TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): _____Kansas DOT____

INSTRUCTIONS:			
Project Managers and/or research project investigation of the projects are active. Project task that is defined in the proposal; a perothe current status, including accomplishments aduring this period.	lease provide a project schedule statu centage completion of each task; a co	ns of the research activities tied to ncise discussion (2 or 3 sentences) of	
Transportation Pooled Fund Program Proje	ect # Transportation Pool	ed Fund Program - Report Period:	
TPF-5(311)	□Quarter 1 (January 1 – March 31)		
	□Quarter 2 (April 1 – June 30)		
	X□Quarter 3 (July 1	X□Quarter 3 (July 1 – September 30)	
	□Quarter 4 (October	4 – December 31)	
Project Title: Implementation of the AASHTO Mechanistic-Empirical Design Guide (AASHTO Pavement ME) for Pavement Rehabilitation Project Manager: David Behzadpour, P.E. Phone: (785) 291-3847 E-mail:David.Behzadpour@ks.gov			
Project Investigator: Mustaque Hossain Phone: (785) 532-1576 E-mail:mustak@ksu.edu			
Lead Agency Project ID:KS	Other Project ID (i.e., contract #): RE-0678-01; C 2061	Project Start Date: 12/01/14	
Original Project End Date: Multi-year project	Current Project End Date: 12/31/21	Number of Extensions: 3 (1 cost extension)	
Project schedule status: X□ 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	
\$1,555,000	\$1,165,206.17	Completed 83%	
Quarterly Project Statistics:			
Total Project Expenses	Total Amount of Funds	Percentage of Work Completed	
This Quarter \$16,150.23	Expended This Quarter \$16,150.23	This Quarter 3%	
<mark>\$10,130.43</mark>	Φ10,130,43	J/U	

Project Description:

The Kansas Department of Transportation (KDOT) and the New York State Department of Transportation (NYSDOT) have been using Chapter 5 of the 1993 AASHTO Design Guide for rehabilitation design. AASHTO has adopted the pavement rehabilitation design procedures developed under the NCHRP 1-37A project for flexible and rigid pavement structures. These new procedures are based on mechanistic-empirical principles and they replace the earlier empirical procedures from the 1993 AASHTO Design Guide. The new procedures are incorporated in the AASHTOWare Pavement ME Design software.

The main objective of this research project is to conduct the local calibration of the AASHTOWare Pavement ME design procedure for pavement rehabilitation in Kansas and New York state. The results of the research will enable KDOT and NYSDOT to expedite the use of this new tool for the design of rehabilitated pavements. The results will also provide KDOT and NYSDOT with the necessary input values to design rehabilitated pavements using the mechanistic-empirical methods.

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

In this quarter, some laboratory tests have been done. The new models and material testing requirements developed under several NCHRP projects have also been reviewed; the models and the associated material testing protocols for top-down cracking were released in July 2020 with AASHTOWare Pavement ME version 2.6. Therefore, calibration coefficients for the cracking, rutting and IRI models are also new. The focus has been on the calibration of the models for the design of new flexible pavement structures. However, the calibration of the models for HMA overlay over distressed flexible pavements will continue. The new laboratory testing of representative asphalt concrete mixes used in the surface layer has continued, but a limited number of samples are available. The slow progress was due to absence of a full-time graduate research assistant (GRA) at KSU on this project. However, progress will continue with a part-time GRA. A new GRA is expected to start in January 2021.

Anticipated work next quarter:

Laboratory tests will continue on materials from one project. Some materials from the state of New York have been received. The subcontractor will continue the development of the software for FWD data processing for the NYSDOT part of the contract. The collection of data necessary for the calibration and the analysis of the traffic data will also continue. The literature review on the calibration activities conducted by other states and countries, and the recently developed models to be incorporates into the AASHTOWare Pavement ME will continue. Laboratory testing of materials will continue. he calibration efforts will continue considering the new version of the software (2.6).

Significant Results:

This research work aims to contribute to the implementation of the AASHTOWare Pavement ME design software for rehabilitation design in Kansas and New York by performing the local calibration first.

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).

The AASHTOWare Pavement ME has been issued in a new version (2.6) in July 2020. It contains new models for cracking in flexible pavements, new material parameters and new calibration coefficients.