

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): _____Maryland Department of Transportation_____

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.

Transportation Pooled Fund Program Project # TPF-5(285)	Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: Standardizing Lightweight Deflectometer Measurements for QA and Modulus Determination in Unbound Bases and Subgrades		
Name of Project Manager(s): Rodney Wynn	Phone Number: 443-572-5043	E-Mail RWynn@sha.state.md.us
Lead Agency Project ID: TPF-5(285)	Other Project ID (i.e., contract #):	Project Start Date: January/15/2014
Original Project End Date: December 31, 2015	Current Project End Date: December 31, 2015	Number of Extensions: 0

Project schedule status:

On schedule
 On revised schedule
 Ahead of schedule
 Behind schedule

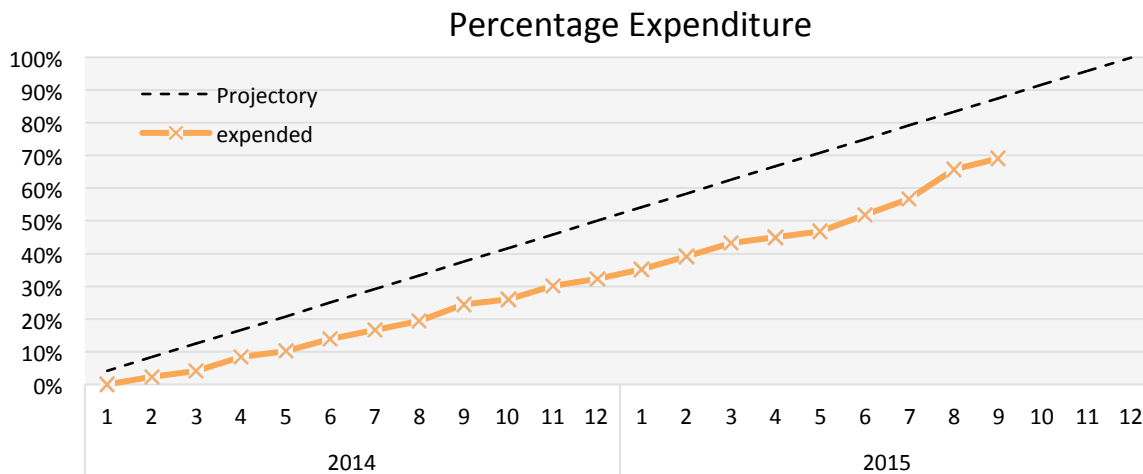
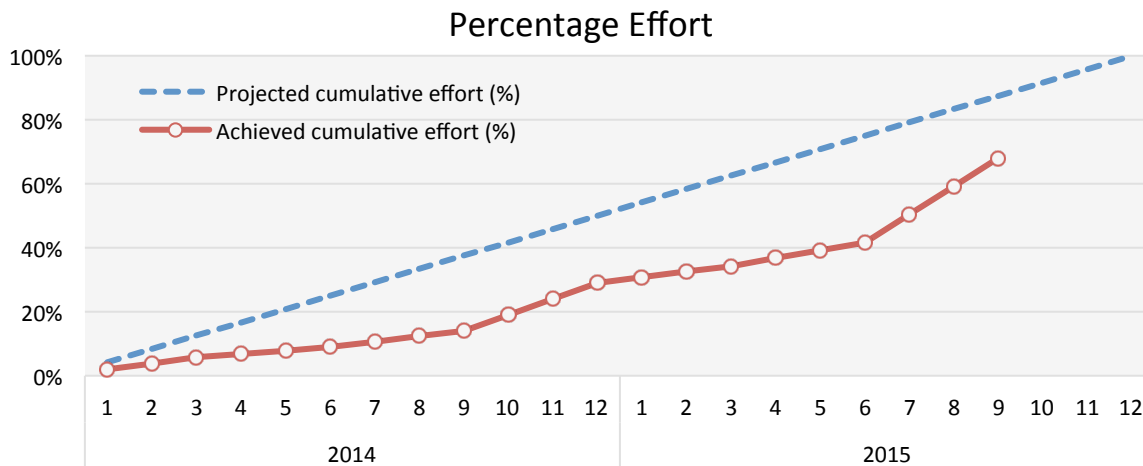
Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$371,984	\$257,002.64	69%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$64,200.00 17.3%	\$64,200.00	69%

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



The progress with respect to each Task is as followed:

Task 1: Literature Review. Percent completion of task: 100%

The personnel continue the review of the current and upcoming literature when deemed necessary.

Project personnel participating in these activities: Schwartz, Khosravifar, Afsharikia.

Task 2: Equipment Evaluation. Percent completion of task: 100%

Task 3: Model Refinement/Development. Percentage completion of task: 60%

The model development/refinement in Task 3 is in conjunction with the laboratory efforts in Task 4.

- Experimental models from laboratory resilient modulus testing and LWD testing on Proctor mold.
- Triaxial M_R tests is being performed according to AASHTO T-307.

- The heights on LWD testing on mold were reduced again to a minimum of 1 inch to decrease the induced stress, and associated permanent deformation.

Project personnel participating in these activities: Schwartz, Khosravifar, Afsharikia.

Task 4: Controlled Trials. Percentage completion of task: 100%

Laboratory LWD tests on Proctor Compacted Specimens: LWD testing on Proctor molds was completed using 3 to 5 different heights for the soils used in the construction of the test pits and is ongoing for the field projects.

Laboratory resilient modulus tests: Laboratory resilient modulus tests were performed at optimum moisture conditions as well as the as-constructed conditions in the pits for the three soils used in the construction of the test pits.

Controlled soil box tests: The construction of the test pits were the main focus during this quarter. The documentation of the data from this controlled large scale testing is ongoing. A summary of the construction is provided in Appendix A.

Project personnel participating in these activities: Schwartz, Khosravifar, Afsharikia.

Task 5: Field Validation. Percentage completion of task: 60%

Seven of the 9 planned field test sites were visited during this quarter. Appendix B provides a summary of the visited projects.

Task 6. Draft Test Specifications. Percentage completion of task: 0%

No progress was made on this task during the reporting period.

Task 7: Workshop and Final Report. Percentage completion of task: 20%

No progress was made on this task during the reporting period.

UMD personnel contact information:

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Anticipated work next quarter:

- The continued monitoring and documentation of the literature.
- Test pit data documentation
- Field data documentation
- Continuing on Resilient modulus testing (effect of stress states)
- Continuing on LWD proctor testing with new modifications using Zorn LWD, Dynatest LWD, and Olson LWD. (Moisture dependency)
- Modeling refinement to provide a comprehensive approach which combines stress, moisture dependency, effect of finite thickness and spatial variability in the field.

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, along with recommended solutions to those problems).

Construction of the test pits at the FHWA Turner-Fairbanks Highway Research Center and the field testing required more time than anticipated. These field activities essentially fully occupied the research team's efforts during this entire reporting period and are still ongoing. The team is only now returning its attention to laboratory testing and model refinement. As a consequence, additional time will be required to complete the project. A formal request for a no-cost extension will be prepared and submitted to the Host Agency.

Potential Implementation:

LWDs should be implemented more widely and this should be done using standardized testing procedures and data interpretation methods. LWDs are a tool for performance based construction quality assurance testing, which not only results in a better product, but also provides the quantitative measures critical to better understanding the connection between pavement design and long term pavement performance. As the benefits of performance based quality assurance testing become increasingly apparent, more public agencies and private consultants are expected to acquire these tools and implement standardized procedures during their use. The product of this research will allow state DOT construction specifications to be modified to include this new light weight deflectometer (LWD) option during construction quality assurance.