TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Nebraska 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)*	**Transportation Pooled Fund Program - Report Period:**
TPF-5(193) Supplement #79	☐ 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:		
TL-4 Evaluation of the Midwest High-Tension, 4-Cable Barrier		
Name of Project Manager(s):	**Phone Number:**	**E-Mail**
Reid, Faller, Lechtenberg, Bielenberg, Rosenb	402-472-9070	kpolivka2@unl.edu
Lead Agency Project ID:	**Other Project ID (i.e., contract #):**	**Project Start Date:**
2611211096001 and 2611211111002	RPFP-15-CABLE-1	8/1/14
Original Project End Date:	**Current Project End Date:**	**Number of Extensions:**
7/31/17	7/31/18	1

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
$308,235 (+$100,000 deferred to Cable R&D)	$101,688 ($100,000 Cable R&D)	20

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
	$50,955	

Project Description:

The Midwest Roadside Safety Facility (MwRSF) has been conducting research for the Midwest States Regional Pooled Fund Program to develop a non-proprietary, high-tension, four-cable, median barrier that is capable of being used anywhere in a V-ditch with 4H:1V side slopes. Three tests still remain to complete the test matrix of the cable barrier system in a V-ditch. In addition, the four-cable, high-tension, median barrier has never been tested on level terrain. There is a concern that FHWA may not approve this design without testing on flat ground, especially when considering the wide cable spacing and increased cable heights. Further, the barrier deflections observed in crash tests performed in a 4H:1V V-ditch are likely higher than would be observed on flat ground. Crash testing of the barrier installed on level terrain would identify barrier deflections and working widths that can be expected when the barrier is used in narrow medians with gentle slopes and would allow for better performance comparisons between the Midwest four-cable barrier and other proprietary systems.

Objective: To complete the development, testing, and evaluation of the four-cable, high-tension, median barrier system for use on level terrain.

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

Internal review of the draft report of the final 5 component tests evaluating the addition of a cap to the top of the post to prevent cutting of the floorboard continued.

Internal review of the draft report of test no. MWP-9 continued.

Fabricate additional samples with additional weakening hole patterns. Conduct dynamic component tests on the additional closed post sections.

Initiate brainstorming for design concepts for the clean-slate high-tension cable median barrier.

Update meeting held with member states on December 6, 2017. Member states requested that cost comparison numbers be collected for the closed post design options and various cable attachments.

All funds for this project were exhausted in Quarter 4 of 2017. This is the last quarterly report for this project and all further progress will be discussed in Project No. TPF-5(193) Suppl.#89 - RPFP-16-CABLE-4.

Anticipated work next quarter:

None.

All remaining funds were designated for the Year 27 Bullnose project (TPF-5(193) supplement #108) and all progress will be discussed in that project.

Significant Results:

None

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).

This project is an extension to previous projects (RPFP-08-02: Four-Cable Median Barrier in 4:1 V-Ditch; RPFP-09-01: New Funding for High-Tension Cable Barrier on Level Terrain with New Cable Attachment; RPFP-10-CABLE-2: Replacement Funding for High-Tension Cable Barrier on Level Terrain; RPFP-12-CABLE1&2: Completion of the Development and Evaluation of the Midwest Four-Cable, High-Tension, Median Barrier Phase I, V-Ditch; RPFP-12-CABLE1&2: Completion of the Development and Evaluation of the Midwest Four-Cable, High-Tension, Median Barrier Phase II, Level Terrain; RPFP-14-CABLE-1 - TPF-5(193) Supplement #64, Project Title: Continued Development of the Midwest Four-Cable, HT, Median Barrier (Continuation)).

Note, in Quarter 3 of 2015, $100,000 of Project No. RPFP-15-CABLE-1 - TPF-5(193) Supplement #79, Project Title: TL-4 Evaluation of the Midwest High-Tension, 4-Cable Barrier (Yr 24 shortage) was committed to Cable R&D and has already been spent.

Note, in Quarter 2 of 2016, $200,000 of Project No. RPFP-15-CABLE-1 - TPF-5(193) Supplement #79, Project Title: TL-4 Evaluation of the Midwest High-Tension, 4-Cable Barrier (Yr 24 shortage) was committed to Year 27 Project No. RPFP-17-BULLNOSE-1 - TPF-5(193) Supplement #108, Project Title: MASH Testing of the Thrie Beam Bullnose System – Phase I.

Potential Implementation:

The successful completion of the development, testing, and evaluation of the Midwest four-cable, high-tension, median barrier on level terrain will allow the member states to implement a non-proprietary, high-tension, cable system along our nation's highways and roadways. In addition, the crash testing of the four-cable, high-tension, median barrier on level terrain would also provide a more complete understanding of barrier performance (i.e., dynamic deflections, working width, etc.) when used in relatively flat, narrow medians. The crash results from the level terrain testing will be used in combination with computer simulation to evaluate the effects of reduced post spacing. The successful completion of this project along with the non-proprietary four-cable, high-tension, median barrier in V-ditch and cable guardrail end terminal would help to assure acceptance by FHWA and improve its chances for widespread implementation.