

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT):

_____ Mn/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 # TPF (148)	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 4 – December 31)	
Project Title: The Effects of Implements of Husbandry "Farm Equipment" on Pavement Performance (MnROAD Study)		
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Lead Agency Project ID:	Other Project ID (i.e., contract #):	Project Start Date:
Original Project End Date: Jan. 2011	Current Project End Date: Sept. 2011	Number of Extensions: 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	Total Percentage of Work Completed
\$430,000	\$400,000	95%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$12,000		5%

Project Description:

Over the past few decades, there have been significant changes in both farm size and farm equipment. These factors, combined with a regulatory emphasis that has encouraged farmers to store manure as a liquid and apply it in a short time frame, have encouraged the farm equipment industry to produce larger manure hauling and application equipment. The shift to larger and heavier equipment has occurred at a faster rate than pavement design, materials technology, or state regulatory structures could match. Today, equipment innovations such as steerable axles, flotation tires, and new tire designs are not reflected in state DOT regulations. This situation has led to the adoption of equipment and practices that, while complying with the letter of the law, may actually create more pavement damage. The objectives of this study are to determine pavement response under various types of agricultural equipment (including the impacts of different tires and additional axles) and to compare this response to that produced by a typical 5-axle tractor-trailer. New test sections will be constructed at MnROAD for this research for testing overweight vehicles from farming and a number of other industries. The pavement response collected under this study will be used to calibrate the analytical models for prediction of relative damage caused by heavy farm equipment.

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

Task 1. Design Experimental Pavement Sections

This task has been completed.

Task 2. Database Development

This task has been completed.

Task 3. Predict Pavement Responses

This task has been completed.

Task 4. Construction of the Test Sections

This task has been completed.

Task 5. Pavement Response Monitoring

Task 6. Conduct Comprehensive Data Analysis

The task report has been finalized and submitted in June of 2011. It included a comprehensive analysis of the data collected in field tests performed in 2008-2010.

Task 7. Damage Analysis Model

A computer program TONN2010 was modified to account for a non-standard tire footprint. The MEPDG concrete cracking model was adopted for analysis of the effect of heavy agricultural equipment. The results have been presented to the TAP on May 25th and to the industry on June 20th. The task report is close to completion.

Task 8. Prepare Draft Final Report

A significant portion of the efforts has been documented. The report is nearly completion is will be finalized in the first week of June

Anticipated work next quarter:

The research team will finalize task 6, 7, and 8 reports.

Significant Results:**Circumstance affecting project or budget (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).**

A delay with measurements of tire footprints with Tekscan as well as difficulties in the data analysis did not permit completion of the report on time. Although a significant portion of the report is completed, some additional editorial work as well as finalizing the conclusions is required. A no-cost time extension will be required to allow for completion of the report, TAP review, and addressing comments.