TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Date: _Sept. 30, 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.

Transportation Pooled Fund Program Project # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* ***TPF 5-436***	**Transportation Pooled Fund Program - Report Period:** ☐Quarter 1 (January 1 – March 31) ☐Quarter 2 (April 1 – June 30) XQuarter 3 (July 1 – September 30) ☐Quarter 4 (October 1 – December 31)

Project Title: **Development of Criteria to Assess the Effects of Pack-out Corrosion in Built-up Steel Members**		
Name of Project Manager(s): **Tommy E. Nantung**	**Phone Number:** **(765) 463-1521 ext. 248**	**E-Mail** tnantung@indot.in.gov
Lead Agency Project ID:	**Other Project ID (i.e., contract #):**	**Project Start Date:** 9/1/2019
Original Project End Date: **8/31/2022**	**Current Project End Date:** **8/31/2024**	**Number of Extensions:** None

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	Percentage of Work Completed to Date**
$680,000	**$496,333**	**80%**

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date*
$31,771	**4.7%**	**80%**

*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.
- Began 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.
- Continued work on parametric studies focused on compression members was intimated for a range of flexural members.
- Complete additional large-scale flexural tests into the inelastic range on girders where an outer coverplate fracture was simulated by cutting the cutting the cover plate. The girders behaved very well and no negative impacts on strength or ductility were observed.

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;
- 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, T-18 and T-14.

Significant Results:

1. None to date

Potential Implementation:
None to date