TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Louisiana Department of Transportation & Development

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
$366,666	About $50,000	15%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$50,000 and 7%	$30,000	19%

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 (Jan-Mar 2012) is the third quarter of the project.

This is the first quarter that Dr. Vu Nguyen started his post-doc position at OSU. Dr. Nguyen is currently 100% paid with this pooled-fund. He was the original developer of the Prep-ME software and has been making substantial revision of the software to be compatible with DARWin-ME. The graduate assistant is learning and helping Dr. Nguyen relating to DARWin-ME and Prep-ME.

In particular, based on planning of the previous quarter, the following activities were carried out or are being carried out:

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 is completed in this quarter and progress on Task 2 is being made.

The purchasing cost of the two DARWin-ME annual licenses is shifted to another OSU project. Therefore, the two DARWin-ME annual licenses are used for this project at no cost to the pooled-fund. The licenses will expire on June 30 2012. There will be future costs in buying the DARWin-ME annual licenses with this project fund.

Anticipated work next quarter:

It is anticipated that in the quarter of April to June 2012, the research team will be able to demonstrate the newly re-made Prep-ME and the integration of Prep-ME for DARWin-ME in data preparation. In particular, in late April 2012, the project team will participate in a web session to demonstrate the new Prep-ME and its data integration with DARWin-ME to project participants.

Dr. Qiang (Josh) Li will join the research team in mid-April 2012 as a contributor in Prep-ME and DARWin-ME integration and quality control. Dr. Li will be a research assistant professor initially with 50% time dedicated to this pooled-fund project.

Significant Results:

The research team has completed 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