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 $113,190	28%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$113,190 and 8%	$45,000	28%

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 (Apr-Jun 2012) is the 4th quarter of the project and 2nd quarter in the FY.

In addition to Dr. Vu Nguyen joining the team early in 2012, Dr. Joshua Q. Li joined the OSU team in April 2012. Both researchers were heavily involved in the design and software development of the original tool (predecessor to Prep-ME). The team currently has one GA and several hourly students working on DARWin-ME related projects, including this project.

In this quarter the research team made progresses in the following activities as identified in the previous quarterly report:

1. Operation of DARWin-ME with the purchased license with SQL Server Express software as the database engine
2. Document differences between data structures in MEDPG and DARWin-ME
3. Initial attempt to modify Prep-ME database structure to be compatible with SQL Server Express and DARWin-ME
4. Document efforts necessary to modify Prep-ME to make it fully compatible with DARWin-ME and SQL Serve Express
5. Demonstrate the initial integration of Prep-ME and DARWin-ME and document any challenges in this effort.

The purchasing cost of the DARWin-ME annual license for this FY is being conducted through a different project at OSU. It is possible that in June 2013, the pooled-fund project may need to be modified to continue the license.

Anticipated work next quarter:

There is a face-to-face meeting among representatives from the participating states, FHWA, and the OSU team in September 2012 in Detroit. It is anticipated that before the meeting, the OSU team will distribute a fully working Prep-ME in August 2012 that is compatible with the DARWin-ME so that users should be able to use Prep-ME to prepare most if not all of the input data files for DARWin-ME analysis. This release will be stable enough for users to test and possibly use fro production runs. But the purpose of the release is to gather feedback from users to further improve the implemented features and start the coding for new features.

Significant Results:

The research team has completed on Task 1: Improve Efficiency of Prep-ME, and has largely completed Task 2: Improve Functionality of Prep-ME, subject to additional requirements imposed by the participating states during the Sept 2012 meeting in Detriot.

In order to ensure a smooth transition from MEPDG to DARWin ME, current features of Prep-ME software are made to be compatible with DARWin-ME. The current edition of DARWin-ME allows user to import all of the needed data for the traffic files within the software user interface under two formats, text and XML formats. Therefore, a new function which converts all traffic files from text format to XML format is made. In this function, 11 traffic files will be generated under XML format.

In addition, some basic functions which will be used to work with SQL database and output of DARWin-ME are developed. The following is a list of these functions which are being developed by the OSU team.

a. Excel to SQL: put data from Excel spreadsheet into SQL database;
b. SQL to Excel: export data from SQL database to Excel spreadsheet;
c. Access to SQL: transfer data from Access to SQL database;
d. SQL to Access: transfer data from SQL to Access database;
e. Access to Excel: export data from Access database to Excel spreadsheet;
f. Excel to Access: put data from Excel spreadsheet into Access database;
g. Text to XML: convert text format to XML format;
h. XML to Text: convert XML format to text format;

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 a this time.

Potential Implementation:

No new information on implementation at this time