

## 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> Quarter 1 (January 1 – March 31, 2017) Quarter 2 (April 1 – June 30, 2017) Quarter 3 (July 1 – September 30, 2017) <input checked="" 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	\$887,128.83	70%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$105,440.12	\$105,440.12	3%

**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.):**

- Completed Part 3 of draft report on the JPCP design catalog, delivered and received comments on all parts from TAC.
- Meeting with full TAC at NYSDOT HQ in Albany October 24-25 to discuss status of various test pavements and the JPCP Design Catalog.
- Revised deliverables schedule November 28, 2017
- An example overlay design using an Excel spreadsheet that implements the AASHTO 93 design method was provided to NYDOT for evaluation.
- The research team continues 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 contacted NYSDOT to coordinate plans for upcoming site visits in New York planned for next quarter.
- A conference call scheduled for November was cancelled; the rescheduled conference call was held on December 14, 2017.
- The newest version of the AASHTOWare program was installed and the calibration and material database created for NYDOT was transferred.

**Anticipated work next quarter:**

- Work with the unbonded overlay design program when it is obtained from the other Pooled Fund Study TPF-5(269) “Development of an Improved Design Procedure for Unbonded Concrete

Overlays". Work on this task has been delayed since TPF-5(269) is in hiatus due to change of the PI's location.

- Conduct sensitivity analysis on several parameters as requested by NYDOT.
- Complete draft reports for the instrumentation and data gathering portion of the project.
- Work with NYDOT to schedule a meeting in Albany NY to give NYDOT personnel a short course on FWD data analysis
- Coordinate with NYDOT and TAC group to receive and test concrete sample for CTE measurement.
- Schedule a one-week trip to the instrumented sites on I86, I90, and I490 to decommission the monitoring program.

#### **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).**

- Some project changes were discussed on the Dec. 14 call, such as cutting year five of the data collection and shifting the funds to MEPDG training.