

KANSAS DOT RESEARCH PROJECTS QUARTERLY PROGRESS REPORT

Lead Agency (University or Contractor): Kansas DOT

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

KDOT Project Number RE-0738-01	Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31, 2017) <input type="checkbox"/> Quarter 2 (April 1- June 30,2017) <input type="checkbox"/> Quarter 3 (July 1 – Sept 30, 2017) <input checked="" type="checkbox"/> Quarter 4 (October – December 31, 2017)	
Project Title: Utilization of Laser Induced Breakdown Spectroscopy for Real-Time Quality Control Monitoring and Characterization of Aggregate Materials Used in Highway Construction using		
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Project Investigator: Warren Chesner Phone: 516-431-4031 E-mail: wchesner@chesnerengineering.com		
Lead Agency Project ID: RE-0738-01	Other Project ID (i.e., contract #):	Project Start Date: July 1, 2017
Original Project End Date: June 30, 2020	Current Project End Date: June 30, 2020	Number of Extensions: 0

Project schedule status:

On schedule On revised schedule Ahead of schedule Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Total Percentage of Work Completed
\$870,000.	\$161,988.50	18.6%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Complete This Quarter
\$870,000.	\$75,631.33	8.7%

Project Description:

The primary objectives of this research effort is to develop a near-real-time laser-scanning system to rapidly classify aggregates used in highway construction. The intent is to employ this classification process to

- Quantify specific engineering properties (e.g., acid insoluble residue, soundness, LA Loss, etc.)
- Assess whether an aggregate will pass or fail a defined engineering property test
- Identify and/or quantify the presence of deleterious materials (e.g., ASR, chert, shale, reactive aggregate)
- Determine the composition of blends in stockpiled aggregate
- Determine the source of an unknown aggregate

Six states are part of this TPF program. They include: KS, MD, OK, OH, NY and NM.

Each State is supplying aggregates that will be tested and evaluated to determine the efficacy of the technology; and an AASHTO standard of Practice will be prepared as part of the effort.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

During this period sampling and laser scanning analysis plans were developed with 4 of the 6 participating states (KS, NY, OH and MD). Additional planning is underway with OK and NM. Work continued on the development and fabrication of a new laser scanning system prototype to mitigate problems identified in the Phase 1 effort. This new prototype is referred to as SLT 2. Expanded modeling capability (for SLT 2 data analysis) is under development. Work continued to prepare the new laser scanning lab for sample storage and analysis. Over 20 new samples were received from NYSDOT during this quarter.

Anticipated work next quarter:

SLT 2 will be transported to the new laser scanning facility. Additional samples will be received from several states (NY, KS and MD). Laser scanning will be initiated,

Significant Results:

Four of the 6 participating States have completed sample collection and analysis plans SLT 2 is nearing completion and Will be activated in the following quarter.

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, with recommended solutions to those problems).

None at this time.