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, 2015) X Quarter 2 (April 1 – June 30, 2015) Quarter 3 (July 1 – September 30, 2015) Quarter 4 (October 1 – December 31, 2015)

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:	**Other Project ID (i.e., contract #):**	**Project Start Date:**
RT 329	Addendum 367	3/01/10
Original Project End Date:	**Current Project End Date: 6/30/17**	**Number of Extensions:**
2/28/15		

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	$450,480.72	57%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
$2,437.97		1%

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 have completed our investigation of establishing damage detection limits based upon structural parameters. The results of this appear very promising. At this time we are considering a two-level "alerting" process. The lowest level (say, a caution) would be based upon six sigma limits (statistics) and the higher level (say, a warning) would be based upon structural features.

We have also begun trying to tie structural behavior, of say the deck, to current condition. This would allow us to create a series of analytical models that would allow us to predict the behavior of the bridge (changes in behavior in reality) that could be related to current condition and therefore make a remaining life estimate.

Anticipated work next quarter:

We anticipate making the entire damage detection and load rating process automated in the next quarter. In addition, we will continue working on our remaining life models.

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.