Title:	Develop Standardized Operational Evaluation of Wrong-Way Driving Detection Technologies
The Problem:	Each year, approximately 240 wrong-way driving crashes occur on freeways in Texas; however, this statistic does not reveal the full extent of wrong-way maneuvers on freeways in Texas. Based on data from the TxDOT San Antonio District, about 450 wrong-way driving events are reported annually on San Antonio area freeways, resulting in over 30 crashes. To reduce the number of wrong-way maneuvers and associated crashes on freeways, several TxDOT districts have purchased and installed intelligent transportation systems (ITS) that can detect wrong-way drivers, alert the wrong-way drivers of their error, and notify the TxDOT traffic management center. While there are a number of these systems on the market, no standardized testing and head-to-head comparison information exists that would assist agencies find the optimal solution for the particular wrong-way driving problem they face. The system performance and limitations are not known until after the systems are purchased and activated in the field. This results in systems not functioning properly, high-false alarm rates, and increased workload for TxDOT staff. This research will create a standardized testing mechanism for implementation on Texas freeways, assess the performance of each system, and identify the most applicable wrong-way driving scenarios for each existing market solution. This research will also develop guidance regarding the implementation of technologies tested and provide information that could be used by TxDOT to develop wrong-way driving detection technology specifications.
Technical Objectives:	This project will create a standardized testing mechanism for implementation on Texas freeways, assess the performance of each system, and identify the most applicable wrong-way driving scenarios for each existing market solution. To achieve these objectives, the work to be performed shall include: 1. Review other state DOT agency testing procedures. 2. Develop an evaluation test plan to vet wrong-way driving detection technologies. 3. Install and test equipment in a closed-environment and in the field, as appropriate. 4. Document the test results. 5. Develop guidance regarding the implementation of technologies tested. 6. Develop content for a wrong-way driving detection technology specification. The expectation of the project end product(s) shall attain a Technology Readiness Level of 7.
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 recommendations to determine the most appropriate wrong-way driving detection technologies for certain design and operational considerations. 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.