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, 2016) Quarter 2 (April 1 – June 30, 2016) Quarter 3 (July 1 – September 30, 2016) X Quarter 4 (October 1 – December 31, 2016)

Project Title: Development of a Structural Health Monitoring System to Evaluate Structural Capacity and Estimate Remaining Service Life for Bridges		
Project Manager: Ahmad Abu-Hawash	**Phone:** 515-239-1393	**E-mail:** ahmad.abu-hawash@dot.iowa.gov
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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: 6/30/17**	**Number of Extensions:**

Project schedule status:

X 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	$616,228.71	64%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
$7,886.99		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.):

TAC meeting was held on 1/03/2017 to report the progress of the project.
In this quarter, efforts are made in the life cycle cost analysis to show the financial benefits of SHM instrumentation. Benefits of no-cost service life extension, maintenance activity delay, and preventing of bridge collapse are considered in this analysis to justify the initial and operation cost of SHM instrumentation.

Anticipated work next quarter:

We will be continue working on our remaining life models, improving the SHM facilitated condition based bridge management prototype, and documenting the methodology, assumptions, and results of the life cycle analysis.

Significant Results:
A life cycle cost analysis was done 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.