TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Louisiana Transportation Research Center (LTRC)

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 # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* TPF-5(242), Phase III		**Transportation Pooled Fund Program - Report Period:** ☑ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☐ Quarter 3 (July 1 – September 30) ☐ Quarter 4 (October 1 – December 31)
Project Title: Prep-ME Software Implementation and Enhancement		
Name of Project Manager(s): Doc Zhang	**Phone Number:** 225-767-9162	**E-Mail** Doc.Zhang@LA.GOV
Lead Agency Project ID:	**Other Project ID (i.e., contract #):**	**Project Start Date:** August 1 2015
Original Project End Date: April 30 2017	**Current Project End Date:** June 30 2017 (Under Revision)	**Number of Extensions:** 1 (Proposed)

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
$111,953 (revised)	$96,125	86%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$96,125 and 3.6%	$3,478	87%

Project Description:

Pavement ME Design (previously MEPDG/DARWin-ME) is a significant advancement in pavement design, but requires much more inputs from various sources. Through the transportation pooled fund study TPF-5(242), the Phase II final deliverable Prep-ME software is capable of pre-processing, importing, checking the quality of raw Weigh-In-Motion (WIM) traffic data, and generating three levels of traffic data inputs with in-built clustering analysis methods for Pavement ME Design. This software complies with FHWA Traffic Monitoring Guide (TMG) and TMAS for quality assurance and quality control (QA/QC), and can be used by state highway agencies for the QA/QC of traffic data collection, analysis of truck loading data, and preparation of input for AASHTO Pavement ME software.

The objective of proposed Phase III project is to assist participating state DOTs on the full implementation of Prep-ME software for traffic data collection and Pavement ME Design and to deliver new generation of Prep-ME software with enhanced and customized features for each individual state. The proposed tasks to be performed in Phase III include:

- Task 1 - Provide On-Site and Webinar Training for Participating States,
- Task 2 - Develop Portable Version of Prep-ME for Field Data Collection and WIM Calibration,
- Task 3 - Enhance Existing Traffic Module in Prep-ME,
- Task 4 - Provide Technical Support to Meet State Needs.

Upon completion of this project, participating state DOTs will have a software and database tool set used not only by pavement design engineers to prepare input for Pavement ME Design, but also traffic data collection engineers to collect better traffic data and manage those data for other applications.

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

The on-siting training for LaDOTD was provided in early February 2017. It was found that the axle loading from Prep-ME was shifted by one load bin and the bug was corrected in the newest version of the software. In particular, the team has worked closely with LaDOTD, MIDOT, and KYTC on technical issues and questions within this quarter.

Anticipated work next quarter:

For next quarter, the primary tasks include: (1) contacting the participating states regarding the arrangement of web-based online training and delivering the webinar training. State WIM data will be requested and used for the training to demonstrate the software functionality and how the software can be utilized by pavement design and traffic data collection engineers to improve operation productivities. Desired enhancements of software capabilities will be discussed during the on-site and web-based training and software will be improved and customized based on the comments; (2) completing the draft final report of this project for submission to LTRC/LaDOTD for comments and feedback, and finalizing the final report with comments fully addressed; (3) continuing improving the Prep-ME software on a need basis to help state DOTs deploying the Prep-ME software. Any special needs arose from participating states during the implementation process will be addressed by the research team.

Significant Results:

(1) Software Training
The on-site Prep-ME training for LTRC/LaDOTD was provided on 02/01/2017. The capabilities of Prep-ME were demonstrated using state specific WIM data sets. The potential data sources, level of input, and the corresponding tool for data preparation of each traffic input parameter required in Pavement ME Design were identified and discussed during the meeting.

Thus far, six states (NV, KY, NC, MI, WI, LA) have received on-site training. Per the contract, this task is completed.

(2) Software Enhancement
a) Bug Fix: Michigan suggested that the axle loading spectra from the Prep-ME software could be shifted by one load bin. The research team checked the source codes and confirmed this error. This bug has been fixed in the Prep-ME import module. No SQL table is revised or added. Therefore, users can still use their existing database files, however, it is recommended state agencies should re-import their WIM data to the software database for accurate load spectra data.
(b) XML file format updates: it was found that the XML file format for climate input had been changed some time in 2016. Accordingly the Prep-ME software has been updated to generate XML files that can be read by the most recent Pavement ME Design software.
(c) Minor correction: Based on feedback from MIDOT, the descriptive texts for both manually acceptance and rejection in the Weight &Classification Check Module have been changed to "Manually Accepted Using Local Knowledge".

(3) The team continues providing technical support to assist state DOTs deploying the Prep-ME software on a need basis

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).

Nevada Department of Transportation (NDOT) joined the TPF-5(242) study approximately six-month after the project was awarded, and contributed an additional $20,000 to the pooled-fund. The team is requesting for $20,000 increase of the contract cost and a two-month extension of the contract time to June 30, 2017 so that the project deliverables and technical support are provided to NVDOT and other participating states for the deployment of the Prep-ME software. In addition, the participating states can continue receiving support on a need basis aiming to help state DOTs implementing the tool for pavement design, traffic data collection and analysis.

Potential Implementation:

No new information on implementation at this time, other than what has been reported on the application of Prep-ME at individual states.