Title:	Synthesis on Automated Pedestrian Data Collecting Techniques and Applications in Transportation Planning, Design and Management
The Problem:	Automated pedestrian data collection is limited compared with ubiquitous traffic data collection for motor vehicles. Improved pedestrian data sources will facilitate the progress of planning, designing, and operating pedestrian facilities to reduce the pedestrian-involved crashes. Techniques for vehicular traffic data collection are mature compared to pedestrian data collection, which primarily relies on manual observation and requires time intensive data processing. Novel technologies have recently emerged to automate the collection of pedestrian data and behavior through AI-enhanced video analytics, thermal identification and LIDAR sensors, which are reportedly successful in various scenarios. These technologies seem promising in automated pedestrian data collection, yet little is known on the potential risks and technical barriers. Given the importance of pedestrian data on traffic safety and operations, a synthesis for automated pedestrian sensing techniques would be beneficial for TxDOT to develop strategic plans concerning the pedestrians.
Technical Objectives:	This research will deliver a synthesis for automated pedestrian data collection technologies. The work to be performed shall include: 1. Conduct a state-of-art review on the available techniques and products in the market for automated pedestrian detection. 2. Conduct a survey on nationwide best practices of pedestrian-related data collection, analytics and applications to safety and operations. 3. Conduct interviews with the stakeholders who previously adopted such techniques and understand the lessons learned and their opinions of these technologies. The expectation of this project is that the end product will obtain a TRL level 2.
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 available pedestrian detection technologies and products, and survey and interview results. 5. Project Summary Report
Proposal Requirements:	1. The project duration shall not exceed 12 months. 2. The project budget shall not exceed $65,000. 3. Utilize the “Proj/Agre” and “PA_Form” templates located at the TxDOT RTI website. 4. 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. 5. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation. 6. 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.