Title:	Develop Guidelines for Work Zone Barrier Use on Freeways
The Problem:	TxDOT employs continuous barriers on long-term construction projects on many freeways. Although barriers provide clear safety benefits to protect workers from the traveling public, problems can be created by using long stretches of continuous barriers. Example problems are: (1) tractor-trailers have trouble navigating lane shifts when the barrier is up to the edge of the lane, causing them to jackknife and lead to fatal crashes; (2) refuge areas for stranded vehicles are unavailable due to lack of shoulder; (3) law enforcement operations are impeded; (4) vehicles are trapped with nowhere to go and EMS mobility is severely impeded in the event of a serious crash downstream; and (5) pooling water has been noted in some cases, again leading to fatal crashes. Research is need to develop guidelines for the use of work zone barriers on freeways in order to reduce fatal crashes, and reduce risk to the traveling public in the form of better EMS service and areas of vehicle refuge.
Technical Objectives:	The researchers shall address the following: 1. Review recent crashes and survey appropriate construction personnel to answer the following: a. When should barriers on both sides of the freeway be allowed (ADT, truck volumes, number of lanes)? b. When allowed, under what constraints should the barrier be used (minimum width of shoulder, when/how often should full shoulder areas be provided for stranded vehicles)? c. What are recommended design values like shifting taper values, length of refuge areas, and maximum exit ramp spacing? 2. Utilize software simulation as part of the research. 3. Observe existing TxDOT construction projects to further justify conclusions. 4. Develop final recommendations that weigh the benefits of providing shoulders and refuge areas against a perceived longer construction schedule cost. 5. Consult the trucking industry for feedback. The expectation of this project is that the end product will obtain a TRL level 8.
Desired 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. 4. Research report documenting the findings of the research, including a work zone standard sheet detailing all recommended geometrics and design parameters. 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.