TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): _____**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.

Transportation Pooled Fund Program Project # **TPF-5(311)**	**Transportation Pooled Fund Program - Report Period:** ☐Quarter 1 (January 1 – March 31) ☐Quarter 2 (April 1 – June 30) 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:** **12/31/2022**	**Number of Extensions:** **4 (1 cost extension)**

Project schedule status:

☐ On schedule   X☐ 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
$1,555,000	**$1,147,179.56**	90%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
$25,355.48	**$25,355.48**	3%

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, laboratory tests from all materials from NYSDOT 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 August 2021 with AASHTOWare Pavement ME version 2.6.1. Therefore, calibration coefficients for the cracking, rutting and IRI models are also new. Calibration coefficients for the cracking, rutting and IRI models of version 2.5 were developed. The calibration of the models for HMA overlay over distressed flexible pavements will be revisited. The preparation of training materials has continued.

Anticipated work next quarter:
Laboratory tests will continue on materials from other projects. 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 calibration efforts for the new version of the software (2.6) will continue, with focus on the models for HMA overlays over distressed flexible pavements. Laboratory testing of materials will continue. The preparation of training materials will continue.

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.

The AASHTOWare Pavement ME has been issued in a new version (2.6.1) in August 2021. In comparison to version 2.5, it contains new models for cracking in flexible pavements, new material parameters and new calibration coefficients. The Covid-19 pandemic has delayed the material testing program.