**TRANSPORTATION POOLED FUND PROGRAM**

**QUARTERLY PROGRESS REPORT**

Lead Agency (FHWA or State DOT): \_\_\_\_\_Minnesota 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 #**  **TPF (148)** | | **Transportation Pooled Fund Program - Report Period:**  XQuarter 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: The Effects of Implements of Husbandry on Pavement Performance** | | | |
| **Project Manager:** Dr. Shongtao Dai  **Phone: 651-366-5407 E-mail: Shongtao.Dai@state.mn.us** | | | |
| **Project Investigator: Lev Khazanovich Phone: 612-624-4764 E-mail:khaza001@umn.edu** | | | |
| **Lead Agency Project ID:** | **Other Project ID (i.e., contract #):** | | **Project Start Date:** |
| **Original Project End Date:** | **Current Project End Date:** | | **Number of Extensions:** |

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 | $430,000 | 100% |

***Quarterly*** Project Statistics:

|  |  |  |
| --- | --- | --- |
| **Total Project Expenses**  **This Quarter** | **Total Amount of Funds**  **Expended This Quarter** | **Percentage of Work Completed**  **This Quarter** |
| $10,000 |  | 2% |

**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 manuare 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 occured 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 teh 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

This task has been completed.

Task 6. Conduct Comprehensive Data Analysis

This task has been completed.

Task 7. Damage Analysis Model

This task has been completed.

Task 8. Prepare Draft Final Report

The research team has addressed the TAP comments on the draft final report

Task 8. Prepare Final Report

The final report has been completed and submitted to MnDOT.

**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).**