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: June 30 2013	**Current Project End Date:** June 30 2013	**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
$366,666	About $20,000	11%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$20,000 and 3%	$10,000	11%

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 (Oct - Dec 2011) is the second quarter of the project.

The graduate assistant (MS) started work along with the project start, and has learned the basics of MEPDG and DARWin-ME. Two notebook computers arrived in October 2011 for this project. One DARWin-ME license was purchased in Dec 2011 due to AASHTO processing delays. A second DARWin-ME license is being purchased in Jan 2012 so that both notebook computers will have DARWin-ME installed. The total cost of $5000 DARWin-ME licensing fee in the approved budget is used to cover both licenses as the period of each license is about 50% of a full 12-month license (Jan 2012 to June 2012).

Anticipated work next quarter:

It is anticipated that in the quarter of Jan to Mar 2012, the research team will be able to demonstrate the integration of Prep-ME for DARWin-ME in data preparation with the following milestones:

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.

In particular, Task 1 will be completed in this quarter and progress on Task 2 will be demonstrated.

Dr. Vu Nguyen has joined the OSU research team on Jan 1 2012. At this time, Dr. Nguyen and the MS student Mr. Liu are expected to assist the PI to make the project on schedule.

Significant Results:

The research team has focused on Task 1: Improve Efficiency of Prep-ME, and has initiated Task 2: Improve Functionality of Prep-ME.

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.

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;

The team has established substantial knowledge of the inner workings of the database and files used in the DARWin-ME

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