

Title:	Development of a Performance Related Test for Designing Seal Coats
The Problem:	<p>TxDOT spends over \$300 million on seal coats every year to prolong the pavement service life of low volume roads, state highways, and interstate highways. TxDOT's seal coat program is overall very effective, but every year, there are some projects that fail prematurely, and often the reasons for these failures are obscure.</p> <p>Currently, TxDOT has laboratory tests and specifications for seal coat binders and aggregates, respectively, but no methods for evaluating the materials as a system to ensure they will work well together. What is needed is a set of laboratory tests to evaluate the proposed materials for any given project, and to try to identify poor combinations of materials before they are installed. TxDOT research project 0-6881, Recycled Engine Oil Bottoms and Polyphosphoric Acid in Texas Binders, did some initial work using the Cantabro test to evaluate potential performance of seal coats and obtained very promising results.</p> <p>Further development of this test, as well as others that may be found in literature, could be extremely beneficial, not only as a screening tool for evaluating seal coat material systems, but possibly also as a way of characterizing the relative ability of different types of asphalt to adhere to and retain aggregates in a seal.</p>
Technical Objectives:	<p>The researchers shall address the following:</p> <ol style="list-style-type: none"> 1. Review literature to identify potential laboratory tests for field performance of seal coats. 2. Evaluate the identified test or develop a new laboratory test for seal coats. 3. Establish test protocol for seal coats. 4. Conduct factorial experiments for different combinations of asphalt and aggregate types. 5. Validate the test protocol by conducting tests materials proposed for upcoming seal coat projects and monitor performance of the corresponding sections, in terms of stone loss, bleeding, and other performance characteristics. 6. Propose acceptance criteria for proposed seal coat designs. <p>The expectation of this project is that the end product will obtain a TRL level 8.</p>
Desired Deliverables:	<ol style="list-style-type: none"> 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 laboratory test protocols and suggested acceptability criteria for seal coats. 5. Project Summary Report.
Proposal Requirements:	<ol style="list-style-type: none"> 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.