

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: <input checked="" type="checkbox"/> Quarter 1 (January 1 – March 31, 2015) <input type="checkbox"/> Quarter 2 (April 1 – June 30, 2015) <input type="checkbox"/> Quarter 3 (July 1 – September 30, 2015) <input type="checkbox"/> 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: 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:

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	\$448,042.75	53%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$8,182.60		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.):

As directed by the project Technical Advisory committee we began exploring how to set damage detection limits based upon structural parameters (as opposed to statistical parameters). We have been exploring the implications of these parameters by assessing the true and false detection rates associated with 8 different possible structural limits.

Also, we began work on the development of a remaining life prediction model. To start this effort we began by developing lists of items that may cause changes in condition and therefore remaining life. This lists includes such items as temperature, traffic, application of salts, etc. Further, we initiated efforts to identify the types of models that might be appropriate for such an application. At this time we are leaning towards a model based upon neural network ideas.

Anticipated work next quarter:

In the next quarter we hope have continued making progress on calibrating our models to identify “structurally” significant changes. Additionally, it is anticipated that the laboratory test program will have been initiated.

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.