# TRANSPORTATION POOLED FUND PROGRAM
# QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): MICHIGAN DEPARTMENT OF TRANSPORTATION

**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(254) | **Transportation Pooled Fund Program - Report Period:** ☑ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☐ Quarter 3 (July 1 – September 30) ☐ Quarter 4 (October 1 – December 31) | |
|---|---|---|
| **Project Title:** EVALUATION AND ANALYSIS OF DECKED BULB-T BEAM BRIDGE | | |
| **Name of Project Manager(s):** Mr. David Juntunen, P.E. | **Phone Number:** 517-335-2993 | **E-Mail** JuntunenD@michigan.gov |
| **Lead Agency Project ID:** OR11-010/JN. 114419 | **Other Project ID (i.e., contract #):** Contract # 2010-0293/Auth. No. 3 | **Project Start Date:** September 19, 2011 |
| **Original Project End Date:** September 30, 2014 | **Current Project End Date:** September 30, 2014 | **Number of Extensions:** 0 |

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 |
|---|---|---|
| $349,000.00 | $53,028.33 | 20.91% |

***Quarterly*** Project Statistics:

| Total Project Expenses and Percentage This Quarter | Total Amount of Funds Expended This Quarter | Total Percentage of Time Used to Date |
|---|---|---|
| $53,028.33 (15.2%) | $35,821.21 | 17% |

**Project Description**:

To analyze and evaluate the decked bulb-T beam (or decked I- beam) as a viable replacement for the side-by-side box-beam bridge. The project description uses the term bulb- T beam as a general description of an I- beam shape, with a wide top flange that can serve as a deck surface. For this type of beam to be a viable replacement to a box beam, it must have a very robust cross-section designed to have a shallow depth-to-span ratio; which makes it very different than the standard AASHTO section used by some states. The use of a bulb- T beam cross section would eliminate inherent problems associated with the ability to inspect and repair box-beam type structures. The Bulb-T beam cross-section will provide enough space at the section bottom for ease of periodical inspections and maintenance of critical elements; such as beam web and the suffit of the bridge deck slab.

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

Project Status:
This Transportation Pooled Fund (TPF) research project is on schedule and continues to progress well.

• The literature review is 100% complete. The PI completed his work on Chapter #1 of the research report.
The review includes literature on side-by-side box beam bridges, decked bulb T beam bridges, shear key joints with UHPC, and CFRP reinforcement.

• The Experimental Investigation (EI) portion of the research plan is approximately 25% complete.
Work activities include investigating steel flexure, CFRP shear, and two CFRP flexure analyses of various reinforcements of control beams.

• The Numerical Simulation (NS) portion of the research plan is approximately 40% complete.
Work activities include verification and parametric study of TPT arrangement and shear key joints.

**Anticipated work next quarter**:

The TAC has scheduled the study's 2nd. quarterly progress meeting on April 27, 2012.

A technology transfer opportunity has occurred in May 2012. The project manager, along with support from TAC members have been invited to make a presentation (a status of the study's work to date) at the Mid-North Regional Peer-to-Peer Exchange on PBES on May 2, 2012 in Detroit, MI.

The next quarterly progress meeting is scheduled for August 2, 2012 @ 1:00PM (EST).

**Significant Results:**

**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:**