Title:	Measuring Seal Coat Rate Field Adjustments
The Problem:	Seal Coats are extremely important to TxDOT's preventive maintenance program and integral to long-term pavement performance. A successful seal coat is one that seals the pavement structure from water intrusion and provides adequate surface texture over the design life. TxDOT has experienced problems with seal coat performance. Some of the problems encountered are flushing, bleeding, and rock loss, which leads to loss of surface texture. A new design procedure was developed through research project 0-6989, Update Seal Coat Application Rate Design Method, which included rate adjustment based on several factors. Many of the rate adjustment factors are based on visual observation. To minimize or remove the subjectivity and improve the design procedure, project 0-6989 recommended continuing to research the following: 1. The existing pavement texture, hardness and absorption effects on rates. 2. The effects of climate combined with traffic on rates. 3. The effects of traffic volume, loading, and speed related to rates. The impacts of these factors should be measured and then related to a rate adjustment. In addition, project 0-6989 recommended a draft test method to determine the average aggregate mat thickness. This is one the most important factors in rate design. Further research is needed to develop and validate methods to measure and estimate the average size of the aggregate.
Technical Objectives:	This research shall provide seal coat rate adjustments based on measured instead of subjective values. To achieve this objective, the work to be performed shall include: 1. Evaluate test methods used by TxDOT and national and international DOTs to measure texture, hardness and absorption of the existing pavement. Propose and validate test methods for seal coat application rates adjustments based off measured values. 2. Analyze the effects of climate combined with traffic on aggregate embedment depths and develop a correlation to adjust rates. 3. Evaluate the traffic volume, loading, and speed effect on aggregate embedment. Propose and validate application rate adjustments based on traffic volume, loading, and speed. 4. Propose and validate test methods to determine the aggregate mat thickness. 5. Develop recommendations for the following: a. Draft test methods to measure texture, hardness and absorption of the existing pavement including rate adjustments based on the measures. b. Rate adjustments based on traffic volume, loading, and speed. c. Rate adjustments based on climate conditions. d. Draft test method for the determination of the aggregate mat thickness. 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 for draft test methods and rate adjustments as outlined in the Technical Objectives. 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.