

**TRANSPORTATION POOLED FUND PROGRAM  
QUARTERLY PROGRESS REPORT**

Date: June 30, 2016

Lead Agency (FHWA or State DOT): Indiana 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.*

<p><b>Transportation Pooled Fund Program Project #</b> (i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</p> <p><b><u>TPF 5-238</u></b></p>	<p><b>Transportation Pooled Fund Program - Report Period:</b></p> <p><input type="checkbox"/> Quarter 1 (January 1 – March 31)</p> <p><input checked="" type="checkbox"/> Quarter 2 (April 1 – June 30)</p> <p><input type="checkbox"/> Quarter 3 (July 1 – September 30)</p> <p><input type="checkbox"/> Quarter 4 (October 1 – December 31)</p>	
<p><b>Project Title:</b> Design and Fabrication Standards to Eliminate Fracture Critical Concerns in Steel Members Traditionally Classified as Fracture Critical</p>		
<p><b>Name of Project Manager(s):</b> Tommy E. Nantung</p>	<p><b>Phone Number:</b> (765) 463-1521 ext. 248</p>	<p><b>E-Mail</b> <a href="mailto:tnantung@indot.in.gov">tnantung@indot.in.gov</a></p>
<p><b>Lead Agency Project ID:</b></p>	<p><b>Other Project ID (i.e., contract #):</b></p>	<p><b>Project Start Date:</b> 8/1/2011</p>
<p><b>Original Project End Date:</b> 7/31/2014</p>	<p><b>Current Project End Date:</b> 7/31/2014</p>	<p><b>Number of Extensions:</b> None</p>

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	Percentage of Work Completed to Date
<b>\$790,000</b>	<b>\$768,407</b>	<b>95%</b>

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
<b>\$5,373</b>	<b>0.70%</b>	<b>100%</b>

**Project Description:**

The objective of this research project is to take advantage of the major advances that have occurred in the past 30 years in the following areas related to fracture control in steel bridges:

1. The very high toughness of high performance steel (HPS), which was not available 30 years ago, can be used to take brittle fracture off the table so to speak. Crack arrest and very large defect tolerance can be ensured in these steels. Similar strategies have been employed by other industries for several years.
2. Modern fatigue design and detailing can ensure fatigue cracking does not occur.
3. Modern fabrication, shop inspection and the AWS FCP, greatly reduces the likelihood that defects are not introduced during fabrication. Advancements in NDT techniques along with technologies not regularly used, such as phased array UT have the potential to further reduce the chance of a defect being missed.

**Progress this quarter (includes meetings, work plan status, contract status, significant progress, etc.):**

- Complete all phases of experimental and analytical work.
- Draft Final report summarizing Phase II full-scale testing and FEA is about 90% completed

**Anticipated work next quarter:**

- Submit Phase II final report

**Significant Results:**

During the past quarter, the major steps forward included:

1. Complete all phases of experimental and analytical work.
- 2.

**Circumstance affecting project or budget. (Please 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).**

**Potential Implementation:**

None to date