**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, 2013) Quarter 2 (April 1 – June 30, 2013)  Quarter 3 (July 1 – September 30, 2013) X Quarter 4 (October 4 – December 31, 2013) |
| **Project Title:** Development of a Structural Health Monitoring System to Evaluate Structural Capacity and Estimate Remaining Service Life for Bridges |
| **Project Manager: Phone: E-mail:**Ahmad Abu-Hawash 515-239-1393 ahmad.abu-hawash@dot.iowa.gov |
| **Project Investigator: Phone: E-mail:**Brent Phares 515-294-5879 bphares@iastate.edu |
| **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: 6/30/16** | **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** |
| $809,741 | $291,817.94 | 45% |
|  |  |  |
|  |  |  |

***Quarterly*** Project Statistics:

|  |  |  |
| --- | --- | --- |
|  **Total Project Expenses** **This Quarter** |  **Total Amount of Funds**  **Expended This Quarter** | **Percentage of Work Completed** **This Quarter** |
| $22,858.09 |  | 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.):**

A meeting with the TAC was held on 12/20/2013. At that time we presented the work completed this quarter which principally is in three areas: damage detection, capacity estimation, and load rating. The capacity estimation was a new topic and generated the most discussion. We also started the discussion on the second and third bridges to be monitored as part of this work.

We anticipate that Phase II is approximately 3 months behind schedule.

**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). Further, we have started working on two new topics – which relate more to Phase II. For example we have started studying how to estimate Capacity and Remaining life. This has just begun.

**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.