

## TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT):           IOWA DOT          

**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.*

<b>Transportation Pooled Fund Program Project #</b> TPF-5(300)	<b>Transportation Pooled Fund Program - Report Period:</b> <input checked="" type="checkbox"/> Quarter 1 (January 1 – March 31, 2017) <input type="checkbox"/> Quarter 2 (April 1 – June 30, 2017) <input type="checkbox"/> Quarter 3 (July 1 – September 30, 2017) <input type="checkbox"/> Quarter 4 (October 1 – December 31, 2017)	
<b>Project Title:</b> Performance and Load Response of Rigid Pavement Systems		
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<b>Lead Agency Project ID:</b>	<b>Other Project ID (i.e., contract #):</b> Addendum 504	<b>Project Start Date:</b> 5/29/14
<b>Original Project End Date:</b> 5/31/2017	<b>Current Project End Date:</b> 5/31/2019	<b>Number of Extensions:</b> PFS

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	Total Percentage of Work Completed
\$1,263,917.00	\$612,698.24	52%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$82,351.00	\$82,351.00	5%

**Project Description:**

The modern approach to highway design is embodied in the Mechanistic-Empirical Pavement Design Guide (MEPDG), which incorporates models embedded in dedicated software, such as AASHTOWare Pavement ME Design, to predict pavement performance in greater detail than before. Full implementation of the MEPDG by state departments of transportation requires customizing or calibrating the software to state and local conditions, which in turn requires collecting data on climate, material properties, load response, and pavement performance.

The MEPDG software uses these data inputs to more accurately simulate the load response of pavements and long-term pavement performance. Local calibration of the software involves comparing long-term performance simulation results to actual performance data at local sites if possible or from matching pavements in the LTPP database. New York is one of the states that have previously instrumented test pavement sections to acquire local data to improve calibration of the MEPDG software. The installed sensors are still functioning to an extent that permits collection of additional useful data. This project has these objectives:

- Collecting load response and performance data and environmental monitoring at selected test pavements in New York for four years.
- Installing new instrumented sections as needed for a better understanding of rigid pavement response, including monitoring for the duration of the project.
- Determining the impact of a base on long-term performance of rigid pavement utilizing the data acquired in fulfilling the first two objectives and other nationally available data on the topic.

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

- The MEPDG pavement design catalog report was edited with particular focus on the first stage of the report, to be delivered in April.
- Information was gathered to create an example that demonstrated the use of the overlay design software via an Excel spreadsheet that implements the AASHTO 93 design method. However this spreadsheet does not operate in versions of Excel newer than 2007.
- The research team continued exploring the feasibility of designing overlays in New York using the MEPDG program and an alternative program being developed in study TPF-5(269) “Development of an Improved Design Procedure for Unbonded Concrete Overlays”.
- The research team gathered requested information on the unbonded overlay designs used for the I-86 Olean project.
- The research team contacted NYSDOT to coordinate plans for upcoming site visits in New York planned for next quarter.
- There were two conference calls with the TAC and Iowa State University on February 13 and March 28

**Anticipated work next quarter:**

- Complete draft report on the JPCP design catalog with the new design tables for NYSDOT regions. The report will be delivered in three stages at the end of April, May, and June.
- A one week trip to the I90 and I490 projects. During those site visits FWD data will be collected in addition to the sensor data and distress surveys. If possible, dynamic truck runs will be conducted on the I90 project.

- Collect core specimens from unbonded overlay on I86 in Olean to examine condition and determine actual in-field thickness of bondbreaker.
- Begin analysis of FWD data once they have been provided to the research team
- NYSDOT personnel have received the keys for the pull box on Route 9A in New York City. As weather permits, a trip will be scheduled to pull wires and install the data acquisition system.
- Modify unbonded overlay design spreadsheet to run on versions of Excel newer than 2007.

**Significant Results:**

**Circumstances affecting project or budget (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).**