

## TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Date: Dec 31, 2023

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.*

<b>Transportation Pooled Fund Program Project #</b> <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i>  <u><b>TPF 5-436</b></u>		<b>Transportation Pooled Fund Program - Report Period:</b> <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input checked="" type="checkbox"/> Quarter 4 (October 1 – December 31)	
<b>Project Title:</b> <b>Development of Criteria to Assess the Effects of Pack-out Corrosion in Built-up Steel Members</b>			
<b>Name of Project Manager(s):</b> Tommy E. Nantung		<b>Phone Number:</b> (765) 463-1521 ext. 248	<b>E-Mail</b> <a href="mailto:tnantung@indot.in.gov">tnantung@indot.in.gov</a>
<b>Lead Agency Project ID:</b>		<b>Other Project ID (i.e., contract #):</b>	<b>Project Start Date:</b> 9/1/2019
<b>Original Project End Date:</b> 8/31/2022		<b>Current Project End Date:</b> 8/31/2024	<b>Number of Extensions:</b> None

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>\$680,000</b>	<b>\$514,569</b>	<b>83%</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>\$21,628</b>	<b>3.2%</b>	<b>85%</b>

\*Based on revised project end date of 8/2024.

**Project Description:**

This study proposes to:

- 1) To develop AASHTO ready specifications for the evaluation of the effects of pack-out corrosion in built-up steel tension, compression, and flexural members.
- 2) Provide guidance on the need for repairs and corrosion rates that can be expected in various environments in order to assist owners in programming when repairs may need to be made.
- 3) Identify the most effective methods of repairs and provide suggesting verbiage that could be used when preparing special provisions for repairs.
- 4) Develop several case-study examples, including calculations that will be used for training users on the methodologies to be developed. It is anticipated that the research team will host a number of webinars or on-site training sessions to ensure technology transfer and implementation.

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

- FEA parametric studies continued on flexural and axial members to evaluate the effect of pack-out corrosion on the strength and fatigue performance of such members.
- Completed the design of small scall tension pull tests. These tests will utilize specimens with existing moderate to severe corrosion. The objective of these tests is to evaluate the effect of the corrosion on the ductility of the plate and determine if limits on ductility are required. The tests the specimens with corrosion were completed in December. Two additional tests are scheduled for February in which specimens with no or insignificant corrosion will be tested to obtain base-line data
- Continued work on parametric studies focused on compression members was intimated for a range of flexural members.
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**Anticipated work next quarter:**

- Continue with the finite element parametric studies and based on the results of the prototype test, develop the detailed experimental program for compression flanges;
- Conduct base-line tension tests
- Continue analytical and experimental studies on tension flanges with pack-out corrosion.
- Continue evaluating the strength and fatigue data.
- Continue to craft AASHTO-ready code and commentary for evaluation of members with pack-out corrosion for consideration by AASHTO COBS, S&E and S&M committees

**Significant Results:**

1. None to date

**Potential Implementation:**

None to date