

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Date: March 31, 2020

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>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i> <u>TPF 5-436</u>		Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input checked="" type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> 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: 8/31/2022	Number of Extensions: 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**
\$760,000	\$65,142	25%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$23,652	3.1%	27.8%

**This total budget is based on funds that are shown as “committed” on the TPF website.

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.):

- In spite of the challenges with Purdue being shut down from approximately mid-March through the end of June due to COVID-19, reasonable progress has been made regarding the finite element studies to evaluate the effects of pack-out on the strength of compression members. Analysis have begun to consider the effects of pack-out in flexural members considering fastener pitch, cover plate thickness, flange thickness, and degree of pack-out distortion on the strength of th emember. The studies will be used to develop the details associated with the experimental portion of the research.

Anticipated work next quarter:

- Continue with the finite element studies and develop the experimental program
- It is likely a prototype flexure member will be fabricated which includes simulated packout corrosion on a cover plate to further calibrate the FE studies.
- Coordinate a project kick-off meeting in the fall of 2020.
- Continue the development of the large-scale experimental program.
- Obtain additional members with pack-out corrosions. If a state has such members available or coming out of service in the near future, the RT requests that they contact Robert Connor to discuss the potential for obtaining the members for the research.

Significant Results:

1. None to date

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).

1. The COVID-19 restrictions resulted in Purdue University shutting down entirely in Mid-march 2020. All access to laboratory facilities were halted effectively bringing all research to a standstill. In mid-June 2020, standard Operating Procedures were being developed for review by the University to begin safe operations. While video meetings between members of the research team were routinely held, actual on-site research was effectively stopped for the entire 2nd Quarter. It is anticipated progress will be made beginning in July 2020 as the University slowly opens.

Potential Implementation:

None to date

