TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Wisconsin 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)*	**Transportation Pooled Fund Program - Report Period:**
TPF-5(193) Suppl # 77	☐ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☐ Quarter 3 (July 1 – September 30) ☑ Quarter 4 (October 4 – December 31)

Project Title: Phase IIA Vehicle Dynamics Testing, Validation of Vehicle Models & Computer Simulation of Rock Ditch Liners		
Name of Project Manager(s): Reid, Bielenberg, Faller, and Lechtenberg	**Phone Number:** (402) 472-3084	**E-Mail** jreid@unl.edu
Lead Agency Project ID: 2611130089001	**Other Project ID (i.e., contract #):**	**Project Start Date:** 6/30/2014
Original Project End Date: 6/30/2017	**Current Project End Date:** 6/30/2017	**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
$110,000	$91,811	90%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
	$13,527	80%

Project Description:

The primary research objective for this study includes the continued development of safety guidelines for use in the design and placement of ditch liners and check dams along highways and roadways. During the Phase I effort and as part of the initial research funding, preliminary safety guidelines were proposed along with a preparation of a research plan for use in their future evaluation. At this time, the Wisconsin Department of Transportation has deemed the preliminary guidelines viable and has requested that continued research be performed to further evaluate and modify the guidelines using computer simulation and full-scale vehicle crash testing.

Due to the significant scope of this ongoing research program, the study has been split into multiple phases. The objective for each specific phase is listed below:

Phase I - Develop preliminary guidelines for the safe construction of rock ditch liners and rock check dams – (Completed 2011)

Phase II - Conduct LS-DYNA computer simulation to develop critical crash testing matrix for evaluating vehicular impacts into rock ditch liners and rock ditch checks.

This current project is a subset of Phase II. This subset is limited to simulation of a 1100c vehicle over a 1:1 slope ground rock ditch liner and one full-scale crash test of such.

Phase III - Perform a series of full-scale crash tests on rock ditch liners and check dams placed in a traversable ditch.

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

A journal paper was drafted, submitted to sponsors for a brief review, and submitted to the IRSC conference to be held in San Francisco in 2017. Revision and writing continued on the draft report in progress.

Anticipated work next quarter:

A draft report is undergoing internal review. Based on feedback provided during the journal paper review, recommendations and the summary and conclusions will be revised to incorporate sponsor comments. Draft report will be sent to sponsors for review and revision.

Significant Results:

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).

None

Potential Implementation:

Rock ditch liners are a convenient method of controlling erosion and improving water runoff. If rock ditch liners can be proven to be safe and traversable for errant vehicles, these liners may be used in erosion-sensitive locations adjacent to federally-funded highways.