

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(219)		Transportation Pooled Fund Program - Report Period: Quarter 1 (January 1 – March 31, 2017) Quarter 2 (April 1 – June 30, 2017) Quarter 3 (July 1 – September 30, 2017) XQuarter 4 (October 1 – December 31, 2017)	
Project Title: Development of a Structural Health Monitoring System to Evaluate Structural Capacity and Estimate Remaining Service Life for Bridges			
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Lead Agency Project ID: RT 329	Other Project ID (i.e., contract #): Addendum 367	Project Start Date: 3/01/10	
Original Project End Date: 2/28/15	Current Project End Date: 6/30/18	Number of Extensions:	

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
\$869,911.00	\$700,086.38	79%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$42,643.98		8%

Project Description:

- Literature Review: Damage detection and load rating algorithms
- Literature Review: Techniques for assessing remaining service life
- Interim Report
- Development of real-time, strain-based algorithm(s)
- Development of real-time, vibration-based algorithm(s)
- Development of real-time, fused-data algorithm(s)
- Compare and contrast result(s) from Tasks 4 through 6
- Interim Report
- Development of Statistical Models to Extrapolate Time-dependent Load Ratings
- Development of Structural Models to Quantify Extrapolations
- Final Report

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

In this quarter, efforts have continued on both the deterioration modelling as well as capacity estimation. During the last TAC meeting, the capacity estimation was a topic of much discussion and as a result we have added one additional laboratory specimen. As directed by the TAC, much effort this quarter has been focused on fabricating the next capacity specimen. The deck was cast this quarter and testing of the specimen is anticipated in January. The final capacity specimen will be fabricated with a low strength and low stiffness deck as discussed.

Anticipated work next quarter:

We will be continue working on our remaining life models and in the development of the capacity estimation models. It is noteworthy to mention that much interest in this was expressed at the 2018 TRB meeting.

Significant Results:

A life cycle cost analysis was done and documented to justify the cost of SHM instrumentation.

Circumstance 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).

None.