



TTI WACO OFFICE

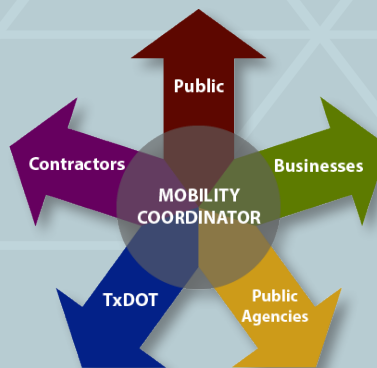
Waco, once a quiet Central Texas city on the banks of the Brazos River, has now become a destination city for Dr Pepper enthusiasts, Ironman participants, Fixer Upper visitors and companies like Amazon, SpaceX, and L3Harris. For over 170 years, Baylor University has called Waco home. The Texas Department of Transportation (TxDOT) has recently invested over \$2 billion in I-35 reconstruction and other regional projects. TxDOT has asked the Texas A&M Transportation Institute (TTI) to contribute its expertise in leading-edge and applied research with smart work zones, mobility coordination and human trafficking awareness to help improve mobility while emphasizing safety, reliability and economics during and after construction.

Mobility Coordination

TTI has successfully developed state-of-the-art skills and approaches to coordinate mobility during plan development and construction projects. Mobility coordination provides traffic operations expertise, construction technical assistance and public outreach support to public agencies during the construction of major roadway infrastructure projects. A mobility coordinator serves as an ombudsman for the construction project and works among departments of transportation (DOTs), local governments, contractors, businesses and the general public. The mobility coordinator is an independent agent not directly tied to any of the entities involved in the project.

Primary Focus Areas

- Facilitate open lines of communication among key stakeholders to allow them to ask questions, express concerns and provide feedback on the process.
- Support and facilitate an expert traffic management team to review mobility, access and safety impacts, as well as support utility relocations and right-of-way issues as needed.
- Support an ongoing public information campaign to educate property owners, businesses and the general public about the project and its impacts.
- Assist public agencies in making presentations to public officials, as well as civic and service organizations as requested, to enhance communication and knowledge about the project.
- Identify major impacts on area businesses affected by the project and develop mitigation plans.
- Routinely provide traffic delay occurrences and crash record summaries, along with a list of potential solutions to increase mobility and safety.



Countering Human Trafficking: A Toolkit for State DOTs

Human trafficking can be defined as the recruitment, transportation, provision, obtainment, patronization, or solicitation of a person for labor or services through force, fraud, or coercion for the purpose of involuntary servitude, peonage, debt bondage, commercial sex acts or slavery. Within the United States, human traffickers are using national, state and local transportation infrastructure, systems and modes. State DOT staff resources and practices have the potential to assist efforts to combat human trafficking, aid victims and support critical decision-making.



TTI is leading a team with a grant from the National Cooperative Highway Research Program (NCHRP) to develop implementation-ready tools that support effective training, policy and collaboration practices related to combating human trafficking across all populations. The products from this project will be tailored to employees of state DOTs, their contractors and collaborative partners engaged in countering human trafficking.





Snow and Ice

Through a grant from NCHRP, TTI led a team to create the latest snow and ice guide that is now published by the American Association of State Highway and Transportation Officials (AASHTO). The *AASHTO Guide for Snow and Ice Control*, released in 1999, aimed to serve as a training resource for operators, supervisors and managers. Its purpose was to assist them in choosing and executing approaches or technologies to proficiently address snow and ice conditions, ensuring that road users experience safe conditions and receive timely information for trip decisions. Significant alterations in the snow and ice control state of the practice have occurred over the last 20 years as a result of advancements in plowing equipment, materials handling and storage, communication, technology, strategies, and various other aspects of snow and ice control and management.

Safe Access Is Good for Business

TTI is part of a research team developing an access management toolkit for the Federal Highway Administration (FHWA). The focus of the toolkit is on the business community. The business community is often impacted by construction, driveway access and vehicle circulation. Access changes to a road can and do impact business activities, freight deliveries, customer parking and resale values. The toolkit will contain primers, presentations and social media templates with facts and data to reinforce the message that safe access is good for business. The toolkit is designed to help businesses understand the long-term benefits of access changes.



Improving Construction Plans Before the Bid

Artificial intelligence (AI) has rapidly evolved in the last decade, with significant improvement of its performance. As a sub-field of AI, the natural language processing (NLP) technique enables a computer to analyze, understand and derive meaning from textual data — human language. This NLP technique can be used to analyze historical change orders during construction projects and predict what work items are likely missing in a new project by automatically reviewing the new project’s bid documents, including specifications and work items. A TxDOT estimator can review the results and may add missing items to the engineer’s estimate, negating the need for

a change order after construction is underway. The development of this new tool is being funded by TxDOT’s Austin, San Antonio and Waco Districts.



How to Analyze a TxDOT Transportation Construction Schedule

TTI has developed, updated and continues to deliver the Construction 511 course, which applies pertinent items from the TxDOT standard specifications for construction and maintenance of highways, streets and bridges. Every construction project is unique and creates its own personality depending on the scope of work, existing conditions, unforeseen issues and contractor interactions. Participants should develop critical thinking skills and the ability to:

- review a contractor’s schedule submission and evaluate its compliance with specification requirements;
- review a contractor’s schedule logic and understand how it coincides with contract time charges and project progress;
- review a contractor’s schedule updates and compare progress with monthly estimates;
- review a contractor’s preconstruction schedule for compliance with specification requirements and constructability; and
- project progress and constructability compared with monthly estimates, engage the contractor regarding time and schedule concerns, apply best practices and create their own best practices for schedule analysis.

Increasing Pedestrian Safety in Tribal Areas

Pedestrian crashes in Tribal areas exhibit distinct contributing factors and characteristics compared to pedestrian crashes in urbanized areas. A lack of pedestrian infrastructure, such as sidewalks and lighting, coupled with socioeconomic factors, contributes to pedestrian crash rates being 3.5 times higher in Tribal areas than in other areas of the United States. The Systemic Safety Study of Pedestrians in Tribal Areas, funded by FHWA and led by TTI, examines risk factors for pedestrian crashes in rural Tribal settings and explores transportation planning practices and strategies to decrease pedestrian fatalities and serious injuries in rural Tribal areas.

TTI’s Mission

TTI delivers practical, innovative and sustainable solutions to improve the movement of people, data and goods through research, education and technology transfer.



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