

TRANSPORTATION POOLED FUND PROGRAM

Quarterly Report

PROJECT TITLE: Traffic and Data Preparation for AASHTO M-E PDG Analysis and Design, TPF-5(242)

OBJECTIVES: The DARWIN-ME 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. The University of Arkansas recently developed a software program called Prep-ME with comprehensive database features to store and process climate, traffic, material, etc. To make Prep-ME full-production software to help states use DARWIN-ME, the software and service need to be expanded to:

1. Recognize the differences in loading patterns or traffic groups and estimate the full axle load spectrum data occurring under different conditions based on large amount of WIM data, such as the data of LTPP.
2. Develop advanced algorithms to examine raw WIM data for quality and conduct data repair operations to salvage usable information in WIM data for DARWIN-ME and other purposes. A portable version of quality checks for traffic data can be available to field data collection crew.
3. Add more functions based on the consensus of participating states.
4. Customize Prep-ME for participating states
5. Prepare and conduct training for the personnel of participating states.
6. Provide participating states technical support throughout the three-year period

There are a number of other features in Prep-ME that may be useful to any highway agency, including (1) geo-referencing of design sites, weather stations, WIM, and water table observations, (2) populating materials inputs for DARWIN-ME, (3) preparing other DARWIN-ME inputs. It is envisioned that through this pooled-fund study, a possible nationwide platform for data preparation of DARWIN-ME can be established with guideline and supports provided to individual states for implementation.

PERIOD COVERED: April 2011 to June 2011

PARTICIPATING AGENCIES:

Departments of Transportation from the Following States: Hawaii, Louisiana, North Carolina, Maryland, New Hampshire, Wisconsin. Contract is Administered through by Louisiana DOTD.

<p>PROJECT MANAGER: Zhongjie “Doc” Zhang</p> <p>LEAD AGENCY: Louisiana DOTD</p> <p>PRINCIPAL INVESTIGATOR:</p>	<p>SP&R PROJECT NO: TPF-5(242)</p>	<p>PROJECT IS: ____ Planning</p> <p> <u>XX</u> Research & Development</p>
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<p>ANNUAL BUDGET: \$100,000</p>	<p>PROJECT EXPENDITURES TO DATE: \$ 0</p>
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WORK COMPLETED:
Based on the input from participant states at the March kick-off meeting, a research proposal submitted by Dr. Kelvin C.P. Wang of Oklahoma state University was prepared and distributed among the participant states for review and approval. It is anticipated that the research proposal will be approved by the end of July and the planned research work for the pooled fund study TPF-5(242), **Traffic and Data Preparation for AASHTO MEPDG Analysis and Design**, will start August 1, 2011.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:
Conduct the research activities as planned in the research proposal.

STATUS AND COMPLETION DATE: