

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.

Transportation Pooled Fund Program Project # TPF-5(300)	Transportation Pooled Fund Program - Report Period: <input checked="" type="checkbox"/> Quarter 1 (January 1 – March 31, 2018) <input type="checkbox"/> Quarter 2 (April 1 – June 30, 2018) <input type="checkbox"/> Quarter 3 (July 1 – September 30, 2018) <input type="checkbox"/> Quarter 4 (October 1 – December 31, 2018)	
Project Title: Performance and Load Response of Rigid Pavement Systems		
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Lead Agency Project ID:	Other Project ID (i.e., contract #): Addendum 504	Project Start Date: 5/29/14
Original Project End Date: 5/31/2017	Current Project End Date: 5/31/2019	Number of Extensions: 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
\$1,467,902.00	\$1,058,470.77	75%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$171,341.94	\$171,341.94	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.):

- Conducted sensitivity analysis as requested by NYDOT of AASHTOWare using several parameters: maximum transverse cracking level, coefficient of thermal expansion, slab length, IRI criterion, and reliability.
- Phone conference with TAC was held on March 20 where the sensitivity analysis was presented and discussed, along with other project matters. Notes from that conference call were submitted to the TAC members.
- An additional sensitivity analysis of AASHTOWare using subgrade resilient modulus values was conducted.
- Began arranging scheduling of site decommissioning visits.
- Provided NYDOT with AASHTO93 version of software in December.

Anticipated work next quarter: New York has requested to terminate the contract without year 5 (data collection will end year 4) and discussions are ongoing regarding the modified completion date and budget. This will be resolved and revised contracts will be formalized.

- Complete design tables with parameters to be selected by NYDOT (transverse cracking (10%, 15%, 20%), IRI (170 in/mi or 220 in/mi), reliability (90% or 95%)), and a decision made on how to handle coefficient of thermal expansion based on aggregate type. The research team is awaiting a decision on parameters from NYDOT. (This has subsequently been resolved.)
- Complete draft report for the instrumentation and data gathering portion of the project (Part 1)
- Complete draft report for covering the literature review and JPCP Design catalog (Part 2).
- Work with NYDOT to schedule a meeting in Albany NY to give NYDOT personnel a short course on FWD data analysis. Still awaiting for possible dates from New York.
- Schedule and travel to the instrumented sites on I86, I90, Rt9A, and I490 to decommission the monitoring systems.

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).

- The sensitivity analysis indicated different areas of eastern New York use several types of aggregate, which requires additional design tables to be created for the design catalog. We are waiting for these data (particularly coefficient of thermal expansion) from NYDOT.
- New York has requested to terminate the contract without year 5 (data collection will end year 4). Discussions are ongoing regarding the modified completion date and budget. This will be resolved and revised contracts will be formalized during the next month.