

## 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(219)		<b>Transportation Pooled Fund Program - Report Period:</b> <input checked="" type="checkbox"/> Quarter 1 (January 1 – March 31, 2014) <input type="checkbox"/> Quarter 2 (April 1 – June 30, 2014) <input type="checkbox"/> Quarter 3 (July 1 – September 30, 2014) <input type="checkbox"/> Quarter 4 (October 4 – December 31, 2014)	
<b>Project Title:</b> Development of a Structural Health Monitoring System to Evaluate Structural Capacity and Estimate Remaining Service Life for Bridges			
<b>Project Manager:</b> Ahmad Abu-Hawash		<b>Phone:</b> 515-239-1393	<b>E-mail:</b> ahmad.abu-hawash@dot.iowa.gov
<b>Project Investigator:</b> Brent Phares		<b>Phone:</b> 515-294-5879	<b>E-mail:</b> bphares@iastate.edu
<b>Lead Agency Project ID:</b> RT 329	<b>Other Project ID (i.e., contract #):</b> Addendum 367	<b>Project Start Date:</b> 3/01/10	
<b>Original Project End Date:</b> 2/28/15	<b>Current Project End Date:</b> 6/30/16	<b>Number of Extensions:</b>	

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
\$809,741	\$322,800.48	47%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$30,982.54		2%

**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.):**

We continue to work on the project as directed by the TAC. We continue to work on all aspects of the project and have recently expanded our work to develop procedures for estimating capacity. This work is truly cutting edge and if successful may result in a significant paradigm shift in the way that bridge load ratings are determined.

**Anticipated work next quarter:**

We will work on completing the Phase II plan. This will include working to study the damage detection capabilities (specifically true and false-positives) and continue the development of the capacity estimation model. Further, we will continue our discussions with WI and IL DOT regarding installations in their respective states.

**Significant Results:**

**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.