streamlining and modernization of utility cost data submissions, use of utility conflict matrices, and an implementation plan and course requirements for core skill training.

Interagency Cooperation Agreements with TxDOT Districts in South Texas

For many years, the TTI San Antonio Office has had interagency cooperation agreements with TxDOT districts in South Texas. Agreements currently in place include the San Antonio, Laredo and Pharr Districts. For a number of years, the office also had an interagency cooperation agreement with the Corpus Christi District. As part of these agreements, TTI experts both in San Antonio and other offices throughout the Institute provide TxDOT districts with critical support in areas related to technology and knowledge transfer, strategic planning and operations analysis support, safety analysis support, and asset management technical support.



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.

Contact

Cesar Quiroga, Ph.D., P.E. (TX, LA)

Senior Research Engineer
Manager, San Antonio Office
Texas Transportation Institute
The Texas A&M University System
1100 NW Loop 410, Suite 400
San Antonio, TX 78213
(210) 979-9411 Ext. 17203
Fax: (210) 979-9694
c-quiroga@tamu.edu
<http://tti.tamu.edu>