

<b>Title:</b>	Considerations for “Super 3” Cross-Section in High-Volume Rural Corridors with Turning Traffic
<b>The Problem:</b>	<p>Super 2 highways have been demonstrated to be an effective treatment for rural highway corridors that experience high volumes with limited passing opportunities. As a result, they have been implemented on rural two-lane highways across the state. However, guidelines for Super 2 design advise that the designer should be mindful of volume generators within a Super 2 corridor, such as intersections and driveways, avoiding the use of passing lanes adjacent to those generators, if possible.</p> <p>In recent years, a number of rural two-lane highway corridors have experienced high volumes in conjunction with high numbers of turning movements at access points; e.g., corridors in energy exploration areas where the number of vehicles, especially trucks, has increased greatly and driveways and intersections are frequent and are serving much larger volumes than originally intended. In these corridors, providing periodic passing lanes could be useful for allowing faster through traffic to pass slower right-turning traffic, but passing lanes could also provide unintended consequences for traffic turning left from a passing lane, and the increased number of access points makes it difficult to avoid them in determining passing lane placement.</p> <p>A concept has been discussed on a separate TxDOT project that would be an alternative to the Super 2 cross-section. This alternative, preliminarily named Super 3, would provide turning lanes at key locations in addition to passing lanes on rural two-lane highways, better separating slower turning traffic from high-speed through traffic. This type of cross-section would help improve operations and safety on high-volume two-lane corridors that have frequent access points with many turning movements, but additional research is needed to determine the specific characteristics of this alternative that would produce the most favorable results.</p>
<b>Technical Objectives:</b>	<p>The researchers shall address the following:</p> <ol style="list-style-type: none"> <li>1. Use existing two-lane and Super 2 corridors for baseline conditions to simulate various combinations of Super 3 cross-sections to determine anticipated operational and safety results, and compare those to baseline conditions.</li> <li>2. Analyze the simulation results to develop a set of preliminary design guidelines, which would then be calibrated against Super 3 cross-sections currently under construction on one or more existing two-lane and Super 2 energy sector corridors in the Odessa District to determine the effective results from implementation of the design guidelines.</li> </ol> <p>The expectation of this project is that the end product will obtain a TRL level 6.</p>
<b>Desired Deliverables:</b>	<ol style="list-style-type: none"> <li>1. Technical memorandum for each task completed.</li> <li>2. Monthly progress reports.</li> <li>3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report.</li> <li>4. Research report documenting the findings of the research, including potential revisions to the TxDOT Roadway Design Manual.</li> <li>5. Project Summary Report.</li> </ol>
<b>Proposal Requirements:</b>	<ol style="list-style-type: none"> <li>1. Utilize the “Proj/Agre” and “PA_Form” templates located at the <a href="#">TxDOT RTI website</a>.</li> <li>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 <a href="#">University Handbook</a>, which is also located at the RTI website.</li> <li>3. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation.</li> <li>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 <a href="#">TRL</a>, click.</li> </ol>