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)		**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: Traffic and Data Preparation for AASHTO MEPDG Analysis and Design		
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:** Sept 1 2011
Original Project End Date: Aug 31 2014	**Current Project End Date:** Aug 31 2014	**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
$683,334	About $683,000	100%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$43,000 and 6.5%	$43,000	100%

Project Description:

Background:
The Mechanistic Empirical Pavement Design Guide (MEPDG) is a significant advancement in pavement design, but requires significantly more inputs from designers. Many data sets need to be pre-processed before their use in the MEPDG procedure, such as Weigh-In-Motion (WIM) traffic data.

Under contract with the Federal Highway Administration (FHWA) and the Office of Pavement Technology, and co-sponsored by the Arkansas Highway Department, the University of Arkansas recently developed a software program called Prep-ME with comprehensive database features to store and process climate, traffic and materials data and to: (1) identify all the required inputs and analysis parameters; (2) develop algorithms and procedures to locate the available data sets, pre-process raw data, check data quality, and import the traffic and other data sets to the designed database tables, including conducting quality checks on both weight and classification WIM data based on LTPP and FHWA methods; (3) implement database algorithms for uploading, data checking, and generating the required data files for the MEPDG software; and, (4) develop a user friendly software interface, Prep-ME, to generate the required input files for the MEPDG software.

Objectives:
The objective of the Prep-ME software is to assist state DOTs in the data preparation and improve the management and workflow of the MEPDG input data to make the MEPDG software more accessible. Additionally, it can be used as a critical tool for calibrating and implementing the MEPDG as well.

Scope of Work:
In order to make Prep-ME full production software assist states use the MEPDG, the software and services need to be

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

This quarter (July - September 2014) is the 13th quarter of the project, which is the last quarter of Phase II. The major work in this quarter is the final delivery of the Prep-ME software and updated User's Manual, and the final project report. Specifically the following tasks have been completed:

(1) A preliminary function to implement the LTPP TPF-5(004) loading group method has been developed, which allow users to export LTPP TPF-5(004) study results in three tiers of loading groups: Tier 1 - Global, Tier 2 - Typical, and User-defined.

(2) The team has made many improvements to Prep-ME based on feedback from participating states. A final version of Prep-ME 3.0 with all new GUIs for Phase II of this pooled fund study has been delivered to the participating states along with an updated User's Manual.

(3) The OSU team has disseminated the final report o the participating states. Several states and FHWA engineers provided comments, which have been carefully studied by the OSU team and a revised final report has been submitted to LTRC for publication.

Anticipated work next quarter:

This is the last quarter of Phase II of this pooled-fund study project. The Prep-ME 3.0 software has included all the functionalities that are required in the contract. Prep-ME 3.0 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.

If the Prep-ME software is utilized at its capacity, this tool can substantially reduce state DOT's efforts in calibrating and implementing Pavement ME Design. However, the implementation and testing of Prep-ME remains at a minimum level. Few state agencies has implemented the Prep-ME software for production. Most state DOTs are planning to use Prep-ME software for ME based pavement design and the local calibration of Pavement ME Design in the near future. As a result, the software has not been fully tested and the capabilities of the software not been investigated in-depth. Therefore, the OSU team has proposed Phase III of this project. The objective of Phase III is to assist participating state DOTs on the full implementation of Prep-ME software for Pavement ME Design and to deliver new generation of Prep-ME software with enhanced and customized features for each individual state. The proposed tasks include:

- Task 1 Provide Technical Support and On-Site Training to Assist State DOTs Implementing Prep-ME
- Task 2 Enhance Traffic Module to Meet Various Needs
- Task 3 Utilize New Module to Facilitate Local Calibration
- Task 4 Develop FWD Module for Pavement ME based Rehabilitation Design
- Task 5 Develop Statewide Materials Library for Pavement ME Design
- Task 6 Integrate Existing and On-going Climate Research and Data in Prep-ME

The Phase III proposal has been disseminated to participating states for comments.

Significant Results:

The final report and the Prep-ME software packages along with updated User's Manual have been delivered to LTRC, the leading agency of this pooled-fund study, which have been disseminated to each individual state. Two iterations of comments were provided by state agencies and FHWA and corresponding revisions were made. The revised final report was ready to be published.

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).

There is no circumstance affecting the project or budget at this time.

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.