Title:	Improving the Use and Effectiveness of Smart Work Zone Deployments
The Problem:	Smart work zones have been shown to have traffic safety and mobility benefits when and where they are truly needed, properly designed, implemented, and maintained. Use of queue warning and other smart work zone deployments have become more common on TxDOT projects. TxDOT's Traffic Safety Division has developed basic guidance on when, where, and what smart work zone functionalities to deploy for a given set of conditions. Nevertheless, to date, there have been both positive and negative experiences as the technology migrates from research to implementation. Research is needed to determine why some deployments have been more effective than others, and how TxDOT's current processes for incorporating smart work zones into projects should be modified to improve how smart work zones are selected, procured, implemented and maintained during construction.
Technical Objectives:	This research will lead to a greater likelihood of properly designed, implemented, and maintained smart work zones on projects. To achieve these objectives, the work to be performed shall include: 1. Identify a sample of projects across the state where smart work zones have been deployed, both as research and as a part of the contractor's bid package. 2. Interview TxDOT, contractor, and smart work zone vendor staff to determine the decision-making process and timeline involved with the smart work zone deployments, challenges encountered, and perceptions about their effectiveness. 3. Where data is available, conduct operational and safety analyses to determine actual effects of the systems. 4. Review contract management documentation related to smart work zone deployments. 5. Identify potential improvements to TxDOT's project development and construction management workflows, bid specifications, and methods of payment to increase likelihood of successful smart work zones on future projects. Th he expectation of the project end product(s) shall attain a Technology Readiness Level of 8.
Anticipated Deliverables:	1. Technical memorandum for each task completed. 2. Monthly progress reports. 3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report; not a stand-alone deliverable. 4. Research report documenting the findings of the research, including recommended changes to one or more TxDOT manuals; i.e., Construction Contract Administration Manual, Project Development Process Manual, PS&E Preparation Manual, and Design Guidelines for Deployment of Work Zone Intelligent Transportation Systems (ITS). 5. Project Summary Report
Proposal Requirements:	1. Utilize the "Proj/Agre" and "PA_Form" templates located at the TxDOT RTI website. 2. Proposals will be considered non-responsive and will not be accepted for technical evaluation if they are not received by the deadline or do not meet the requirements stated in RTI's University Handbook, which is also located at the RTI website. 3. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation. 4. This project will be tracked during the life of the project using a Technology Readiness Level (TRL) scale. For more information about the use of a TRL, click.